



MEMORANDUM

To: Planning Commission

From: Stacy Clauson, Contract Planner
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Date: September 4, 2008

Subject: Kirkland's Shoreline Master Program Update (SMP)
File No. ZON06-00017

INTRODUCTION

On September 11, 2008 the Commission will begin its review of the initial draft of the regulations associated with the Shoreline Master Program. The Commission has previously reviewed the draft shoreline policies. Staff recognizes that this is an extensive amount of material that needs to be reviewed by the Commission. In Section II below we've identified key policy issues to focus the discussion. The Commission may also want to look at Attachment 6 which is the outline for the SMP to get a sense of the overall framework. It is unlikely that we will be able to work through all the sections at this meeting (which can be carried over to the Oct. 9th meeting) however we did want the Commission to see how the SMP fits together.

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I. RECOMMENDATION

- Review and provide direction on proposed shoreline designations and zoning regulations for the update to the Shoreline Master Program.
- Review the draft work program and provide direction on timing and structure of continued public involvement.

II. KEY ISSUES

Attachment 6 contains a draft outline of a new Chapter to be added to the Zoning Ordinance that would contain the regulations addressing the shoreline. The draft regulations contained in this packet (see Attachments 9 through 30) address the following sections of this new Chapter:

- Definitions
- Shoreline Environment Designations
- Uses and Activities in the Shoreline Environment
- General Regulations.

Other sections will be brought forward to Planning Commission review at later meetings.

The draft regulations are based upon the policies that were drafted with Planning Commission direction in the earlier part of this year, on direction provided in the State Guidelines, on advice and consultation with The Watershed Company, the Department of Ecology, and City staff with expertise in areas covered under these provisions, on examination of public input and existing regulations, as well as by reviewing approaches used by other cities undergoing an SMP update process.

In order to use the meeting time effectively, staff recommends that the following key policy issues that staff has identified be discussed at the September 11, 2008 meeting, as well as any other key concerns identified at the meeting by Planning Commission members:

- A. Shoreline Environment Designations – Have the properties been accurately classified into shoreline environment designations based on an appropriate analysis of the shoreline environment designation criteria? (See Section VI starting on page 6, as well as the proposed Shoreline Environment Designations in Attachment 7. Also the Commission may want to review the criteria for shoreline environment designation in Attachment 9, and analysis for consistency with criteria in Attachment 8).
- B. Shoreline Environment Management Policies – Are the proposed management policies appropriate for each Shoreline Environment? (see Section VI starting on page 6, as well as the proposed management policies in Attachment 10).
- C. Use Table – Are the permitted uses, conditional uses, and prohibited uses appropriate for each shoreline environment designation? In particular, is the allowance of a float plane facility as a Conditional Use in the Urban Mixed shoreline environment appropriate? (see Section VII starting on page 12, Attachment 11, as well as Attachment 13 which contains a comparison of key changes or new uses in the chart).
- D. Use Definitions - Are any revisions needed to new definitions, particularly those relating to new uses that are unique to the SMP? (e.g. concession stand, neighborhood-oriented retail establishment, dry land storage, marina, tour boat facility, moorage buoy, boat launch, boat house, houseboat, ferry terminal, water taxi, and helipad) (see Attachment 12).
- E. Shoreline Wetlands and Streams – Is the direction taken for updating the wetland and stream regulations as they would apply within the shoreline jurisdiction acceptable? (see Section VIII.2 starting on page 13, as well as Attachments 15 and 16).
- F. Shoreline Vegetation Management –
 - *Upland Vegetation* - What approaches should be used for shoreline vegetation? (see Section VIII.8 starting on page 20, as well as Attachment 22 containing an outline of other approaches taken by nearby jurisdictions which are farther along in the SMP update process than Kirkland).
 - *In-Water Vegetation* – When should in-water removal of vegetation be permitted? (see Section VIII.8 starting on page 20, as well as Attachment 22 containing an outline of other approaches taken by nearby jurisdictions which are farther along in the SMP update process than Kirkland).

- G. Use of Pesticides, Herbicides, and Fertilizers -
- *Upland Vegetation* – What approach should be taken with regard to regulations addressing application of pesticides, herbicides, and fertilizers in areas adjacent to Lake Washington and streams and wetlands that are part of the shoreline jurisdiction? (see Section VIII.9 starting on page 27).
 - *Aquatic Noxious Weeds* - What approach should be taken with regard to management of aquatic noxious weeds, such as milfoil? (see Section VIII.9 starting on page 27, as well as Attachment 23. Also please refer to earlier comments submitted by Mr. Richard Sandaas addressing this issue, as contained in Attachment 5 in the packet for the April 10th meeting as well as letter dated April 10, 2008 that was distributed to Planning Commission at the April 10th meeting).
- H. View corridors - What portion of the Lake or shoreline edge should be visible within designated view corridors? (see Section VIII.10 on page 30).

III. WORK PROGRAM

The Planning Commission has completed review of draft policies for the Shoreline Master Program update. Regulations to implement these policies will be drafted and reviewed in 2008 and 2009. Attachment 1 is a work program to accomplish these tasks. The proposed schedule indicates seven Planning Commission study sessions. Staff is bringing the first drafts of the following sections for the Planning Commission review at the September 11, 2008 meeting:

- Zoning Code Chapter outline
- Definitions (for relevant portions of SMP)
- Shoreline Environment Designations and Shorelines of Statewide Significance
- General Regulations, and
- Uses and Activities in Shoreline Environment

This memorandum also includes different policy options for addressing shoreline vegetation regulations.

A Public Hearing is tentatively planned for scheduled for April, 2009 and adoption is scheduled for July, 2009. Staff has identified an initial list of issues that are to be addressed. These are noted above in Section II. At the meeting on September 11, 2008, the Commission may want to note other issues to be considered as we start to draft the regulations.

IV. PUBLIC PARTICIPATION

Since the last meeting with the Planning Commission on May 8, 2008, the following opportunities for public participation and comment have occurred:

- A. Open House. A Public Open House focusing on the SMP Update was held on Monday, June 9th. The primary goals of the Open House were to:

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1. Provide broad notice to property owners and other interested citizens of the City's Shoreline Master Program and opportunities available to engage in the process.
 2. For participants to advise the City on what issues are of greatest interest and concern to them and, therefore, should be included in the update;
 3. Identify the future vision of the waterfront in 25 years; and
 4. For participants to prioritize key tools that the City should use in implementing the updated Shoreline Master Program.
- B. The Open House was broadly advertised through a number of different outlets, including mailed notices to property owners within the shoreline jurisdiction, posting on the City's main webpage, noticing to members of the Shoreline list-serv, publishing of articles in the newspaper, mailed notices to non-governmental organizations and state and federal departments with interest, and posting on notice boards throughout the City. It was estimated that 31 people attended the Open House. Background materials were made available for public review at the Open House and a copy of the display boards is included for your review in Attachment 2. A record of the items discussed is included in Attachment 3.
- C. Survey. An on-line survey was conducted addressing issues relating to shoreline management. The availability of the survey was noticed via the Open House, on notice boards, to both the City's list-serv and Shoreline list-serv, on the City's main website, in news releases and other outlets. The survey was available from June 9th to July 11th and 59 citizens participated. The results of the survey are summarized in Attachment 4.
- D. Draft Policies. The draft goals and policies as reviewed by the Planning Commission and Houghton Community Council have been posted on the SMP website, with an opportunity for the public to review and comment.

Public notice of the Planning Commission will continue to be provided on the public notice boards that have been installed at key locations along the City's shoreline. The project list service will e-mail all subscribers with meeting information and provide links to the staff meeting packets available for viewing prior to the PC meetings. The website developed for the SMP Update will continue to be managed to include information about meeting dates and meeting packets. In addition, a public workshop is tentatively planned for March, 2009. Planning Commission members are encouraged to attend this workshop. Staff will also continue to work with the Houghton Community Council during regulation development.

V. UW STUDY EVALUATION LAKE WASHINGTON SHORELINE PERMIT PROCESS

An interdisciplinary group of graduate students enrolled in the University of Washington's Environmental Management Certificate Program released their results of a study undertaken evaluating the Lake Washington Shoreline Permitting Process (see Attachment 5). Some of the key recommendations from this report are as follows:

- Streamline the permit process for eco-friendly shoreline designs at the state and/or local level.

- Increase outreach and education efforts to Lake Washington property owners and shoreline contractors.
- Promote collaboration and coordination between the local, state and federal permit issuing agencies that regulate shoreline construction on Lake Washington.

In response to these recommendations, a working group of representatives from Lake Washington jurisdictions has convened in order to promote collaboration and coordination. The City is participating in this effort.

VI. SHORELINE ENVIRONMENT DESIGNATIONS

Within the areas subject to the Shoreline Master Program, Environment Designations function much like zones do throughout the City, locating particular land uses where they are most appropriate, considering ecological functions, public utilities, road access, and the planned and established development pattern.

A. Introduction

Environment Designations are based on physical, biological, and development characteristics of specific shoreline reaches. In determining the discrete boundaries for each shoreline environment and the management policies for each Shoreline Environment, there are a number of issues that need to be considered, including:

- Maintaining ecological function and ensure protection of ecologically intact shorelines. In designating shoreline boundaries and establishing different uses, we should consider how the planned uses are likely to impact current ecological conditions.
- Reserving appropriate waterfront lands for water-dependent and water-related uses, as well as public access, considering the long term needs of Kirkland for its limited waterfront lands.
- Identifying current uses, projected needs for marinas and other water-dependent uses, and public access.
- Integrating for consistency with overlapping land use plans, such as the Comprehensive Plan and Zoning Code.
- Designating based on current conditions (structures, uses, clearing), regardless of previous SMP Designation.

B. State Classification System

Staff has modeled the proposed Shoreline Environment Designations after the system contained in the Guidelines. The following is a brief summary of the different shoreline environment designations:

- *Aquatic* – This environment is intended to protect, restore, and manage the unique characteristics and resources of the shoreline areas waterward of the ordinary high water mark.
- *Natural* – This designation is applied to areas that have low human disturbance and high value ecologically.

- *Urban Conservancy*- protect and restore ecological functions of open space, flood plain and other sensitive lands where they exist in urban and developed settings, while allowing a variety of compatible uses.
- *Shoreline Residential* – This designation is intended to cover areas planned for high or medium density residential uses have distinct needs for protection of ecological resources. Under the State Guidelines, the City has the option of establishing two or more different shoreline residential environments to accommodate different densities or conditions, provided that both environments adhere to the guidelines. The proposed designation system distinguishes between predominately single-family residential development and those areas with single residential uses on small lots and multi-family residential developments.
- *Urban Mixed* – This designation allows a range of uses, and accompanying regulations should minimize further impacts to ecological functions.

C. Proposed City Shoreline Designations and Map

Attachment 7 contains a proposed map designating areas within the Shoreline Jurisdiction into seven different shoreline environments reflecting existing conditions and uses along the shoreline. The following is a description of the shoreline environments shown on the map:

- *Aquatic* – The Aquatic designation has been applied to lands waterward of the ordinary high water mark.
- *Natural* – The Natural designation has been applied to:
 - Areas in Juanita Bay Park within 200 feet of the Lake Washington ordinary high water mark, as well as wetlands within the Forbes Creek wetland complex which extends into the Forbes Creek corridor to Planned Area 9.
 - Wetlands in and adjacent to the Yarrow Bay Wetlands complex.
- *Urban Conservancy*- The Urban Conservancy designation has been applied to all areas classified as Park/Open Space in the Comprehensive Plan, except for portions of Juanita Beach Park and Marina Park which are located within urban business districts and planned to have a higher intensity of development and Yarrow Bay and Juanita Bay Wetlands Parks which would be in the Natural designation. In addition, a portion of private beach west of Juanita Beach Park would be included in this designation because of its natural shoreline and location next to a Class A stream.
- *Low Density Residential*- The Low-Density Residential designation has been applied to all areas classified as Low Density Residential in the Comprehensive Plan, except for those parcels containing associated wetlands contiguous with the Yarrow Bay Wetlands.
- *Urban Residential*- The Urban Residential designation has been applied to all areas classified as High Density Residential and Medium Density Residential in the Comprehensive Plan, except the wetland or stream buffer areas that have been designated as either Natural or Urban Conservancy.
- *Urban Mixed*- The Urban Mixed designation has been applied to all areas classified as Commercial and Office/Multi-Family in the Comprehensive Plan, as well as Marina Park and

portions of Juanita Beach Park, which both support or are planned to support high-intensity water-oriented uses.

D. Consistency with State Guidelines

Designation of the City's shoreline environments is to be based primarily on the Guidelines Designation Criteria described in WAC 173-26-211 of the new State Guidelines, which addresses shoreline ecological functions, and current conditions/uses as characterized in the Shoreline Inventory, Analysis and Characterization. Attachment 8 contains a detailed analysis of how the proposed classification system and map are consistent with the State Guidelines. In Table 1 of the analysis, The Watershed Company has noted each of the management policies described in WAC 173-26-211(4)(a)(i-iii) and analyzes each of the shoreline segments established in our inventory for consistency with these principles.

It should be noted that as a result of the existing degree of development and modification of the City's shorelines, the land use designation in the comprehensive plan largely drives the assignment of designations, with the exception of the Natural and Urban Conservancy Shoreline Designations, where the biological and physical attributes of a property largely drive the designation. As an example, in the City's shoreline area, existing undeveloped areas of natural resources, such as undeveloped wetlands and buffers, have been designated based upon the biological character of these areas, regardless of the existing land use designation, resulting in some conflicts between the existing Comprehensive Plan designation and proposed shoreline environment designation, as further described in Section E below. The existing biological character of the shoreline also plays a role in distinguishing between the Natural and Urban Conservancy environment designation assignments. In this way, the biological and physical characteristics of each area have been considered in applying the appropriate environment designation.

Current conditions are incorporated into this analysis based upon the original shoreline inventory and analysis, which divided the shoreline into different study segments (segments B-D), based upon existing land use and character.

Each Designation is required to have:

- A stated purpose, based on WAC 173-26 Guidelines, that describes the shoreline management objectives of the designation in a manner that distinguishes it from other designations.
- Classification criteria, which provide the basis for classifying or reclassifying a specific shoreline area within an environment designation.
- Management policies, which are intended to assist in the interpretation of the environment designation regulations and evaluate consistency with the Comprehensive Plan.

The description of these purpose and classification criteria is contained within a new section of regulations contained in Attachment 8. The management policies have been added to the policy language in the new Comprehensive Plan Chapter, which is included in Attachment 9. Please note that the proposed City management policies for the shoreline area are closely based on the management policies contained in the recommended State classification system developed in the WAC 173-26 Guidelines, but revised as needed to account for the following unique characteristics of Kirkland's shorelines and the City's desired goals and policies:

- Commercial Uses in Urban Conservancy - The State Guidelines note that in the Urban Conservancy shoreline environment, uses that preserve the natural character of the area or promote preservation of open space, floodplain, or sensitive lands should be the primary allowed uses. In the City, limited water-oriented commercial activities are proposed to be permitted within the City's waterfront parks, including concession stands, boat rental facilities, etc. These commercial uses contribute to the public recreation objectives of the City's shoreline parks and help to support the operation and maintenance of these open spaces.
- Commercial Development in Urban Residential - The State Guidelines note that commercial development should be limited to water-oriented uses in Shoreline Residential areas. In the Urban Residential shoreline environment, staff has proposed to include limited non-water oriented uses such as neighborhood-oriented retail establishments, in support of existing policies to promote a balanced and complete community with shops, services and employment close to home. In order to limit potential impacts, these uses have been limited in location and proposed to require a Shoreline Conditional Use process.
- Non-water Oriented Uses in Urban Mixed - The State Guidelines encourage that non-water oriented uses be prohibited except as part of mixed-use developments or limited situations where they do not conflict with or limit opportunities for water oriented uses or on sites with no direct access to the shoreline. In the Urban Mixed shoreline environment, staff has proposed some non-water oriented uses, such as offices and daycares, to be permitted within the Urban Mixed shoreline area, generally separated from the shoreline by a major arterial or as part of a mixed-use development, in order to provide areas of mixed-use development that can provide a full-spectrum of uses that would be efficient and support a multimodal transportation system.

E. Comparison of Existing Designations versus Proposed Designations

Table 3 in Attachment 8 contains a chart that compares the existing shoreline environment designations with the proposed shoreline environment designations. The following describes some of the key changes to the existing shoreline environment designation system, as well as potential inconsistencies between current Comprehensive Plan designations and proposed Shoreline Environment Designations:

- Yarrow Bay -
 - A Natural designation is proposed over all or part of undeveloped single family platted parcels at the northwest and southwest ends of Yarrow Bay area that contain wetlands and/or associated buffers and are contiguous with the Yarrow Bay Wetlands.

The existing Comprehensive Plan designates this area for low density residential development. The Natural designation as applied to this area recognizes the need to protect these areas, which have high ecological function.

The State Guidelines note that single family residential development may be allowed as a conditional use within the Natural environment. The Natural designation is comparable to the designation of these properties as Conservancy 2 in the current SMP. Both the existing SMP and proposed SMP would require a Shoreline Conditional Use to construct a single-family residence in this shoreline environment. As a new

provision, the new SMP specifically restricts further land division in the Natural shoreline environment, if the lot to be created would be wholly contained within the Natural shoreline environment. This provision clarifies the existing City practice that prohibits the creation of new lots that would be fully encumbered by wetlands or wetland buffers. In addition, please note that development of a single-family residence in the Natural Shoreline environment may also require a Shoreline Variance, if impacts to wetland or wetland buffers are required (Note: this issue is further addressed in the Wetlands Section below). A Shoreline Variance requires approval by the Department of Ecology and may be difficult to obtain.

- The Natural designation overlaps onto some properties that are designated in the Comprehensive Plan for either medium density development or Office/Multifamily (The Plaza at Yarrow Bay). This is not consistent with the existing Comprehensive Plan designation of these properties. The implications of this designation are not expected to be significant, since these properties are currently developed under an existing Planned Unit Development and the development on the property within the shoreline jurisdiction is already constrained by existing critical area regulations.

- Juanita Bay –
 - A Natural designation is proposed to the associated wetlands in and adjacent to Juanita Bay Park, extending into the Forbes Creek corridor east to Planned Area 9. The existing Comprehensive Plan designates most of the Forbes Creek corridor for single family use. Much of the area east of 98th Avenue NE that contains wetlands associated with Juanita Bay were not identified in the current SMP as being within shoreline jurisdiction and, as a result, were not designated. The areas that were previously included were designated as Conservancy 1, which is comparable to the Natural designation proposed for this area. The implications for properties in the Yarrow Bay area noted above apply to the properties in the Juanita Bay area as well.
 - The Natural Designation has also been applied to the portions of properties located on the west side of 98th Avenue NE that contain wetlands, including the former restaurant site. This is not consistent with the existing Comprehensive Plan designation of this property for commercial development. The State Guidelines note that commercial development should not be allowed in the Natural Environment and these uses are proposed to be prohibited in the Natural Environment. The implications of this designation are not expected to be significant, since development on the property is already constrained by existing critical area regulations.

- East side of Lake Street/Lake Washington Blvd - Several properties on the east side of Lake Street/Lake Washington Blvd. NE south of the CBD contain existing commercial uses and are designed for commercial use in the Comprehensive Plan, but are designated in the existing SMP as Urban Residential. An Urban Mixed designation is proposed for these properties to resolve an existing inconsistency between the current SMP and Comprehensive Plan.

- Waterfront Parks - Properties within the City's waterfront park system, with the exception of Marina Park and Juanita Beach Park in the commercial areas, and Yarrow Bay Wetland Park and Juanita Bay Park in extensive wetland systems, are proposed to be designated as Urban Conservancy, in recognition of their use as open space and suitability for maintaining or restoring ecological functions. Presently, these properties are located in either the Urban Residential or Suburban Residential designation areas, the same as the surrounding residential properties.

The proposed designation for Marina Park is Urban Mixed to reflect the existing high-intensity of water-oriented uses and the adjacent Central Business District. The current SMP designation is also Urban Mixed.

- Juanita Business District - Properties within the Juanita Business District, except those encumbered by wetlands associated with Lake Washington, have been designated as Urban Mixed, in recognition of the existing high intensity development of these properties. Presently, these properties are designed in the current SMP as Urban Residential and as commercial in the Comprehensive Plan.
- Juanita Beach Park - Portions of Juanita Beach Park (outside of the Juanita Creek and its associated buffer) are proposed to be designated as Urban Mixed, in recognition that this portion of the park is part of the Juanita Business District and suitable and planned for high-intensity water-oriented uses as part of development of the approved Master Plan, including short term moorage, a boat rental float, a bathhouse with concessions and boat rental activities, a lakefront promenade, a community commons that can be used for community events, including a Farmer's Market, movie nights, etc. The portion containing Juanita Creek and its associated buffer is proposed to be designated as Urban Conservancy due to the critical area and natural shoreline characteristics. Currently, the park has an SMP designation of Urban Residential.
- Juanita Beach Camps Community Beach – The property west of Juanita Beach Park contains a private community beach owned commonly by property owners of the Juanita Beach Camps subdivision located north of Juanita Drive. The beach has a natural shoreline and a portion of the property contains the buffer for Juanita Creek that is on the Juanita Beach Park property to the east. Given the natural shoreline and critical area constraints of a stream buffer, the Urban Conservancy designation placed on the Juanita Creek area to the east is proposed to be extended to the west to include the community beach shoreline area and the portion of the community beach property that is within the stream buffer. The remaining northern portion of the community beach property would be designated as Urban Residential because the Comprehensive Plan designates the property for high density residential. The current SMP designation is Urban Residential.

F. Proposed SMP versus Zoning

The proposed shoreline environment designations are done at a broad based level taking into account the physical, biological, and development characteristics of specific shoreline areas. As a result, the shoreline designations are more general than the City's zoning classifications, which break the City into more discrete planning areas. Zoning classifications and regulations can

change more readily than shoreline master program designations and regulations which are intended to have a long-term planning horizon and require a timely and complex State approval process to amend.

VII. USES AND ACTIVITIES

Attachment 11 contains a draft Use Table that outlines proposed uses and activities would be either permitted, subject to conditional approval, or prohibited within particular Shoreline Environments. At later meetings, we will be drafting use-specific regulations for your review to determine what development standards will apply for each use within each type of Shoreline Environment. Please note that shoreline-specific definitions that may assist in your review of the Use Table are contained in Attachment 12.

When determining allowable uses and resolving use conflicts on shorelines, we need to apply the following preferences and priorities in the order listed below:

1. Reserve appropriate areas for protecting and restoring ecological functions to control pollution and prevent damage to the natural environment and public health.
2. Reserve shoreline areas for water-dependent and associated water-related uses.
3. Reserve shoreline areas for other water-related and water-enjoyment uses that are compatible with ecological protection and restoration objectives.
4. Locate single-family residential uses where they are appropriate and can be developed without significant impact to ecological functions or displacement of water-dependent uses.
5. Limit nonwater-oriented uses to those locations where the above described uses are inappropriate or where nonwater-oriented uses demonstrably contribute to the objectives of the Shoreline Management Act.

Attachment 13 describes some of the **key changes** from the existing SMP and compares the proposed SMP uses with existing zoning provisions. Please evaluate these proposed changes and be prepared to discuss any concerns or recommended revisions that you may have.

One particular use that the Planning Commission wanted to receive additional public reaction before providing direction concerned float plane facilities. As part of the survey, this question was asked and there was strong lack of support (64%) expressed for establishing any water-based aircraft facilities within Kirkland's waterfront commercial business districts. Because a float plane facility is a water-dependent use, staff is still showing this as a conditional use in the Urban Mixed Shoreline Environment. The use is proposed to be limited to water-based aircraft facilities for air charter operations. Staff would recommend that this issue be discussed at the Planning Commission meeting to provide further direction on this issue.

VIII. GENERAL REGULATIONS

The regulations in Attachment 14 through Attachment 30 contain provisions that will be applied either generally to all shoreline areas or to shoreline areas that meet the specified criteria of the

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provision without regard to the environment designation. Provided below is a summary of each issue, input from the public (if any), options to consider (if there are different policy options), together with a staff recommendation, if needed.

1. **Critical Areas – General Standards** (see Attachment 14)

Key Issue: Including a new section that addresses the sequence in which mitigation shall be followed, as required under the provisions of WAC 173-26-201(2)(e).

Background: These new standards are proposed by staff to address many of the best management practices that should be used for wetlands, streams, and geologically hazardous areas.

Proposed Regulations: See Attachment 14.

2. **Wetlands** (see Attachment 15)

Key Issues: Updating the City's current wetland management system as it will apply within the shoreline area to be consistent with current Ecology guidance on 1) the wetland rating system to be used, 2) appropriate buffer widths, and 3) ratios for compensatory mitigation. Amendments to the existing permit processes are also needed to reflect shoreline permitting and requirements of the Department of Ecology.

Background: Under the provisions of WAC 173-26-221(2), the City's Shoreline Master Program must provide for management of critical areas, including wetlands. The City's wetland regulations as contained in the SMP must provide a level of protection that is at least equal to the provisions of Chapter 90. The Guidelines also advise us to review the Department of Ecology's [Western Washington Wetland Rating System](#) or a regionally specific, scientifically based method.

Staff has consulted with the Department of Ecology on the adequacy of the City's current wetland regulations found in Chapter 90. The City's current wetland regulations were adopted in 2003, which predates the issuance of the final version of the Department of Ecology's [Western Washington Wetland Rating System](#) as well as Ecology's synthesis of scientific literature on wetlands and issuance of guidance for management of wetlands (Wetlands in Washington State). Both of these documents meet the criteria for Best Available Science (BAS) as defined in WAC 365-195-905, which cities and counties are required to meet when amending their zoning regulations to protect critical areas.

After review, the Department of Ecology has issued a formal letter advising the City that our wetland rating system does not meet the requirements established in WAC 173-26-221(2) (see Attachment 16). The City's standard buffers are also not consistent with current Ecology Guidance.

According to current state requirements, the City must undertake an update to its current critical area regulations by 2011. The deadline for completion of the update to the SMP is 2009, which means that the City must make some amendments with this SMP update to be consistent with the State Guidelines. In evaluating options on how to respond to this issue, staff has considered the schedule and time frame in which to complete the SMP. Given these factors, staff is recommending that a full update of the critical areas ordinance be deferred until a later time in

order to allow the SMP to progress on a timely schedule and with sufficient focus and attention, as well as to ensure that sufficient staff resources can be dedicated to updating the critical areas ordinance City-wide.

Proposed Regulations: As an alternative to a full re-draft of the wetland regulations, staff has proposed to use the City's existing regulations for wetlands as contained in Chapter 90 as a template for the SMP provisions, with amendments made as needed to the wetland rating, buffers, and permitted modifications to be consistent with the current Ecology guidance on wetland protection (note: the provisions are highlighted so that you can better track any proposed changes to the existing regulations contained in Chapter 90 KZC). The focus has been to make the minimum necessary changes needed at this time to existing standards contained in Chapter 90 KZC in order to comply with the Department of Ecology's guidance. It should be noted that these changes apply to very few privately held properties. To better understand the impact of the new standards, staff has prepared a map that shows the extent of wetland buffers based upon current wetland regulations as compared to that with the new buffers (see Attachment 17). Private properties are highlighted in grey, and the purple areas show where buffers are anticipated to change (either increase or decrease depending on circumstance). It is estimated that the new standards may increase buffers on less than 10 privately-held properties.

As the City conducts its required update to the critical area regulations, a more complete review and revision to the wetland regulations will be made. As a result, these provisions may need to be re-evaluated when the full update to the critical areas regulations is undertaken City-wide. In the meantime, this limited application of new Ecology required standards provides the City an opportunity to evaluate these provisions and their potential application City-wide.

The draft regulation language is contained in Attachment 15 and the following provides an overview of key amendments:

- The **general exceptions section** found in KZC 90.20 is not included in these provisions. Ecology has advised jurisdictions that these types of general exceptions cannot be included, as they either conflict or are redundant with the provisions of WAC 173-26-040 which establish the types of activities that are exempt from the provisions of the SMP.
- The **Washington State Wetland Rating System** for Western Washington is proposed to be used for the shoreline regulations, rather than the existing rating system contained in Chapter 90 KZC, which was determined by the Department of Ecology to not be in compliance with the State Guidelines. The use of the Washington State Wetland Rating System for Western Washington may smooth permitting for applicants proposing to directly impact wetlands, which also require Ecology review. Currently, applicants impacting wetlands must rate the impacted wetland using both the City's and Ecology's systems and this change will streamline this requirement.
- The **buffer requirements** for wetlands have been modified to reflect more current standards based on best available science. The proposed buffers are reflective of the buffers that King County has adopted to regulate wetlands within their Urban Growth Area (UGA). These buffer requirements have also been incorporated into the Lake Forest Park critical areas provisions as part of their SMP update, and based upon initial review and

discussions, it appears that the Department of Ecology will accept these buffers. To better understand the impact of the revised wetland rating and wetland buffers, staff has prepared a map that shows the extent of wetland buffers based upon current wetland regulations as compared to that with the new buffers (see Attachment 17). Note that these buffer standards would only apply to those areas within the shoreline jurisdiction and would not include buffers that are located outside of 200 feet from the ordinary high water mark – those wetland buffers outside of the 200 feet area would continue to be measured using the buffer standards contained in KZC Chapter 90.

- Standards for **storm water outfalls** have been clarified and revised to reflect current guidance on location of piped systems.
- The standards for **compensatory mitigation** have been modified to utilize the mitigation ratios specified in the Washington State Department of Ecology, U.S. Army Corps of Engineers Seattle District, and U.S. Environmental Protection Agency Region 10 guidance as contained in Wetland Mitigation in Washington State – Part 1: Agency Policies and Guidance. Similar to use of the new rating system, this will smooth permitting and mitigation design for applicants proposing to directly impact wetlands, which also requires Ecology review. Currently, applicants impacting wetlands are already required by Ecology to use Ecology’s wetland mitigation ratios.
- The provisions for **Reasonable Use** as contained in KZC 90.140 have not been included. A Reasonable Use permit allows a single family home to be built on a single family zoned property containing a wetland or buffer that otherwise could not be built due to critical area restrictions. For a commercial or office zone, the same applies for construction of an office use. The City’s Reasonable Use provisions provide the City with a mechanism to approve limited use and disturbance of a sensitive area and sensitive area buffer when strict application of Chapter 90 KZC would deny all economically viable use of the property. The Department of Ecology has advised jurisdictions that this type of modification to a shoreline associated wetland, which is typically conducted by the City without review by the Department of Ecology, requires review under the standards and process for a Shoreline Variance, over which the Department of Ecology has approval authority. Presently, staff is working with the City Attorney’s Office to determine whether additional standards should be added to these critical area regulations to address development of a single family residence in wetland areas and may bring proposed revisions to this section based on the outcome of this discussion to the September 11th meeting.

Public Input: Protection of natural systems such as wetlands has been consistently supported as a high priority among SMP participants. Respondents rated the protection of functioning habitats as the top priority for Kirkland to focus its attention on for its waterfront, followed by preventing stormwater runoff and restoring degraded habitats.

Staff recommendation: Staff proposes the adoption the Department of Ecology’s wetland rating system and the buffer widths used for the King County UGA area. This is viewed as the best approach to updating the regulations and likely to be acceptable to the Department of Ecology. The King County UGA area buffer widths are similar to the buffer

widths used by other jurisdictions in updating their wetland regulations. Staff believes that the buffer widths are easier and less costly to implement than the Ecology buffers which require interpretation and analysis of the adjoining uses to determine appropriate buffer widths.

3. Streams (see Attachment 15)

Key Issues: None.

Background: The Guidelines addressing streams are contained in WAC 173-26-221(2)(c)(iv) and focus on:

- No net loss of ecological functions
- Facilitation of restoration projects

The City's current stream regulations satisfy these requirements by containing:

- Standards for buffer protection on both sides of the stream which restrict land surface modification or development activities that might otherwise degrade the existing conditions, such as improper storm water outfalls, unmanaged clearing or grading, or vegetation removal.
- Provisions for allowance of stream rehabilitation projects.

Unlike the wetland regulations, the Department of Ecology has not issued specific guidance for management of streams. Further, in Kirkland the management of streams in the shoreline area is limited to the 200 foot length of stream that would be contained within the shoreline jurisdiction. As a result, it is not expected that the City will be required to make significant changes to its existing stream regulations at this time.

Proposed Regulations: The existing stream regulations as contained in Chapter 90 KZC have been incorporated into the draft SMP Chapter, with minor wording changes to some existing sections of the stream regulations as they currently existing in Chapter 90 KZC. No significant changes (e.g. to buffers, to buffer reduction mechanisms, etc.) have been made. In addition, the following key changes were made (similar to the wetland provisions):

- The **general exceptions section** found in KZC 90.20 is not included in these provisions. Ecology has advised jurisdictions that these type of general exceptions cannot be included, as they either conflict or are redundant with the provisions of WAC 173-26-040 which establishment the types of activities that are exempt from the provisions of the SMP.
- Standards for **storm water outfalls** have been clarified and revised to reflect current guidance on location of piped systems.
- The provisions for **Reasonable Use** as contained in KZC 90.140 have not been included. The City's Reasonable Use provisions provide the City with a mechanism to approve limited use and disturbance of a sensitive area and sensitive area buffer when strict application of Chapter 90 KZC would deny all

economically viable use of the property. The Department of Ecology has advised jurisdictions that this type of modification requires review under the standards and process for a Shoreline Variance, over which the Department of Ecology has approval authority.

Public Input: Protection of natural systems such as streams has been consistently supported as a high priority among SMP participants. Respondents rated the protection of functioning habitats as the top priority for Kirkland to focus its attention on for its waterfront, followed by preventing stormwater runoff and restoring degraded habitats.

4. **Geologically Hazardous Areas** (see Attachment 18)

Key Issues: None.

Background: The Guidelines addressing geologically hazardous areas are contained in WAC 173-26-221(2)(c)(ii) and focus on:

- Complying with minimum guidelines for geologically hazardous areas as contained in the Growth Management Act provisions
- Prohibiting new development (or creation of new lots) that would:
 - Cause foreseeable risk from geological conditions
 - Require structural shoreline stabilization over the life of development

The City's current geologically hazardous areas regulations contained in KZC Chapter 85 satisfy these requirements, with the exception of the provisions addressing structural shoreline stabilization, by containing:

- Provisions addressing the identification and protection of erosion hazard area, landslide hazard area, and seismic hazard areas.
- Provisions requiring geotechnical investigation and geotechnical reports.
- Provisions which permit the limitation or restriction of any development activity that may:
 - Significantly impact slope stability or drainage patterns on the subject property or adjacent properties;
 - Cause serious erosion hazards, sedimentation problems or landslide hazards on the subject property or adjacent properties; or
 - Cause property damage or injury to persons on or off the subject property.

Staff plans to address issues relating to structural shoreline stabilization in separate provisions.

As a result, the existing provisions of KZC Chapter 85 have been proposed to be incorporated into the SMP by reference to satisfy the Guidelines requirements. In addition, the proposed provisions include a new definition of a geotechnical report which complies with the State Guideline's definition of what a geotechnical report

must include, that contains some additional items that are not presently addressed in the report requirements outlined in KZC 85.15.

Proposed Regulations: The existing regulations as contained in Chapter 85 KZC have been referenced in the new shoreline regulations.

5. **Archaeological and Historic Resources** (see Attachment 19)

Key Issues: None.

Background: The Guidelines addressing archaeological and historic resources are contained in WAC 173-26-221(1) and focus on:

- Requiring a stop work and notification provision if archaeological resources are uncovered during excavation; and
- Requiring site inspection or evaluation by a professional archaeologist if permits are issued in areas documented to contain archaeological resources.

Proposed Regulations: The proposed regulations address these requirements and also provide additional direction for site planning and interpretation of potential sites, as well as provisions relating to historic buildings and sites.

6. **Flood Hazard Reduction** (see Attachment 20)

Key Issues: None.

Background: The City's shoreline contains floodplains associated with the mouth of Yarrow Creek in the Yarrow Bay wetlands and Forbes Creek. A floodway has also been identified within the Forbes Creek floodplain. The Guidelines addressing flood hazard reduction are contained in WAC 173-26-221(3) and focus on:

- Limiting new development within the channel migration zone or floodway;
- Limiting new structural flood hazard reduction measures, such as diking;
- Requiring public access in association with new publicly funded dikes or levees;
- Limiting removal of gravel for flood control, in consideration of potential for impacts.

Since the floodplains and floodway are contained within areas that are also predominately designated as critical areas (both wetlands and streams), the City's critical area regulations will satisfy many of these requirements, by:

- Limiting development, including flood hazard reduction measures, by imposing restrictions and buffer protections around the critical areas.
- Limiting removal of gravel to those circumstances where it is deemed to be part of a stream rehabilitation project.

The City's KMC 21.56 also contains provisions for flood damage prevention in KMC 21.56. These provisions satisfy many of the Guideline requirements by containing:

- Provisions addressing wetlands management, limiting activities that would disrupt the ability of wetlands to alleviate flooding impacts.
- Standards limiting encroachments, including fill, new construction, substantial improvements or other development in a floodway without certification by a registered professional engineer or architect demonstrating that the encroachments will not result in any increase in flood levels. KMC 21.56 also addresses existing development that may be located within floodways.
- Standards addressing subdivision proposals within special flood hazard areas, including standards to minimize flood damage and provide adequate drainage.
- Requiring any new construction located within designated special flood hazard areas to be designed pursuant to special standards to minimize impacts (e.g. vertical separation of habitable space from the level of the base flood elevation, flood proofing requirements, anchoring, etc.).

Proposed Regulations: The existing regulations as contained in KMC 21.56 have been referenced in the new shoreline regulations.

7. **Public Access** (see Attachment 21)

Key Issues: New location standards proposed for walkways and hours of operation.

Background: The City's existing SMP and shoreline zoning regulations contain provisions addressing public access that have resulted in the establishment of the City's waterfront trail system.

Proposed Regulations: The City's existing requirements would be used for the shoreline regulations with the following minor changes:

- Standards are proposed for the **location of the walkway**, including a requirement specifying separation from the ordinary high water mark. This separation is needed in order to protect the functions of the shoreline and provide adequate area for retention and/or installation of vegetation at the shoreline's edge. Staff anticipates that property owners may have concerns with this new requirement, as it generally will require pathways to be located further onto private property than many of the current installations.
- The existing requirements that a public pedestrian walkway be provided when an **Accessory Dwelling Unit (ADU)** is constructed as part of a single family use would no longer be required. In all other regulations, ADUs are treated the same as a single-family residence, and single family residences are exempt from providing public access. With this change, ADUs would be treated consistently.
- Elimination of the ability to **defer installation of the trail**. In the current shoreline regulations, the City could permit the walkway to be installed at a later time, for instance if properties to either side did not have an existing walkway. Staff has concerns about the ability to effectively require installation of a pathway at a later date and would recommend that the deferment option be eliminated.

- As a result of enforcement concerns, defined standards have been put into place addressing when the trails would be **open for public use**. Currently, the standard is from dawn to dusk, but these open ended hours have led to abuse by the public or limitation of use by property owners.

Public Input: Public access was rated as a top desirable aspect of Kirkland's waterfront. 85% identified public access (36%), Public Parks (26%) or walk ability (22%) as what they like best about Kirkland's waterfront

8. Shoreline Vegetation Management (see Attachment 22)

Key Issues: Direction is needed on the approaches to take for proposed regulations.

Background: The Guidelines addressing shoreline vegetation management are contained in WAC 173-26-221(5) and focus on:

- Vegetation conservation and restoration measures, aimed at protecting and restoring the ecological functions and ecosystem-wide processes performed by vegetation along the shoreline. A variety of measures can be used to achieve this objective, including clearing and grading regulations, setback or buffer standards, critical area regulations, requirements for specific uses, mitigation requirements, incentives and non-regulatory programs.
- Consistent with principle WAC 173-26-186(8)(c), master programs shall include goals, policies and actions for restoration of impaired shoreline ecological functions. These master program provisions should be designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program.

The existing SMP does not focus on the issue of shoreline vegetation and, as a result, this is a gap in our existing SMP provisions that needs to be addressed in the update.

Also, it is important to note that the scientific basis for some of these regulations is also based on recommendations stemming from the **WRIA 8 Chinook Salmon Conservation Plan**. A key recommendation from this Plan is to reduce bank hardening, restore overhanging riparian vegetation, and replace bulkheads and rip-rap with sandy beaches and gentle slopes. The City has been involved in the preparation of this Plan and has adopted a Resolution ratifying the WRIA 8 Chinook Salmon Conservation Plan. One of the concepts within this adopted Resolution is to use the scientific foundation and the conservation strategy as the basis for local actions recommended in the Plan and as one source of best available science for future projects, ordinances, and other appropriate local government activities. It was also noted that the comprehensive list of actions, and other actions consistent with the Plan, should be used as a source of potential site-specific projects and land use and public outreach recommendations. Staff has been incorporating relevant recommendations from this Plan as part of the proposed updated SMP. The Final WRIA 8 Chinook Salmon Conservation Plan can be accessed via the following link: <http://dnr.metrokc.gov/WRIAS/8/chinook-conservation-plan.htm>.

Public Input: This is one area in particular where different opinions have been raised. While the survey shows that over 76% of respondents indicated that the City should provide standards for shoreline vegetation and maintenance, there was little support among property owners for these standards. For those who did support standards, there was generally strong support for the options presented, which included:

- Restricting the use of herbicides and other maintenance practices that may be harmful to the environment (84% of respondents who indicated standards are needed).
- Encouraging the use of native plantings and limitations on herbicide use through the use of incentives, technical assistance and resource and education materials (74% of respondents who indicated standards are needed).
- Requiring native plantings along the shoreline edge and limiting extensive areas of lawn in the area adjacent to the lake (58% of respondents who indicated standards are needed).

The respondents at the public forum preferred to use incentives, such as expedited review and flexible standards over inflexible requirements.

Approaches for Shoreline Vegetation Management: There are a variety of approaches that can be taken as reflected in the chart below. At one end of the spectrum, the City could look at strict regulatory provisions requiring removal of existing structural shoreline protection measures and re-vegetation of the shoreline, and at the other end of the spectrum the City could rely upon clearing and grading provisions to protect existing vegetation, combined with non-regulatory programs aimed at facilitating shoreline restoration. The following outlines some of the different approaches that the City could choose to include in the updated SMP. These approaches can be combined into a regulatory and non-regulatory package to address protection of shoreline vegetation and restoration.

Approach	Description	Staff Discussion and Recommendation
1) Bulkhead softening or removal and re-vegetation	Require the following with new development, redevelopment, and expansions of certain size: Removal of a certain percentage of existing bulkhead along the lake frontage which is located at, below, or within 5 feet landward of the lake's ordinary high water mark (OHWM) and subsequent restoration of the shoreline to a natural or semi-natural state, including restoration of topography, and beach/substrate composition. If removal is determined to not be feasible, then other approaches to soften the shoreline that are appropriate for the site's location, size, and characteristics should be implemented.	<p>This approach is presently stated as a policy objective in the draft Shoreline Goals and Policies, due to the following:</p> <ul style="list-style-type: none"> • With the exception of Kirkland's large natural park areas, the shoreline has been highly modified by the presence of shoreline protective structures; • The extent of existing shoreline armoring has adversely impacted the ecological functions of the shoreline; • The WRIA 8 Conservation Strategy notes that softening or removal of bulkheads is the most important action to improve shoreline habitat. Removal or softening of existing bulkheads would result in improvement of the shoreline conditions over time. • New development or significant redevelopment of the site provides the best opportunity to evaluate shoreline alternatives and represents a significant investment into the property. If this option is pursued, a threshold for when to trigger this approach will need to be established. <p>It should be noted that shoreline property owners will likely be concerned about this approach, due to potential costs, concerns about beach erosion and structure safety, and City-imposed requirements to remove existing features on the property. However, it is important to note that this requirement would only apply to new development or significant redevelopment on a site. Therefore, only if a shoreline property owner was undertaking these activities would they be subject to this requirement. If this approach is pursued, there would need to be alternatives available, if an applicant is able to demonstrate that a bulkhead is necessary.</p> <p><u>Staff Recommendation:</u> Include this approach and establish a threshold of 50 percent of the replacement cost of the original upland development. As part of the revegetation component, require that a minimum of 25-30% of the shoreline setback be planted with natives, to be located at the shoreline edge. Allow access through the planted area to the shoreline area and for piers and docks.</p>

Approach	Description	Staff Discussion and Recommendation
2) Native plant requirement	Require that a percentage of the site landscaping consist of native species (i.e. 50% for the site as a whole and 100% in the shoreline setbacks).	<p>Except within the City's large natural parks, the City does not contain significant areas of native vegetation along the shoreline. This approach would result in an increase in the quantity and quality of vegetation within the shoreline jurisdiction as a whole. In general, this requirement would not add significant cost to a project, since vegetation would likely be established as part of any new development. If this option is pursued, a threshold for when to trigger this approach will need to be established.</p> <p>However, shoreline property owners who have participated generally have not expressed support for this type of approach, as it limits individual choice on private property. Presently, the City does not regulate the type of landscaping on private residential property, with the exception of the Prohibited Plant List or where the property is encumbered by a sensitive area such as a wetland or stream. This would impose a new requirement on shoreline property owners. This requirement would also restrict usable area for private yard space, which is generally sited to be oriented to the lake, and therefore often is located between the residence and the lake.</p> <p><u>Staff Recommendation:</u> Include this approach, with standards established requiring 50% of the area within the shoreline setback to be planted with native species. These standards should be applied when the cost of new development would be equal to or greater than 50 percent of the replacement cost of the original upland development and to any proposed landscaping modifications within the shoreline setback.</p>
3) Limitation on lawn areas	Limit percent of area within shoreline setback that can be planted as lawn area.	<p>Extensive lawns are generally discouraged due to their limited erosion control value, limited water retention capacity, and associated chemical and fertilizer applications. If this option is pursued, a threshold for when to trigger this approach will need to be established.</p> <p>Shoreline property owners who have participated generally have not expressed support for this type of approach, as it limits individual choice on private property. Presently, the City does not regulate the type of landscaping on private residential property, with the exception of the Prohibited Plant List or where the property is encumbered by a sensitive area such as a wetland or stream. Lawn areas are the most common landscape feature along the shoreline. This would impose a new requirement on shoreline property owners.</p> <p><u>Staff Recommendation:</u> Staff recommends that the use of approach 2 above. If approach 2 is not used, then staff recommends that this approach be considered.</p>

Approach	Description	Staff Discussion and Recommendation
4) Land Surface Modification Standards	Require preservation of existing natural shoreline conditions within entire shoreline setback, including preservation of existing native vegetation.	<p>Outside of protected critical areas, there are limited areas along Kirkland's shoreline where native vegetation exists. Preservation of this limited vegetation would protect existing functions. This approach would be consistent with Shoreline Goals and Policies.</p> <p><u>Staff Recommendation:</u> Require protection of native vegetation. (Note: This will primarily be implemented through critical area regulations, as this is where much of the existing native vegetation is contained in the shoreline area).</p>
5) Tree Removal Standards	Limit tree removal in shoreline area and institute requirements for tree replacement.	<p>The Zoning Code presently contains tree regulations. These tree regulations presently allow 2 trees to be removed within a calendar year on a property not undergoing development, and require replacement if there are less than 2 trees on a property. Under these provisions, existing trees within the shoreline area may be removed, resulting in a loss of existing shoreline ecological function. The City could choose to incorporate the existing provisions or, alternatively, require additional protection of trees located within the shoreline area by treating the shoreline setback area in the same manner as a critical area. Under this approach, a significant tree located within the shoreline setback could not be removed, unless it was demonstrated to be a nuisance or hazardous tree.</p> <p>The draft policies note the desire to limit tree clearing and thinning activities along the shoreline, noting that significant trees between structures and the shoreline should be preserved to the greatest extent feasible.</p> <p>This approach on its own is unlikely to result in improvement of shoreline ecological functions in the long term, and may contribute to net reduction in ecological functions as trees are permitted to be removed.</p> <p><u>Staff Recommendation:</u> Limit removal of existing trees in shoreline setback, except in those circumstances where the trees are posing a nuisance or hazardous situation. Include standards for replacement trees. Provide standards addressing tree pruning.</p>
6) Restoration of disturbed areas	Require restoration of areas that have been disturbed using native plant materials.	<p><u>Staff Recommendation:</u> This approach should apply within critical areas such as streams, wetlands, or their associated buffers. However, staff believes that the approach outlined in 2 above is a more comprehensive approach. If approach 2 is not used, then staff recommends that this approach be considered.</p>

Approach	Description	Staff Discussion and Recommendation
7) Performance-based standard	Establish a performance-based setback vegetation option that requires improvement of shoreline vegetation as part of any new development or redevelopment. Burden would be on the applicant to develop and present a site plan that increases site ecological function over existing condition.	<p>As opposed to some of the mandatory requirements noted above, this approach would provide greater flexibility to applicants and encourage creative solutions for difficult sites. However, since this would require knowledge and expertise with biological systems, it would necessitate that a third-party review the proposal to determine that the objectives have been met, similar to our current system for wetland and stream modifications. This can add significant expense and uncertainty to an application.</p> <p><u>Staff Recommendation:</u> Staff would not recommend implementation of this approach on its own. This approach could be used as a modification provision to the approaches outlined in 1 and 2 above, allowing the applicant flexibility to pursue other alternatives in lieu of these provisions.</p>
8) Incentive for reduced shoreline setbacks	Provide an incentive system that encourages removal of bulkheads and the installation of native plants, in exchange for a shoreline setback reduction. The amount of setback reduction could be scaled to the level and type of restoration proposed, allowing for flexibility in proposed designs.	<p>This approach is likely to result in a net increase in quantity and quality of vegetation within the shoreline jurisdiction as a whole. Generally, revegetation of varying degrees would be part of a suite of options (e.g. lawn reduction, bulkhead removal, use of green roof, impervious surface reduction, etc.) that can be selected by applicants to reduce a shoreline setback – flexibility that may be well received by shoreline property owners.</p> <p>However, under this approach, for those sites where a development does not intrude into the shoreline setback, shoreline conditions will not improve. Allowing development to encroach into the shoreline setback would effectively result in permanent loss of opportunity to restore the area to vegetation. There is also concern about the long-term maintenance of the improvements that were made.</p> <p><u>Staff Recommendation:</u> Staff believes that approaches 1 and 2, used in combination, will provide the best opportunity to improve shoreline conditions. If more flexibility is desired than these regulatory approaches, then staff would recommend that this type of incentive based approach be used in combination with minimum standards for land surface modification and tree removal.</p>
9) Incentive for expedited review	Provide a reduced review time/expedited review for shoreline property owners who initiate enhancement projects on their property	<p>This approach is consistent with the recommendations from the UW Study noted in Section V above. However, it is strictly a voluntary approach and may not result in a net increase in quantity and quality of vegetation within the shoreline jurisdiction as a whole.</p> <p><u>Staff Recommendation:</u> Staff believes that approaches 1 and 2, used in combination, will provide the best opportunity to improve shoreline conditions. If more flexibility is desired than these regulatory approaches, then staff would recommend that this type of incentive be used to facilitate restoration of shoreline vegetation for those applicants not pursuing a reduced shoreline setback under the provisions of approach 8 above.</p>

Approach	Description	Staff Discussion and Recommendation
10) Education and technical assistance	Develop workshop series or other materials specifically for lakeshore property owners on natural yard care and alternatives to vertical wall bulkheads.	This approach is consistent with the recommendations from the UW Study noted in Section V above as well as recommendations contained in the WRIA 8 Conservation Strategy. <u>Staff Recommendation:</u> Staff believes that this approach has merit and would recommend considering this approach as part of activities in the Restoration Plan.
11) Reduction of land assessments	Provide financial incentives (e.g. participation in a Public Benefit Rating System that could reduce land assessments) for shoreline property owners who initiate restoration projects or preserve a natural shoreline on their property.	<u>Staff Recommendation:</u> Staff believes that this approach has merit and would recommend considering this approach as part of activities in the Restoration Plan.

Attachment 22 also contains an overview of some of the measures incorporated by other jurisdictions who are farther along than the City in updating their SMPs.

Staff recommendation: Based on the scientific findings communicated in the WRIA 8 Chinook Salmon Conservation Plan, removal of bank hardening and establishment of shoreline vegetation are needed as part of the overall conservation strategy for Chinook Salmon recovery. Staff would recommend a combination of these above strategies be used that would include standards for bulkhead removal and re-vegetation, use of native plants, and land surface modification and tree removal standards.

Another policy decision that needs to be made is when the different approaches would be required: new development, redevelopment of 50% or more of the existing site improvements or for minor additions. Non-regulatory measures are also needed to be put into place.

Approaches for removal of Aquatic Vegetation: Removal of aquatic vegetation is also an area in which staff is seeking Planning Commission policy input. In this area, there are several different approaches that can be used:

Approach 1: Prohibit all removal of aquatic vegetation, except in cases where it threatens an existing water-dependent use (swimming, boating) or fish and wildlife habitat. Instead, require an aquatic weed management program that complies with all applicable requirements of the responsible agencies (i.e. Washington State Departments of Agriculture, Fish and Wildlife, Ecology, and the Federal Environmental Protection Agency) when removal is requested.

Approach 2: Allow all proposed removal of invasive aquatic vegetation. Such removal would be considered normal maintenance.

Staff Recommendation: Since there is often a fine line between whether or not control is biologically necessary or justifiable and because the different methods of control may each have

impacts, it is recommended that the applicant show a needed cause for the removal, as outlined in Approach 1.

9. Water Quality, Stormwater and Nonpoint Pollution (see Attachment 23)

Key Issues: Standards addressing application of pesticides, herbicides, and fertilizers within the shoreline area.

Background: The Guidelines addressing water quality are contained in WAC 173-26-221(6) and focus on:

- Preventing impacts to water quality and storm water quantity.
- Consistency between the SMP and other regulations addressing water quality.

The existing SMP contains no specific regulations to address water quality, though there are provisions in place in the KMC that address water quality and storm water quantity City-wide.

Proposed Requirements: In response to this current gap in SMP provisions, staff is recommending new standards be adopted for water quality within the updated SMP. Proposed new standards would include:

- **References to requirements in City's adopted surface water design manual.** The Public Works Department is currently working on an amendment to the City's current design manual to adopt the 2005 Department of Ecology Surface Water Manual in 2009. This new manual has enhanced protection measures and a greater emphasis on low-impact development strategies.
- Requirements for the use of **Best Management Practices (BMPs)**.
- Emphasis on use of **low-impact development techniques**.
- **Limitations on new outfalls** to Lake Washington.
- Restrictions or limitations on the use of **pesticides, herbicides, and fertilizers** within the shoreline (see discussion below).

One of the areas where regulatory direction on water quality is needed is for standards addressing application of **pesticides, herbicides, and fertilizers** within the shoreline area.

Public Input: Water quality and control of aquatic noxious weeds continue to be two areas of concern for SMP participants. While the concern over noxious weeds along the shoreline has been expressed by many, there may be differing recommendations for how the City should address this issue, including: allowing herbicide use, restricting herbicide use, and coordinating a City-response to this issue, as has been done in other Lake Washington communities such as Yarrow Point. Previous letters submitted by Mr. Richard Sandaas, a local shoreline property owner and member of the Shoreline Property Owners and Contractors Association (SPOCA), specifically address the issue of aquatic noxious weed control. In the web-survey, there was support expressed to restrict the use of herbicides and other maintenance practices that may be harmful to the environment (84%

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of respondents who indicated standards are needed), but there was not equal support among shoreline property owners to pursue this management technique.

Approaches to the control or elimination of pesticides, herbicides, and fertilizers:

- **Upland application.** There are different approaches that the City can consider with regard to application of pesticides, herbicides, and fertilizers within the shoreline area, including the following:
 - Include regulations which restrict use of pesticides, herbicides, or certain fertilizers within the shoreline setback.
 - Include regulations containing standards for application, in order to ensure that the pesticides, herbicides, and fertilizers are applied in a manner that minimizes their transmittal to adjacent water bodies. This could include limitations on aerial spraying, requirements for spot application or wicking, use of time-release fertilizers and herbicides, and compliance with federal and state standards.
 - Require compliance with state and federal laws and focus on education and technical assistance to encourage the voluntary use of natural yard care practices.

Presently, the provisions of Chapter 95 KZC limit application of fertilizers within 50 feet of a waterway or wetland, or a required buffer, whichever is greater. The City Park's Department uses an Integrated Pest Management Program (IPM) and, wherever possible, limits the use of pesticides, herbicides, and fertilizers.

All three of the approaches begin to address concerns about water quality contamination from nutrient loading and chemicals, though the options vary from a regulatory approach to one based more on education. A regulatory approach may be difficult to enforce, but would likely provide the most protection. However, the source of nutrients and chemicals are carried from throughout the watershed to Lake Washington; therefore this provision may unfairly restrict shoreline property owners where no equivalent standards exist throughout the City. There are other agencies that have jurisdiction that may have greater expertise in this area. For instance, the EPA is charged with implementing the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), which establishes labeling requirements with directions and restrictions for pesticide use. Also, the Washington State Department of Agriculture (WSDA) licenses certain people who use, sell or consult on the use of pesticides.

Staff Recommendation: Include standards regulating the application of pesticides, herbicides, and fertilizers as follows:

- 1) Within the shoreline setback, application of pesticides, herbicides, or fertilizers shall be prohibited, unless specifically authorized in an approved mitigation plan or otherwise authorized in writing by the Planning Official.

2) Pesticides, herbicides, or fertilizers used outside of the shoreline setback shall be applied in a manner as to prevent their transmittal into Lake Washington. The direct runoff of chemical-laden waters into Lake Washington is prohibited.

3) The use of pesticides, herbicides or fertilizers within the shoreline jurisdiction, including applications of herbicides to control noxious aquatic vegetation, shall comply with regulations of responsible agencies, including the Washington State Department of Agriculture, Department of Ecology, Department of Fish and Wildlife or the Federal Environmental Protection Agency.

- **Aquatic application.** There are different approaches that the City can consider with regard to application of herbicides in the water, used in the control of aquatic noxious weeds, including the following:
 - Defer to the existing State regulations addressing this issue. The Department of Ecology has issued an Aquatic Plant and Algae Management General Permit covering aquatic plant and algae management activities that discharge chemicals and other aquatic plant and algae control products into surface waters of the state of Washington. Continue to work on this issue at a regional level with other Lake Washington jurisdictions.
 - Prohibit the use of herbicides to control aquatic vegetation except where no reasonable alternative exists, the use of herbicides has been approved through a comprehensive vegetation management and monitoring plan, and if appropriate approval is granted under the Aquatic Plant and Algae Management General Permit.
 - Require submittal of a plan for City review and approval that documents the different methods evaluated and the reasons that the preferred method was chosen, based on consideration of the species, the density, the ecology of the area, as well as physical access to the area..

There is a wide variance of opinion on the appropriate response that the City should take. There are concerns that swimming, fishing and aquatic life are potentially adversely affected by chemical application. The Washington Toxics Coalition, a non-governmental organization, has issued information addressing their concerns with aquatic application in Lake Washington (see Attachment 24). The Parks Department, which controls aquatic noxious weeds in shoreline parks and in the Bays, uses hand and mechanical means to remove noxious weeds.

A ban on the use of herbicides may be difficult to enforce. Mechanical or physical methods of control can also cause adverse impacts. The preferred method of control may need to be site specific, as noted in comments previously submitted by Ms. Sandaas on this topic. As noted, there are other agencies that have jurisdiction that may have greater expertise in this area.

In response to a request by staff, the Department of Ecology has reviewed the City's preliminary policy language addressing this issue, which included the concept of limiting herbicide use (see Attachment 40). While Ecology has no objections with the City's stated preference for mechanical methods, it also emphasized that both mechanical and chemical methods have their pros and cons and the preferred method is site specific. Continued consultation with Ecology on the appropriate method was recommended and staff will plan to continue to review any draft regulation language with the Department of Ecology.

Staff recommendation (PRELIMINARY): Include standards prohibiting the use of herbicides to control aquatic vegetation except where no reasonable alternative exists, the use of herbicides has been approved through a comprehensive vegetation management and monitoring plan, and if appropriate approval is granted under the Aquatic Plant and Algae Management General Permit. Staff would like to discuss this issue with the Planning Commission before making a final recommendation.

10. View Corridors (see Attachment 25)

Key Issues: Defining what public view these regulations should be trying to protect:

- The view to the ordinary high water mark/shoreline edge and Lake Washington, or
- The view to a portion of Lake Washington, but not necessarily to the shoreline edge.

Background: The City's existing SMP contains provisions requiring view corridors that have preserved view corridors along Lake Washington Blvd NE.

Proposed Regulations: The existing provisions are intended to continue under the updated SMP, with the following minor changes:

- View corridor provisions are proposed **not to apply within the CBD**. This is recommended because of the desire to provide continuous pedestrian-oriented retail activity at the street. Further, since the CBD is focused around the waterfront, with intensive public use and views of the waterfront provided by existing public parks, street ends, public and private marinas, public access trails, and water-oriented uses, there are many opportunities available for the public to have visual and physical access to the waterfront in this area.
- View corridor provisions are proposed **not to apply within the JBD**. Based on past review with the Planning Commission, it was determined that the orientation of the lot pattern and existing development in this area did not support the creation of viable view corridors. Furthermore, like the CBD, the JBD contains a public park and has policies and regulations in place supporting the establishment of a public pedestrian walkway to connect Juanita Bay and Juanita Beach Park. These provisions either currently or are planned to provide the public with visual and physical access to the waterfront in this area.

- **Clarifications on permitted encroachments within the view corridor** to address past issues that have arisen in administering the current regulations (i.e. at grade and subterranean parking). One of the issues that staff is requesting Planning Commission direction on concerns what public view these regulations should be trying to protect:
 - The view to the ordinary high water mark/shoreline edge and Lake Washington, or
 - The view to a portion of Lake Washington, but not necessarily to the shoreline edge.

This could impact the types of allowed encroachments that should be permitted. It should be noted that the topography of the property, existing vegetation and improvements, and the parcel depth from the right-of way to the shoreline all are factors that affect the extent of the view from the right-of- way to the Lake.

- Additional standards providing direction on the **appropriate placement for the view corridor**.
- A new requirement for a **dedication for the view corridor**.

Public Input: Public visual access to the shoreline is a significant asset and unique feature of Kirkland's shorelines.

11. **Parking** (see Attachment 26)

Key Issues: None.

Background: The Guidelines addressing parking are contained in WAC 173-26-241(3)(k) and focus on limiting parking within the shoreline and minimizing the environment and visual impacts of parking.

Proposed Regulations: The City's existing SMP contains provisions addressing parking; the concepts from the existing regulations are carried forward to the new shoreline regulations, with clarifications on standards, as follows:

- New **prohibition on parking within the waterfront setback**, except for subsurface parking designed to meet certain standards;
- **Restrictions on parking extending closer to the shoreline** than the permitted structure; and
- **New design standards** for parking garage facades that may be face public pedestrian walkways, use areas, or parks.

12. **Miscellaneous Standards** (see Attachment 27)

Key Issues: New standards addressing the design of water-oriented uses.

Background: Site Planning and Building Design standards are one mechanism that local jurisdictions can use to respond to the management policies established for the Urban Mixed shoreline environment.

Proposed Regulations: The proposed standards include provisions addressing screening of outdoor storage areas, rooftop appurtenances and garbage receptacles, glare and special standards for water-enjoyment uses to ensure that these uses are designed to facilitate enjoyment of the shoreline.

13. **Lighting** (see Attachment 28)

Key Issues: New lighting standards applying to the shoreline jurisdiction.

Background: Lighting standards are one mechanism that local jurisdictions can use to respond to the management policies established for the shoreline environments. Recent studies have also yielded results indicating that urban light has altered predator prey interactions for fish in Lake Washington (Kitano et al. 2008). Presently, the existing shoreline program does not contain lighting standards, but the zoning standards do require that light fixtures be selected, placed and directed so that glare produced by any light source, to the maximum extent possible, does not extend to adjacent properties or to the right-of-way.

Proposed Regulations: Staff has proposed regulations addressing direct point source light pollution and glare onto Lake Washington, with special light level standards for protection of Lake Washington and areas in the Natural shoreline environment, where wildlife may be more sensitive to the impacts of light, as well as protection of residential properties from adjoining commercial development in residential shoreline areas. The proposed lighting standards also include provisions to address aesthetic concerns about light pollution along the shoreline, including direction and shielding requirements.

Staff is seeking Planning Commission direction on this section, in particular whether there is agreement that aesthetic issues should be addressed and, if so, what the triggers should be to require existing lighting that may not conform to these standards to come into compliance, such as a major addition or a major remodel. In order to evaluate lighting levels, the standards also include new requirements for lighting studies to be submitted to the City for review.

14. **Signage** (see Attachment 29)

Key Issues: None.

Background: Sign standards are one mechanism that local jurisdictions can use to respond to the management policies established for the Urban Mixed shoreline environment. Existing zoning regulations already limit the use of electrical signs along portions of Lake Washington Blvd.

Proposed Regulations: New provisions are proposed to address signage in view corridors as well as signage that may be constructed over-water.

15. **In-water Work** (see Attachment 30)

Key Issues: None.

Proposed Regulations: Standards are proposed by staff to address many of the best management practices that should be used when constructing structures within water.

IX. PUBLIC COMMENTS

A summary of the public comments received to date is included in Attachment 31. Since the last Planning Commission meeting on the Shoreline Master Program update, the City has received eight written comment letters (see Attachments 32-39). Please note that many of the issues addressed in the letters from Mr. Douglas will need to be considered when the regulations addressing piers and docks are considered, later this year.

X. ATTACHMENTS

1. Proposed Work Program
2. Display Boards from Public Open House
3. Summary of Public Open House Comments
4. Survey Results
5. UW Study of Lake Washington Shoreline Permitting Process
6. Draft Outline of the new SMP Chapter
7. Proposed Shoreline Environment Designation Maps
8. Draft Environment Designations Report
9. Shoreline Environment Designations
10. Revised Policy Language
11. Shoreline Environments, Permitted Uses and Activities Chart
12. Definitions
13. Summary Table of Key Changes to Shoreline Uses
14. Critical Areas – General Standards
15. Wetland and Stream Regulations
16. Department of Ecology guidance on wetland regulations
17. Map depicting changes to wetland buffers
18. Geologically Hazardous Areas
19. Archaeological and Historic Resources
20. Flood Hazard Reduction
21. Public Access
22. Comparison of approaches to Shoreline Vegetation Conservation
23. Water Quality, Stormwater and Nonpoint Pollution
24. Washington Toxics Coalition on Information - herbicides in Lake Washington
25. View Corridors
26. Parking
27. Miscellaneous Standards
28. Lighting
29. Signage
30. In-Water Work
31. Table Summarizing Public Comments
32. Public Comment Letter from Dave Douglas dated June 20, 2008
33. Public Comment Letter from Charlotte Jordan dated May 21, 2008

34. Public Comment Letter from Doug Pascoe dated May 23, 2008
35. Public Comment Letter from Robert Style dated May 23, 2008
36. Public Comment Letter from Harold Forsen dated May 21, 2008
37. Public Comment Letter from Dave Douglas dated July 2, 2008
38. Public Comment Letter from Dave Douglas dated July 31, 2008
39. Public Comment Letter from Dave Douglas dated August 22, 2008
40. Guidance from Department of Ecology - Herbicides for control of aquatic vegetation

cc: File No. ZON06-00017, Sub-file #1

UPDATING KIRKLAND'S SHORELINE MASTER PROGRAM (SMP) Phases 3-6 Plan Preparation and Adoption June 9, 2008 Subject to Change			
Date¹	Meeting	Task	Consultant Present at Meeting
July 2008		Send draft Master Program policies to Ecology for review	
September 11, 2008	Planning Commission Study	<ul style="list-style-type: none"> • Revisions to Shoreline Environment Designations • Shoreline Use Table • General Regulations (public access, parking, storm water, critical areas, miscellaneous standards) • Scope out options for other general regulations (e.g. shoreline vegetation) 	Stacy Clauson and TWC
October 9, 2008	Planning Commission Study	<ul style="list-style-type: none"> • General Regulations (continued) • Regulations for shoreline uses • Scope out standards for shoreline modifications 	Stacy Clauson and TWC
November 24, 2008	Houghton Community Council Study	<ul style="list-style-type: none"> • Revisions to Shoreline Environment Designations • Shoreline Use Table • General Regulations (public access, parking, miscellaneous standards, critical areas, shoreline vegetation, storm water) 	Stacy Clauson and TWC
December 2008	Planning Commission Study	<ul style="list-style-type: none"> • Standards for shoreline modifications (continued) 	Stacy Clauson and TWC
December 2008	Houghton Community Council Study	<ul style="list-style-type: none"> • Regulations for shoreline uses • Standards for shoreline modifications 	Stacy Clauson and TWC
December 2008		Send draft Shoreline Environment Designations, Map Folio and Shoreline Regulations ² to DOE for review	
January 2009	City Council Check-In	Brief Council on draft SMP	City staff

¹ Assumes one meeting per month, to be scheduled based upon agenda of Planning Commission meetings

² Element of the City's Shoreline Master Program

February 2009	Planning Commission Study	<ul style="list-style-type: none"> • Shoreline Administration and Procedures • Restoration Plan and Implementation Strategy • Cumulative Impact Analysis • Revisit environment designations, policies and regulations if necessary 	Stacy Clauson and TWC
February 2009	Houghton Community Council	<ul style="list-style-type: none"> • Shoreline Administration and Procedures • Restoration Plan and Implementation Strategy • Cumulative Impact Analysis • Revisit environment designations, policies and regulations if necessary 	Stacy Clauson and TWC
February 2009		Staff sends draft Cumulative Impact Analysis ³ and Shoreline Restoration Plan ⁴ to DOE for review	
February/March 2009		Environmental review	City staff
March 2009	Public Workshop	Hold a public workshop prior to public hearings by PC and HCC	City staff
March 2009	Planning Commission Study	Planning Commission reviews remaining issues, addresses any feedback received from DOE based on reviews	Stacy Clauson and TWC
April 2009	Houghton Community Council Public Hearing	<ul style="list-style-type: none"> • HCC receives public comments • HCC directs changes to the drafts 	Stacy Clauson and TWC
April 2009	Planning Commission Public Hearing	<ul style="list-style-type: none"> • PC receives public comments • PC directs changes to the drafts 	Stacy Clauson and TWC
May 2009	Planning Commission Study	Planning Commission reviews remaining issues	Stacy Clauson and TWC
May 2009	Houghton Community Council	Draft Plan for final review Recommendation to City Council	Stacy Clauson and TWC
June 2009	Planning Commission Study	Draft Plan for final review Recommendation to City Council	Stacy Clauson and TWC

³ Element of the City's Shoreline Master Program

⁴ Element of the City's Shoreline Master Program

June - July 2009	City Council Study	City staff CC Study Sessions and local adoption of Draft SMP (Note: must notify DOE and CTED 60 days prior to adoption)
To be determined	Department of Ecology	State conducts another comment period on the SMP
TBD		State works with Kirkland to finalize SMP

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SHORELINE MASTER PROGRAM UPDATE

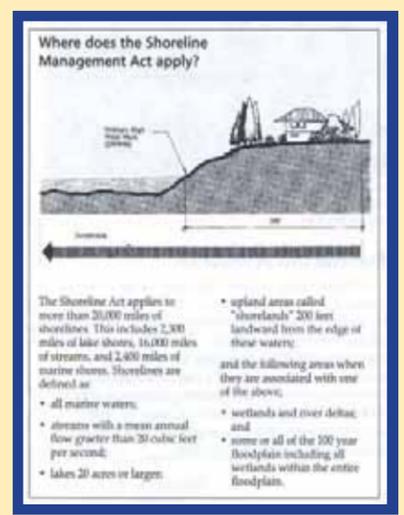


Key Concepts of the State's Shoreline Management Act

- Encourage water-dependent uses (e.g. marina)
- Protect shoreline natural resources
- Promote public access

Where Does the Shoreline Master Program Apply?

The Shoreline Master Program (SMP) applies to Lake Washington, land within 200 feet of Lake Washington's ordinary high water mark, and within wetlands connected to Juanita Bay and Yarrow Bay.



Source: Department of Ecology

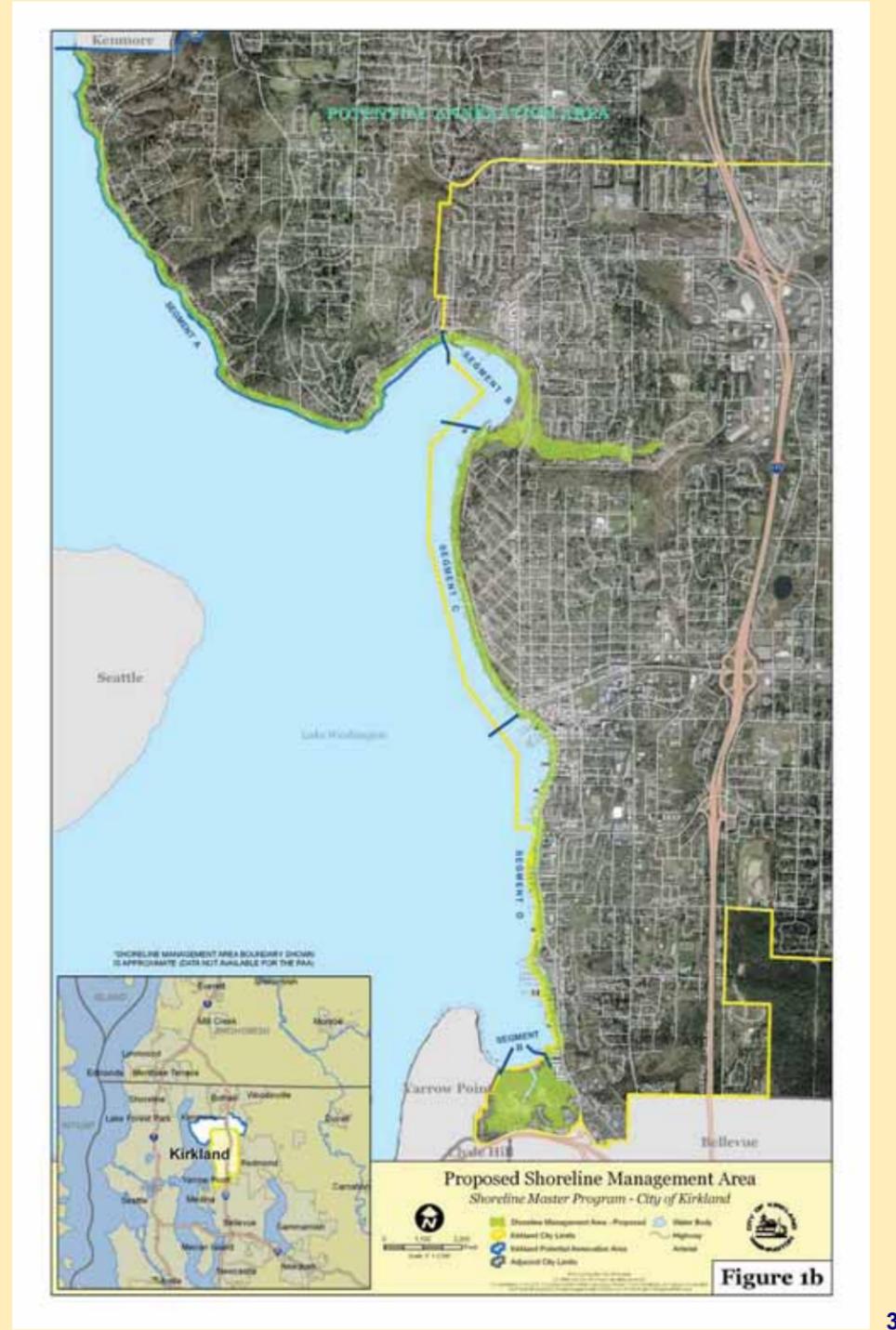


Figure 1b





SHORELINE ECOLOGICAL FUNCTION



Limiting habitat factors and impacts on Lake Washington

- 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 animal species;
- The known historic practices and discharges into Lake Washington have contributed to the 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.

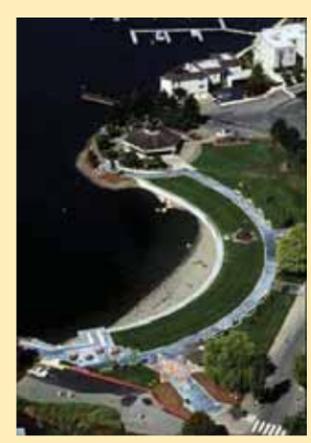
Source: Kervin, J. 2001. Salmon and steelhead habitat limiting factors report for the Cedar-Sammamish Basin (Water Resource Inventory Area 8.) Washington Conservation Commission. Olympia, WA



Segment B: Juanita Bay Wetlands

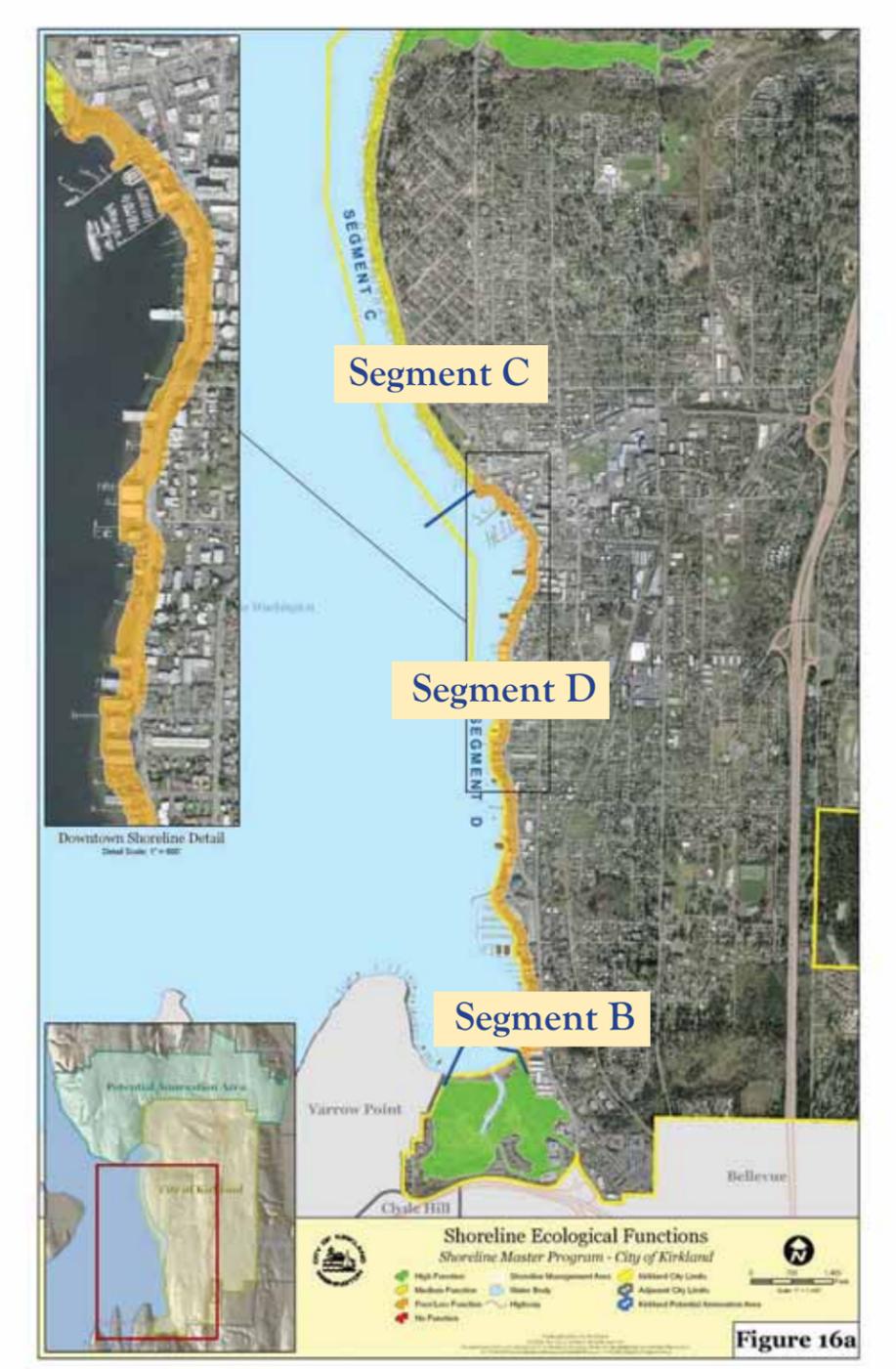


Segment C: Residential



Segment D: Marina Park

Kirkland Shoreline Ecological Function Scorecard		
Segment	Grade	Key Areas Needing Improvement
B Juanita Bay and Yarrow Bay Wetlands	High/Good	Improvements to fish passage and to mouth of Juanita Creek Improvements to overwater boardwalk at Juanita Beach Park Removal of invasive species
C Residential	Low/Poor	Improvements to nearshore vegetative cover Reduction or modification of shoreline armoring Reduction of overwater cover and in-water structures Reduction in impervious surface coverage
D Urban	Low/Poor	Improvements to nearshore vegetative cover Reduction or modification of shoreline armoring Reduction of overwater cover and in-water structures Reduction in impervious surface coverage





SHORELINE ARMORING



What is shoreline armoring:

- Shore erosion control practices using hardened structures that armor and stabilize the shore
- Examples: bulkheads, concrete walls, rip-rap

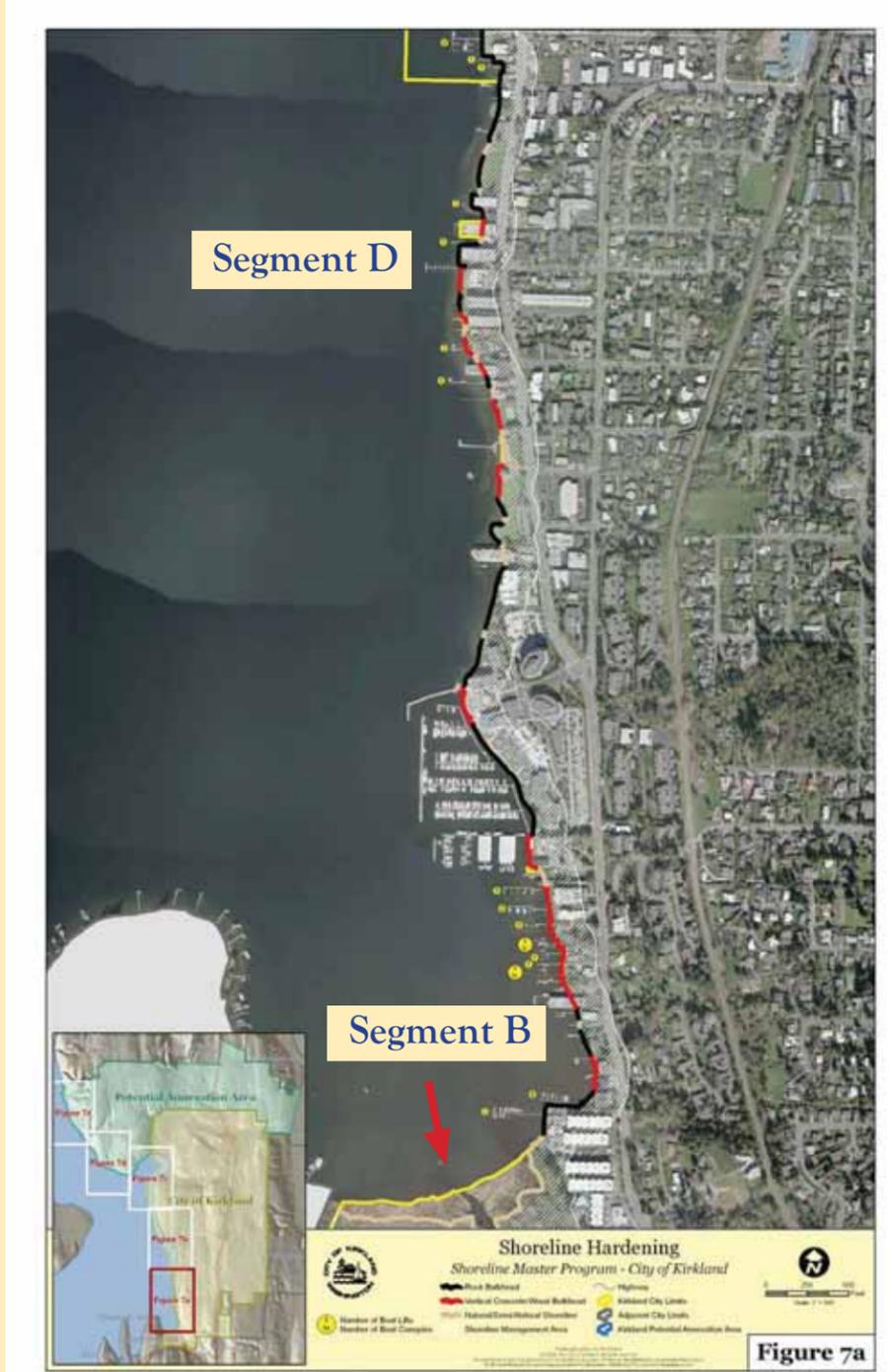
Segment	Lake Edge Condition (feet / % of segment)			Relative Ranking of Segment
	Vertical	Boulder	Natural / Semi-Natural	
B Juanita Bay and Yarrow Bay Park/ Wetlands	317 3%	461 4%	9,855 93%	High/Good
C Residential	4,919 53%	2,793 30%	1,652 18%	Low/Poor
D Urban	5,145 42%	5,831 48%	1,266 10%	Low/Poor
TOTAL (percent of total length)	10,381 32%	9,085 28%	12,773 40%	

Juvenile Chinook Salmon Habitat needs:

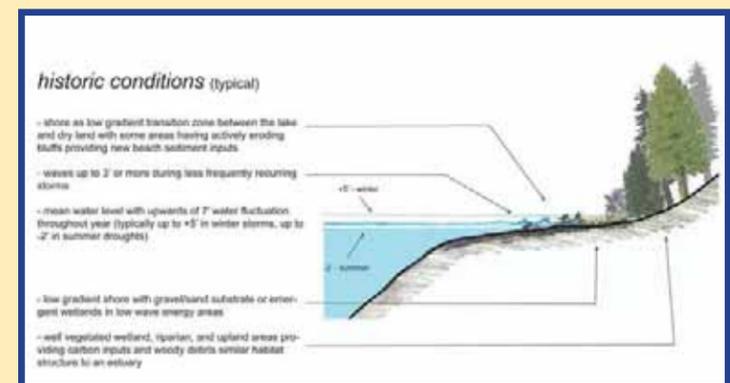
- Shoreline areas with shallow depths (<1m)
- Gentle slope
- Fine substrates such as sand and gravel
- Overhanging vegetation/small woody debris
- Small creeks: mouths and shallow, low-gradient upstream portions

Impacts of shoreline armoring:

- Reduces natural gravel recruitment from erosion
- Causes excessive erosion on neighboring unarmored properties
- Can increase water depth by transporting nearshore sediment to deeper water and produces “wave bashing” effect - very turbulent nearshore
- Decreases habitat complexity
- Increases predator habitat (bass, sculpin)

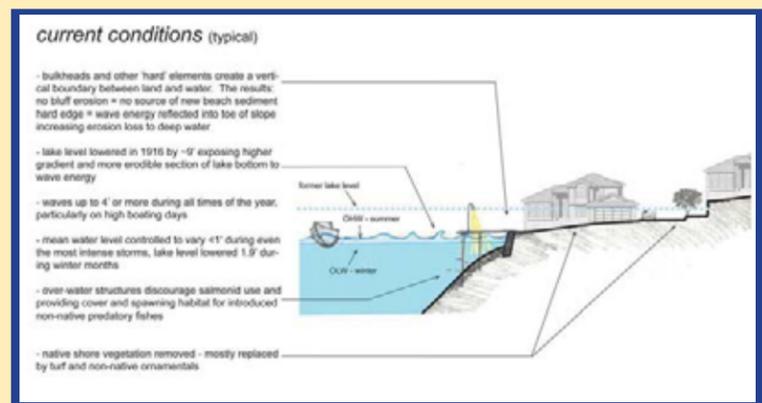


Historical Shoreline



Graphic by Zach Thomas, University of Washington

Current Shoreline



Graphic by Zach Thomas, University of Washington



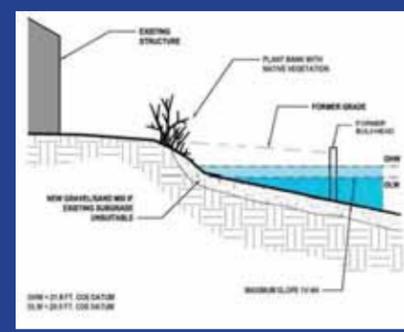


ALTERNATIVES TO SHORELINE ARMORING

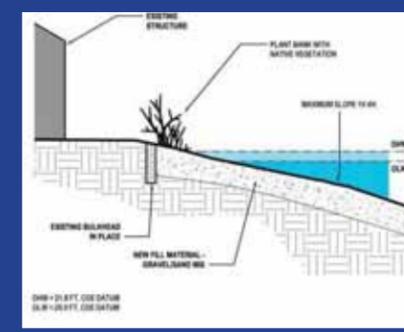


These are recommendations developed by the Army Corps of Engineers and the National Marine Fisheries Service (NMFS) to provide for shoreline stabilization that will meet Endangered Species Act requirements under an Army Corps of Engineers Nationwide Permit. Other options require individual review and a project-specific assessment prepared by the applicant.

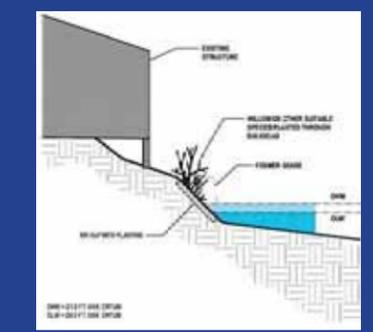
Alternative 1:
Cut Beach, Place Gravel Fill and Re-vegetate



Alternative 2:
Gravel Fill Beach and Re-vegetate



Alternative 3:
Re-vegetate Armored Banks (only for bulkheads within 25 feet of residence)



Example of Shoreline Alternative Design in Bellevue, WA

Restoration Plan for Bellevue residence



Designed by The Watershed Company

Before



After





OVERWATER COVER



Segment	Overwater Coverage		Relative Ranking of Segment
	Overwater Cover/Lineal Foot of Shoreline	# of Overwater Structures/Mile	
B Juanita Bay and Yarrow Bay Park/Wetlands	1.55 ft ²	2.5	High/Good
C Residential	8.93 ft ²	51.9	Low/Poor
D Urban	24.13 ft ²	27.2	Low/Poor
TOTAL	12.3 ft²	26.2	

How do overwater structures such as piers affect the shoreline habitat?

- Impact the nearshore aquatic habitat, blocking sunlight and creating large areas of overhead cover.
- Shade the lake bottom and inhibit the growth of aquatic vegetation.
- Benefit non-native predators (like largemouth and smallmouth bass).
- Reduce the amount of complex aquatic habitat formerly available to salmonids rearing and migrating through Lake Washington. This can impact juvenile salmonids, in particular, due to their affinity to nearshore, shallow-water habitats.

Techniques to minimize impacts of overwater structures:

- Shared use of piers.
- Reducing or eliminating the number of boathouses and solid moorage covers (e.g. use of clear, translucent materials proven to allow light transmission for new canopies).
- Minimizing the size and widths of piers and floats.
- Increasing light transmission through any over-water structures (e.g. use of grated decking).
- Maximizing the height of piers above the water surface.
- Reducing the overall number and size of pier piles.
- Improving the quality of stormwater runoff.





SHORELINE VEGETATION



Benefits of Shoreline Vegetation

- Providing organic inputs critical for aquatic life
- Providing food in the form of various insects and other detritus that feeds benthic macroinvertebrates
- Stabilizing banks, minimizing erosion, and reducing the occurrence of landslides
- Filtering and vegetative uptake of nutrients and pollutants from ground water and surface runoff
- Providing a source of large woody debris into the aquatic system
- Providing shade necessary to maintain the cool temperatures required by salmonids and other aquatic biota



Examples of Shoreline Vegetation



The Watershed Company



Berger Partnership

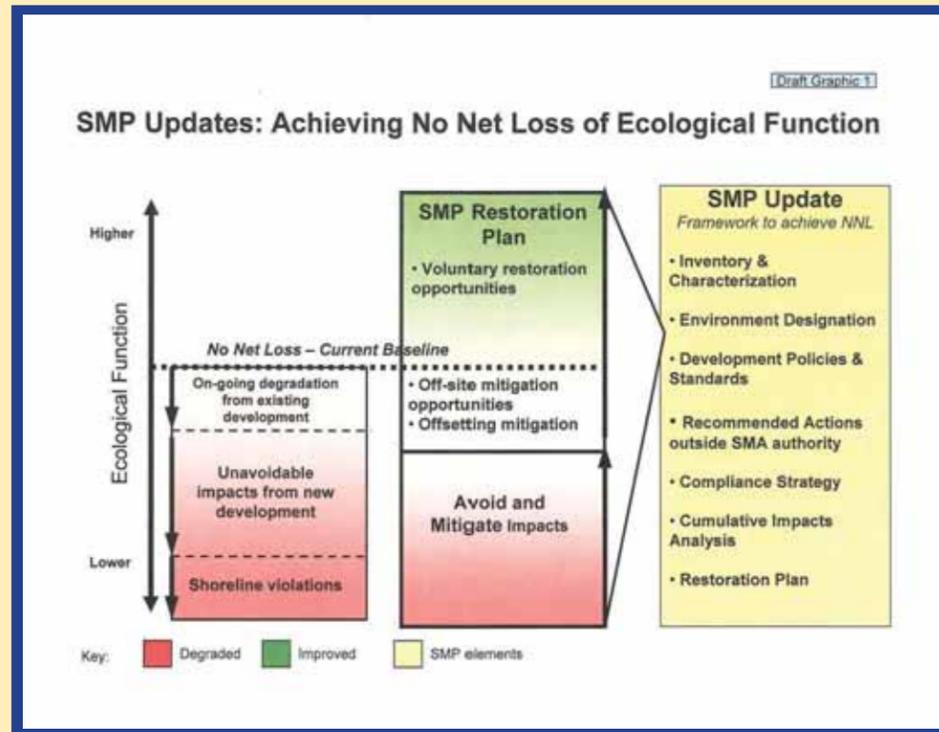


Waterfront Construction





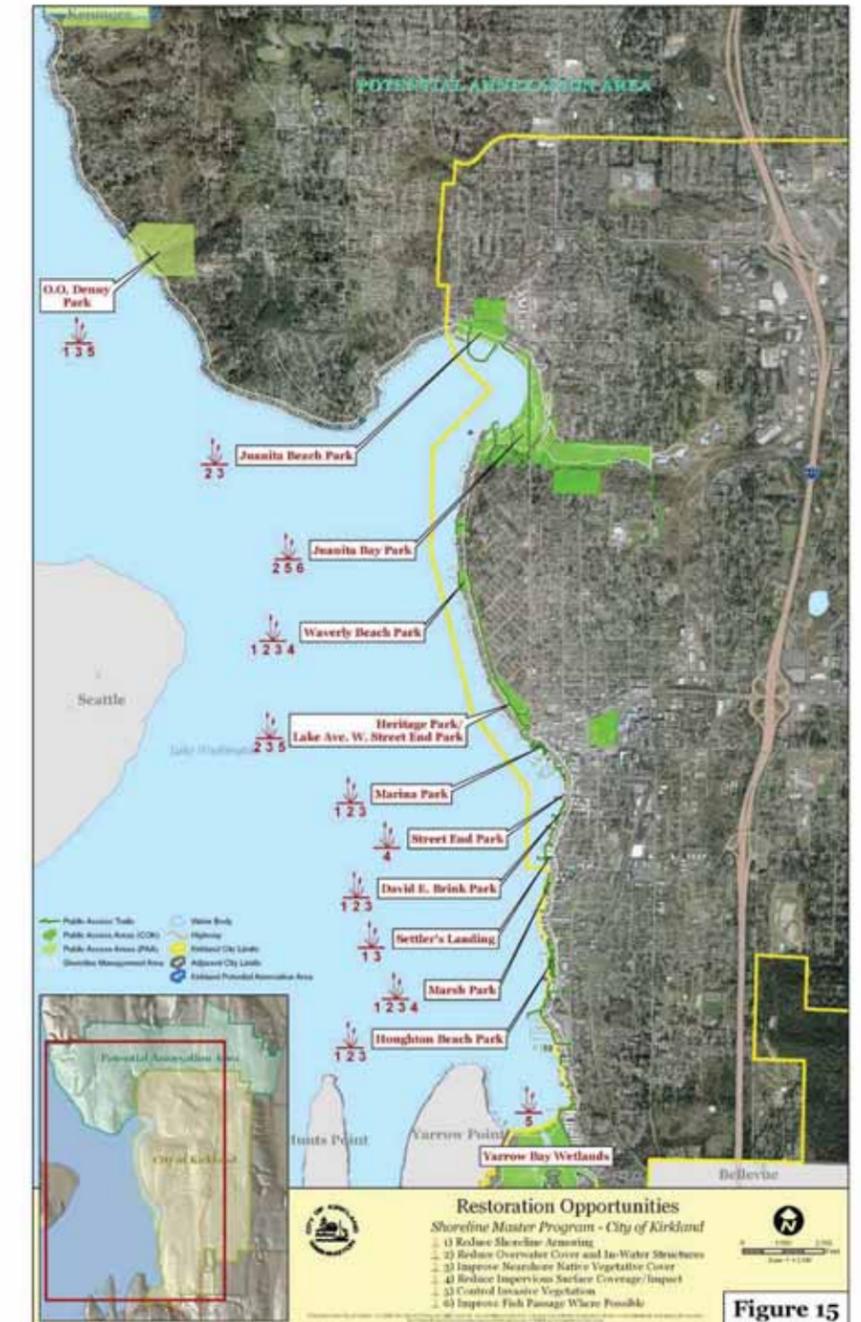
NO NET LOSS AND RESTORATION OPPORTUNITIES



Source: Department of Ecology

No Net Loss: The Shoreline Master Program should preserve the public’s opportunity to enjoy the physical and aesthetic qualities of shorelines of the state and protect the functions of shorelines so that, at a minimum, the City achieves a ‘no net loss’ of ecological functions, as evaluated under the *Final Shoreline Analysis Report* issued in December 2006.

Restoration: The Program should also promote restoration of ecological functions where such functions are found to have been impaired, enabling functions to improve over time.



CITY OF KIRKLAND DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
Updating the Shoreline Master Program

OPEN HOUSE

Monday, June 9th, 2008, 6:30 to 8:30 p.m.

SUMMARY
OF KEY THEMES, ISSUES AND CITIZENS' SUGGESTIONS

GOALS

These were the primary goals of the Open House sponsored by Kirkland's Department of Planning and Community Development:

- 1) Provide broad notice to property owners and other interested citizens of the City's Shoreline Master Program and opportunities available to engage in the process;
- 2) For participants to advise the City on what issues are of greatest interest and concern to them and, therefore, should be included in the update;
- 3) Identify the future vision of the waterfront in 25 years; and
- 4) For participants to prioritize key tools that the City should use in implementing the updated Shoreline Master Program.

WHO ATTENDED THE OPEN HOUSE?

In total 31 participants attended the Open House. Most participants identified themselves as waterfront property owners. Other attendees included Planning Commission members, and representatives from the local Audubon Society, a local waterfront construction contractor, and Washington Department of Natural Resources. Mayor Jim Lauinger opened the meeting.

THE AGENDA

To understand the process used at the open house, please see the agenda that is attached at the back of this document.

ISSUES TO ADDRESS IN THE SMP UPDATE

1. WHAT DO STAKEHOLDERS LIKE BEST ABOUT THE WATERFRONT NOW?

The participants who attended the open house said that they most value these qualities and characteristics of Kirkland's Lake Washington waterfront (there was no effort made to achieve consensus on these):

1. Natural areas
 - a. Juanita and Yarrow Bays
 - b. Vegetation & wildlife
 - c. A natural "getaway" in an otherwise urban environment
2. Abundant public access points
3. Educational programs at Juanita Bay Park
4. Swimming
5. Water quality
6. Marina & Marina Park
7. Mixed-use
8. Walkability (public walkways along waterways)
9. Property rights protection
10. Use and planning of Juanita Beach Park- diversity of people using park

2. WHAT CONCERNS DO STAKEHOLDERS HAVE ABOUT KIRKLAND'S WATERFRONT NOW?

The participants who attended the Open House said that they have the most concerns about the following characteristics or management of Kirkland's Lake Washington waterfront (there was no effort made to achieve consensus on these):

1. Water quality
2. Salmon habitat viability
3. Funding
 - a. Tax for Juanita Beach Park improvements
 - b. Desire for user fees (for non-residents who use Kirkland's parks)
 - c. Use money for land acquisition, not just programs or facilities
4. Naturalize waterfront
 - a. Remove bulkheads
 - b. Establish gravel waterfront w/ vegetation
5. Public access (acquiring new access points and preserving existing ones)
6. Need for clear definition of property rights
7. Increasing city ownership along waterfront
8. Non-native and invasive plant and wildlife species
9. Distance of motorcraft from shore (need no wake zones)
10. Increasing public information about distinction between parks and open space natural areas to prevent misunderstanding that Juanita Bay might be an active park
11. Wetland, stream, and stormwater runoff quality (draining to Lake Washington)

3. WHAT DO STAKERHOLDERS ENVISION THE SHORELINE TO BE IN 25 YEARS, IF THE CITY HAS BEEN SUCCESSFUL IN MANAGING KIRKLAND'S SHORELINES?

The participants who attended the Open House said in their future, the Kirkland shoreline has the following qualities and characteristics (there was no effort made to achieve consensus on these):

1. Wildlife conditions improved
 - a. bird, aquatic life, and other wildlife diversity increased
 - b. Resilient elodea
2. Milfoil controlled

3. More trees, in particular replacement of those lost to storms
4. Juanita Beach Park improved
5. Better access
6. Safer/healthier waterfront conditions
 - a. Safe to swim
 - b. Safe to eat fish
 - c. Marine patrol to monitor boat speed
7. Pollution controlled
 - a. Trash from boaters and/or waterfront property owners decreased
 - b. Polluted stormwater runoff decreased
8. More City-owned waterfront parks
9. More handicapped accessibility
10. "Lid" (cover) on the Marina Park parking lot, with additional public amenities on the lid
11. Enhanced security at City parks (decreased vandalism, esp. along public access)
12. Overall improved water quality
13. Moorage for public at Marina Park
14. In Juanita Bay in particular, improved water quality, reduced garbage, and prohibition on jetskis/boats which disturb area wildlife with noise
15. Better signage (boats required to stay "x" feet from shoreline, speed limits)
16. Balance between property owner benefits and public benefits
17. Sewer hook-ups (for properties draining to Lake Washington)
18. Ferry service
19. More green space

4. WHAT TOOLS SHOULD THE CITY USE TO HELP APPROPRIATELY MANAGE EXISTING AND FUTURE SHORELINE DEVELOPMENT?

Participants were provided three (3) stickers and asked to place one at each of the management tools they feel the City should focus its attention. This exercise provided a prioritization of the tools, which are listed below:

1. Installing capital improvements on City-owned property such as retrofitting bulkheads at city parks (19 stickers)
2. Providing incentives to property owners who enhance shoreline areas such as expedited permit review and reduced fees (15)
3. Allowing flexibility in development standards such as reduced setbacks (14)
4. Acquiring City-owned property along the shoreline (12)
5. Adopting regulations such as requiring vegetation management for new home or pier construction (7)
6. Providing more information on shoreline protection (N/A - not listed as option)

Citizens also identified these additional ideas:

- Protecting property rights rather than eroding them (12 stickers)
- Giving environmental protection priority over recreation or property ownership (1)
- Keeping a tough standard on setbacks, not allowing flexibility (1)

WHAT OTHER ISSUES WERE IDENTIFIED OUTSIDE THE SCOPE OF THE FACILITATED DISCUSSION?

Issues that participants expressed during the facilitated discussion that were not within the scope of the conversation were recorded and listed below:

7. Storm water runoff reduction- from streets and properties uphill from lake
8. Pedestrian safety/ traffic congestion reduction along Lake Washington Boulevard
9. Increased marine patrol (police patrol boat(s))
10. Noise issues (specifically regarding personal watercraft operating in Juanita Bay) noise carries up hill and can be heard a distance from the lakefront.
11. Septic issue: wanting septic systems to be shut down and convert/tie in to wastewater system; especially concerning the contamination of Juanita Creek from upstream properties on septic
12. User fees for non-Kirkland residents to use city parks



Community Open House Monday, June 9th

Agenda

6:30 – 7:30 PM – OPEN HOUSE

Please sign-in, review background information and display boards, ask questions of available staff, meet other attendees, complete a survey, and enjoy a refreshment or snack.

I. WELCOME, INTRODUCTIONS – 6:45 PM

Mayor Lauinger

II. OVERVIEW MEETING FORMAT AND GOALS – 7:00 PM

Marie Stake, Communications Manager

7:30 – 8:30 PM – VISIONING EXERCISE

Marie Stake, Communications Manager

III. What do you like best about the waterfront now?

IV. Imagine that it is the year 2033 (25 years from now). How will we know if we've been successful in managing Kirkland's shorelines?

V. What concerns you most about Kirkland's waterfront now?

VI. What tools should the City use to help appropriately manage existing and future shoreline development?

VII. Summarize key themes from tonight's meeting.

8:30 PM – ADJOURN

Thank you for participating! Please continue to stay involved.



CITY OF KIRKLAND DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

**Updating the Shoreline Master Program
COMMUNITY SURVEY**

**SUMMARY OF KEY THEMES, ISSUES AND CITIZENS' SUGGESTIONS
July 2008**

INTRODUCTION

The City of Kirkland completed this survey to assess citizens' thoughts and opinions about the quality of and vision and priorities for Kirkland's shorelines. Specifically, the following subjects were addressed:

- Respondents' general sense of Kirkland's shorelines, including the best and least desirable aspects.
- The importance of protection of shoreline ecological functions, public access, and priorities for the future.
- Respondents' priorities for different regulatory and incentive approaches to addressing future development along the shoreline.
- Respondents' reaction to different activities to facilitate restoration along the shoreline.

This report begins with an overview of key findings. These are followed by a summary of the questionnaire and the results in charts.

METHODS

PARTICIPATION: 59 respondents. Many of the respondents did not answer every question. Three out of the 59 surveys were left completely blank except for the comments section and contact information. Those 3 surveys are not included in the tallies, so each table/chart reflects the answers from the 56 completed surveys.

RESPONDENT PROFILE: 13 of the 59 respondents identified themselves as owning property along Kirkland's waterfront. In order to draw comparisons between shoreline property-owners and non-shoreline property owners, the answers from the waterfront property owners are sometimes shown beneath the totals.

TECHNIQUE: Web-survey and survey distributed to participants in June 9, 2008 Open House

DATES: June 9 – July 11, 2008

OPEN-ENDED ITEMS A number of the questions were open-ended, allowing the respondent to express answers in his/her own words. Responses to open-ended questions were summarized, then categorized and coded for analysis.

NOTE: Participation in this survey was voluntary. The survey is not intended to represent a scientifically accurate sampling of the citizens of Kirkland. These results can be interpreted only as representing the answers given by these respondents to these questions.

KEY FINDINGS

1. Differences in perceptions were identified between property owners and other respondents.
 - In general, property owners were, as a group:
 1. Less concerned about protection of ecological functions.
 2. Expressed a desire for site planning regulations, such as setbacks or lot coverage, to stay the same or become more flexible.
 3. Unsupportive of new standards for pier size, shoreline vegetation and maintenance, and bulkheads.
 4. More willing to consider flexible standards for owners who accommodate enhancement.
2. Public access was rated as a top desirable aspect of Kirkland's waterfront.
 - 85% identified public access (36%), Public Parks (26%) or walk ability (22%) as what they like best about Kirkland's waterfront
3. Respondent's concerns are mainly about growth and overdevelopment along Kirkland's shorelines.
 - 31% identified overdevelopment as a concern along Kirkland's shoreline
4. Over half of all respondents identify protection of shoreline ecological functions (57%) and providing public access (64%) as very important goals.
5. Respondent's rated the protection of functioning habitats as the top priority for Kirkland to focus its attention on for its waterfront, followed by preventing stormwater runoff and restoring degraded habitats.
6. There was strong lack of support (64%) expressed for establishing any water-based aircraft facilities within Kirkland's waterfront commercial business districts.
7. Over half of respondents indicated that standards should become more restrictive on structure placement along the shoreline (e.g. setback further from the water's edge and designed to cover less area on a lot).
8. Over 67% of respondents indicated that the City should provide standards for new or renovated piers that would minimize impacts to aquatic habitat. Asked to respond to different approaches, there was generally strong support expressed for the options presented, which included:
 - Requiring new piers or additions to incorporate design features that accommodate salmon and other aquatic species (79% of respondents indicated standards are needed).

- Requiring replacement piers to incorporate design features that accommodate salmon and other aquatic species (74% of respondents indicated standards are needed).
 - Encouraging the construction of fewer piers (66% of respondents indicated standards are needed).
9. Over 76% of respondents indicated that the City should provide standards for shoreline vegetation and maintenance. Asked to respond to different approaches, there was generally strong support for the options presented, which included:
- Restrict the use of herbicides and other maintenance practices that may be harmful to the environment (84% of respondents indicated standards are needed).
 - Encouraging the use of native plantings and limitations on herbicide use through the use of incentives, technical assistance and resource and education materials (74% of respondents indicated standards are needed).
 - Require native plantings along the shoreline edge and limit extensive areas of lawn in the area adjacent to the lake (58% of respondents who indicated standards are needed)
10. Over 65% of respondents indicated that the City should provide standards for bulkheads and other hard armoring. Asked to respond to different approaches, there was strong support for the following two options presented:
- Prohibit the establishment of new bulkheads of other hard armoring, unless necessity is demonstrated and alternative methods are demonstrated to not be feasible or sufficient (76% of respondents indicated standards are needed).
 - Require new development of substantial remodel of existing development to remove existing bulkheads and replace these structures with a suitable shoreline stabilization solution involving native vegetation, logs, and beach reestablishment (62% of respondents indicated standards are needed).

There was less support expressed for allowing existing bulkheads to remain with new construction and more support to require enhancement of the shoreline with vegetation or other measures (46% of respondents indicated standards are needed).

11. In evaluating different activities that the City could pursue to facilitate habitat restoration activities, there was greatest support for the following:
- Restoration activities in parks (80%)
 - Technical assistance for owners who accommodate enhancement (64%)
 - Grants for large restoration projects (57%)
 - Incentives for owners who initiate enhancement (52%)
 - Reduction/waiver of fees for owners who initiate restoration or preservation (52%)

The respondents were fairly split between those that supported (38%) and those that opposed (30%) the use of flexible standards for owners who accommodate enhancement.

SUMMARY OF RESULTS

1. What do you like best about Kirkland's waterfront?

53 respondents provided 30 unique responses to this question.

The top 10 responses were:

- Public access – 19 respondents
- Parks – 14
- Walkability – 12
- Open space – 8
- Views – 7
- Beaches – 4
- Wildlife – 3
- Marina – 3
- Beauty/Aesthetics – 3
- Limited/Low Development – 3

The other responses were:

- Shoreline – 2 respondents
- Charm/quaintness – 2
- Grass – 2
- Natural areas – 2
- Quiet/peacefulness – 2
- Water – 2
- Swimming - 1
- Property-owner rights - 1
- Safety - 1
- Livability - 1
- Juanita Bay - 1
- Juanita Beach - 1
- Recreation opportunities - 1
- Canoeing - 1
- Restrooms - 1
- Kid-friendliness - 1
- Downtown - 1
- Restoration efforts - 1
- Acquisition of public land - 1
- Handicapped Accessibility - 1

2. When you think about Kirkland's shorelines, what concerns you the most?

49 respondents provided 33 unique responses to this question. The top 10 responses were:

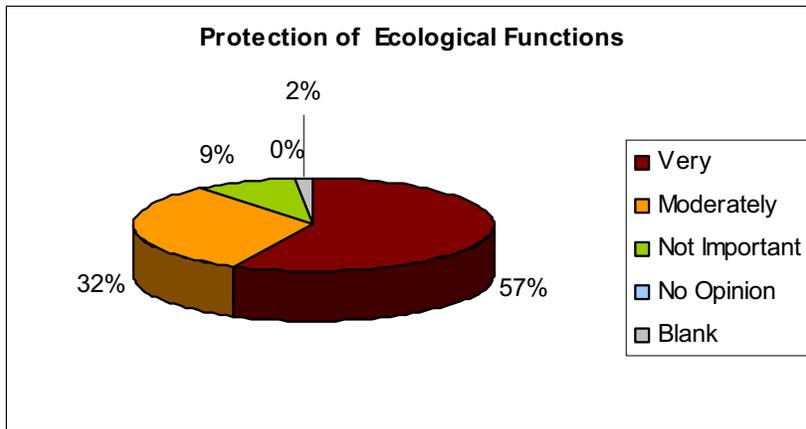
- Overdevelopment – 15 respondents
- Pollution/runoff – 7
- Artificial shoreline/bulkheads – 7
- Loss of public access- 7
- Water quality – 4
- Shoreline degradation/erosion – 4
- Noise – 4
- Animal waste – 3
- Business/commercial interests – 3
- Parking – 3

The other responses were):

- Health – 2
- Congestion/overcrowding – 2
- Loss of walkability – 2
- Traffic – 2
- Restoration - 1
- No wake zone - 1
- Quality of public areas - 1
- Fertilizers - 1
- Environmental quality - 1
- Juanita Beach - 1
- Juanita Bay - 1
- Dock conditions - 1
- Dogs - 1
- Misuse of private space - 1
- Preserving open space - 1
- Homeowner rights - 1
- Battle between waterfront-owners and non-waterfront owners - 1
- Loss of natural habitat - 1
- Dangerous pedestrian crossings - 1
- Invasive species - 1
- Wildlife population - 1
- Human impact - 1
- Wetlands - 1

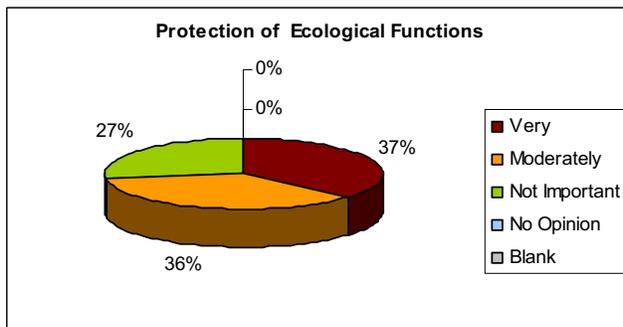
3. Protection of shoreline ecological functions (i.e. habitat for fish and wildlife, attenuation of wave energy, filtering excessive nutrients or sediments and bank stabilization) is a goal of the Shoreline Management Act. How important is this to you?

Very	Moderately	Not Important	No Opinion	Blank
32	18	5	0	1



Waterfront Property Owners' responses:

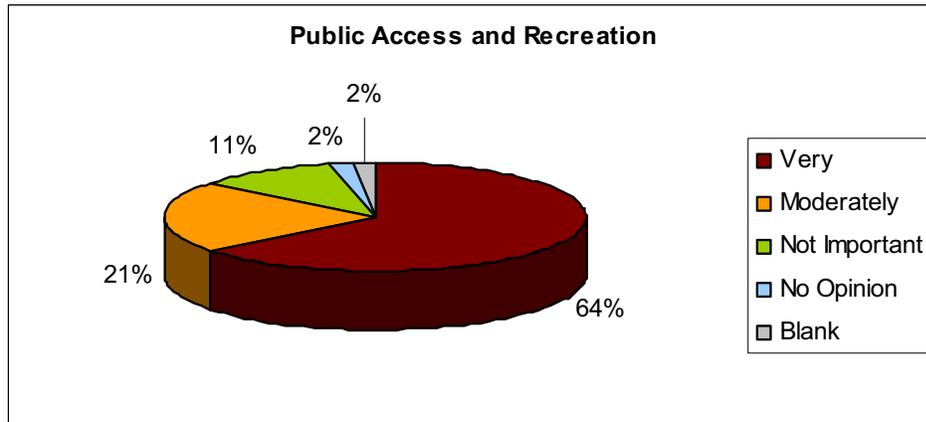
Very	Moderately	Not Important	No Opinion	Blank
4	4	3	0	0



4. Providing public access to the water and enhancing recreation is a goal of the Shoreline Management Act. How important is this to you?

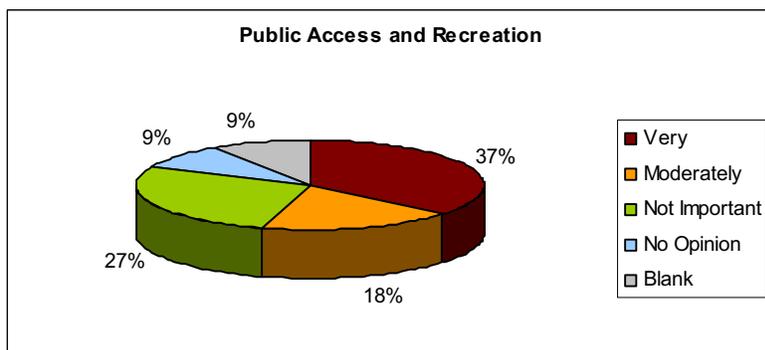
Very	Moderately	Not Important	No Opinion	Blank
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36	12	6	1	1
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Waterfront Property Owners' responses:

Very	Moderately	Not Important	No Opinion	Blank
4	2	3	1	1



5. Please tell us what areas Kirkland should focus its attention on for its waterfront. Rate the following choices as your highest priority (1) to lowest priority (6).

Score	1s	2s	3s	4s	5s	6s	Blank	Average
Public Access	14	6	5	6	17	6	2	3.4
Waterfront-dependent uses	5	8	1	8	12	21	1	4.4
Protect Functioning Habitats	25	13	6	8	0	2	2	2.1
Restore Degraded Habitats	5	14	18	6	5	6	2	3.2
Prevent Stormwater	8	15	15	10	4	3	1	2.9

Runoff									
Education and Incentives	3	2	7	13	10	20	1	4.5	

Overall Rankings:

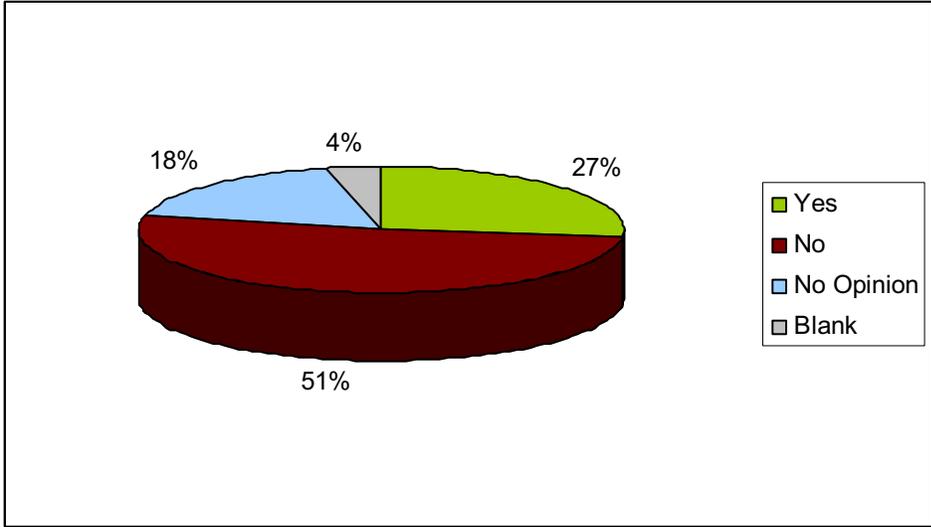
	Rank	Average
Protect Functioning Habitats	1	2.1
Prevent Stormwater Runoff	2	2.9
Restore Degraded Habitats	3	3.2
Public Access	4	3.4
Waterfront-dependent uses	5	4.4
Education and Incentives	6	4.5

Waterfront Property Owners Rankings:

	Rank	Average
Prevent Stormwater Runoff	1	2.3
Protect Functioning Habitats	2	2.4
Waterfront-dependent uses	3	3.1
Restore Degraded Habitats	4	3.2
Education and Incentives	5	4
Public Access	6	4.2

6. Are there types of businesses or services that you would like to see, which do not currently occur along the City's waterfront?

Yes	No	No Opinion	Blank
15	29	10	2



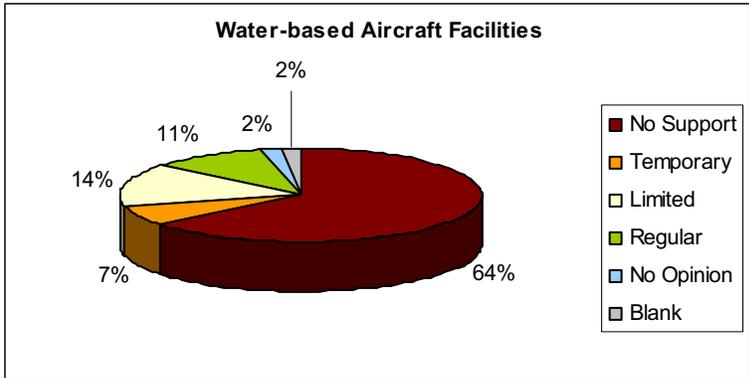
7. If YES, what uses and why are those needed?

The 15 affirmative responses provided a total of 10 unique answers:

- Boat rental – 4 respondents
- Food/restaurants – 4
- Marina services – 3
- Recreational services – 2
- Float planes
- Bookstore
- Movie theatre
- Dog park
- Water taxi
- Nature center

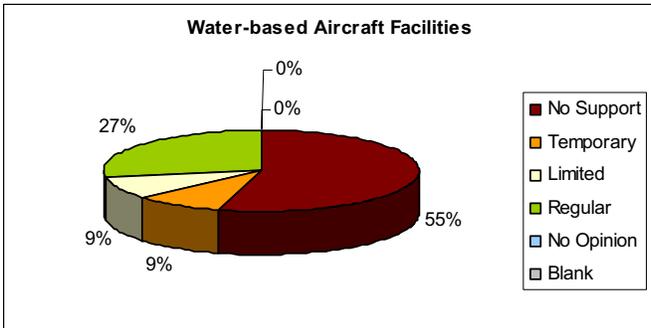
8. Kirkland's waterfront business districts, such as Downtown or Carillon Point, are active community areas. As a result, the City anticipates that there may be future interest in establishing water-based aircraft facilities (e.g. floatplane operations) within these waterfront commercial districts. Which of the following best represents your opinion?

No Support	Support temporary moorage for personal use	Support limited facilities for air charter operations	Support regularly scheduled commercial flights	No Opinion	Blank
36	4	8	6	1	1



Waterfront Property Owners' responses:

No Support	Support temporary moorage for personal use	Support limited facilities for air charter operations	Support regularly scheduled commercial flights	No Opinion	Blank
6	1	1	3	0	0



9. **What natural features (such as streams, wetlands, forests) of Kirkland's shorelines should be protected and/or restored?**

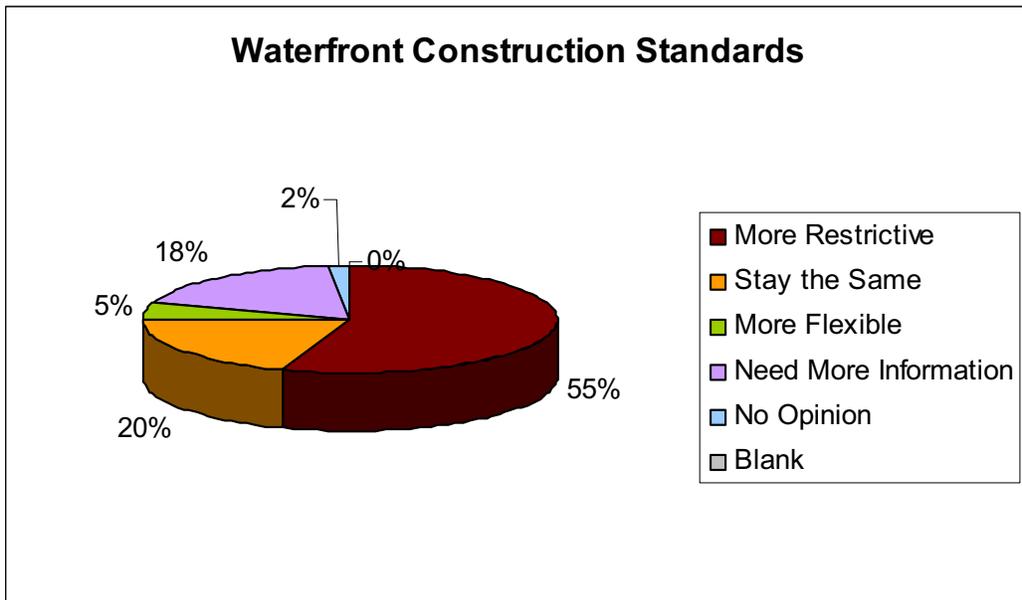
42 respondents to this question provided 17 unique answers to this question:

- All/as many as possible – 18 respondents
- Streams – 9
- Wetlands – 7
- Forests – 5
- Juanita Bay – 4
- Wildlife habitats – 3
- Shoreline – 2

- Brush
- Aquatic life
- Watersheds
- Parks
- Juanita Creek
- Juanita Beach
- Native plants
- Trees
- Beaches

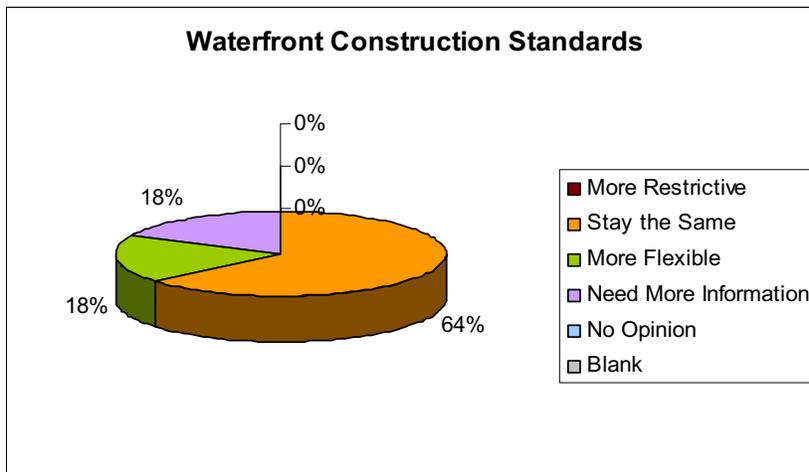
10. Along the shoreline area, Shoreline Master Program regulations address issues such as how close structures can be to the water's edge, lot coverage, open space and the separation between structures. In your opinion, should the rules governing construction along the waterfront be changed? (Please choose one response).

Standards should be more restrictive (e.g. set back farther from the water's edge and other structures on adjacent lots, and designed to cover less area on a lot)	Stay the Same	Allow for more Flexibility (e.g. locate closer to the water's edge and other structures on adjacent lots, and increase the area allowed to be covered on a lot)	Need More Information	No Opinion	Blank
31	11	3	10	1	0



Waterfront Property Owners' responses:

Standards should be more restrictive (e.g. set back farther from the water's edge and other structures on adjacent lots, and designed to cover less area on a lot)		Allow for more Flexibility (e.g. locate closer to the water's edge and other structures on adjacent lots, and increase the area allowed to be covered on a lot)			
	Stay the Same		Need More Information	No Opinion	Blank
0	7	2	2	0	0



11. Large piers have the potential to impact the nearshore aquatic habitat, by blocking sunlight and creating large areas of overhead cover which shade the lake bottom and inhibit the growth of aquatic vegetation. These changes in the nearshore habitat have been identified as posing potential adverse impacts to juvenile salmon that rear in and migrate through Lake Washington.

Do you think the City should provide standards for new or renovated piers in response to this issue, consistent with state and federal guidance?

Yes	No	Need More Information	No Opinion	Blank
38	10	7	1	0

Waterfront Property Owners' responses:

Yes	No	Need More Information	No Opinion	Blank
2	8	1	0	0

12. If you answered "Yes" above, which of the following standards would you recommend (Check any that apply):

Provide Standards on Pier Size and Cover	
Standards should encourage the construction of fewer piers (i.e. shared use of piers).	25
Standards should require new piers or additions to piers to incorporate design features that accommodate salmon and other aquatic species (i.e. minimizing the size and widths of piers and floats, increasing light transmission through over-water structures)	30
Standards should require replacement piers to incorporate design features that accommodate salmon and other aquatic species (i.e. minimizing the size and widths of piers and floats, increasing light transmission through any over-water structures)	28

13. Native or other appropriate vegetation on the shoreline has a number of benefits to lakes and lake associated wildlife, including water quality (sediment and pollution removal), bank stabilization, shade and temperature moderation, fish and wildlife habitat, and productivity (food sources such as insects and smaller organic debris). Do you think the City should provide standards for shoreline vegetation and maintenance?

Yes	No	Need More Information	No Opinion	Blank
43	7	5	0	1

Waterfront Property Owners' responses:

Yes	No	Need More Information	No Opinion	Blank
3	6	1	0	1

14. If you answered "Yes" above, which of the following standards would you recommend (Check any that apply):

Provide Standards on Shoreline Vegetation and Maintenance		
Standards should require native or other appropriate plantings along the shoreline edge and limit extensive areas of lawn in the area adjacent to the lake with new development or substantial remodel of existing development.		25
Standards should restrict the use of herbicides and other maintenance practices that may be harmful to the shoreline environment.		36
Standards should encourage the use of native plantings and limitations on herbicide use through the use of incentives, technical assistance and resource and education materials.		32

15. **Bulkheads and other hard armoring of the shoreline have been shown to have a variety of negative impacts on natural processes including increased erosion of other properties, reduced vegetation and aquatic habitat function, and introduction of habitat for non-native predator species. Do you think the City should provide standards for bulkheads and hard armoring in response to this issue?**

Yes	No	Need More Information	No Opinion	Blank
37	7	11	0	1

Waterfront Property Owners' responses:

Yes	No	Need More Information	No Opinion	Blank
2	5	3	0	1

16. **If you answered "Yes" above, which of the following standards would you recommend (Check any that apply):**

Provide Standards on Bulkheads and Hard Armoring		
Standards should prohibit the establishment of new bulkheads or other hard armoring, unless necessity is demonstrated and alternative methods are demonstrated to be not feasible or not sufficient		28
Standards should require new development or substantial remodel of existing development to remove existing bulkheads and replace these structures with a suitable shoreline stabilization solution involving native vegetation, logs and beach re-establishment		23
Standards should allow existing bulkheads to remain with new construction, but require enhancement of the shoreline with vegetation or other measures.		17

Comparison between proposed standards:

	Yes	No	Need More Information	No Opinion	Blank
Provide Standards on Pier Size and Cover	38	10	7	1	0
Provide Standards on Shoreline Vegetation and Maintenance	43	7	5	0	1
Provide Standards on Bulkheads and Hard Armoring	37	7	11	0	1

Waterfront Property Owners' responses:

	Yes	No	Need More Information	No Opinion	Blank
Provide Standards on Pier Size and Cover	2	8	1	0	0
Provide Standards on Shoreline Vegetation and Maintenance	3	6	1	0	1
Provide Standards on Bulkheads and Hard Armoring	2	5	3	0	1

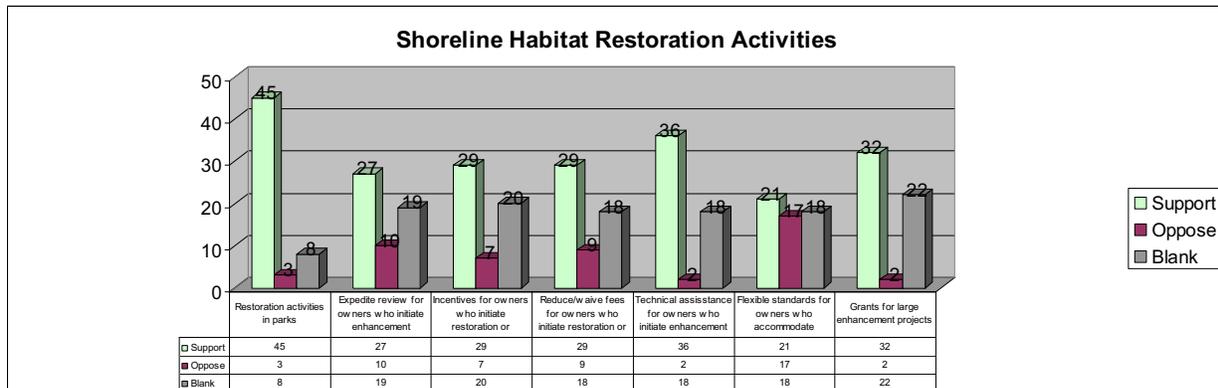
17. To facilitate shoreline habitat restoration activities, which of the following would you SUPPORT/OPPOSE the City to explore?

Activity	Support	Oppose	Blank
Undertake restoration activities in existing parks (i.e. reduce bank hardening, install overhanging riparian vegetation, replace bulkheads with sand beaches and gentle slopes, and minimize overwater coverage)	45	3	8
Provide a reduced review time/expedited review for shoreline property owners who initiate enhancement projects on their property	27	10	19
Provide financial incentives (e.g. participation in a Public Benefit Rating System that could reduce land assessments) for shoreline property owners who initiate restoration projects or preserve a natural shoreline on their property.	29	7	20
Reduce or waive fees for shoreline property owners who initiate enhancement projects on their property	29	9	18
Provide technical assistance for shoreline property owners who initiate enhancement projects on their property	36	2	18
Provide flexibility in some development standards for shoreline property owners who accommodate enhancement projects on their property	21	17	18
Pursue grant funding or other opportunities for larger restoration projects	32	2	22

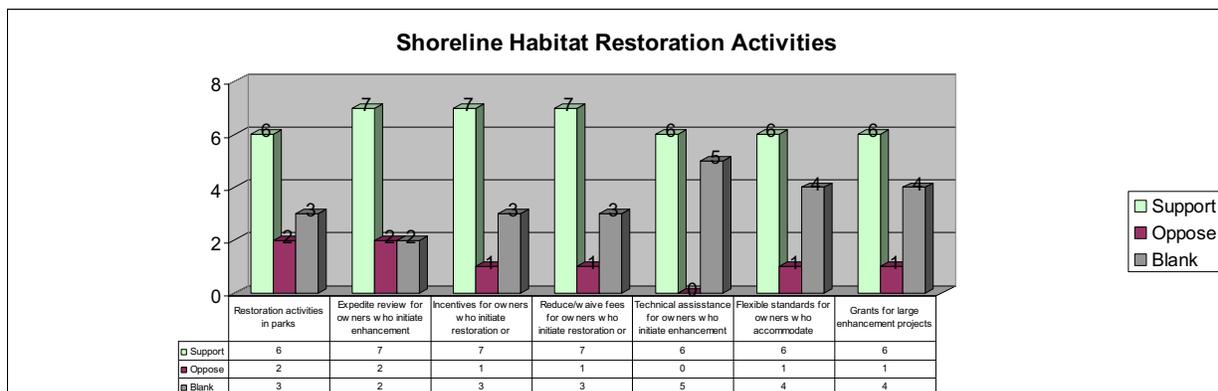
Waterfront Property Owners' responses:

Activity	Support	Oppose	Blank
Undertake restoration activities in existing parks (i.e. reduce bank hardening, install overhanging riparian vegetation, replace bulkheads with sand beaches and gentle slopes, and minimize overwater coverage)	6	2	3
Provide a reduced review time/expedited review for shoreline property owners who initiate enhancement projects on their property	7	2	2
Provide financial incentives (e.g. participation in a Public Benefit Rating System that could reduce land assessments) for shoreline property owners who initiate restoration projects or preserve a natural shoreline on their property.	7	1	3
Reduce or waive fees for shoreline property owners who initiate enhancement projects on their property	7	1	3
Provide technical assistance for shoreline property owners	6	0	5

who initiate enhancement projects on their property			
Provide flexibility in some development standards for shoreline property owners who accommodate enhancement projects on their property	6	1	4
Pursue grant funding or other opportunities for larger restoration projects	6	1	4

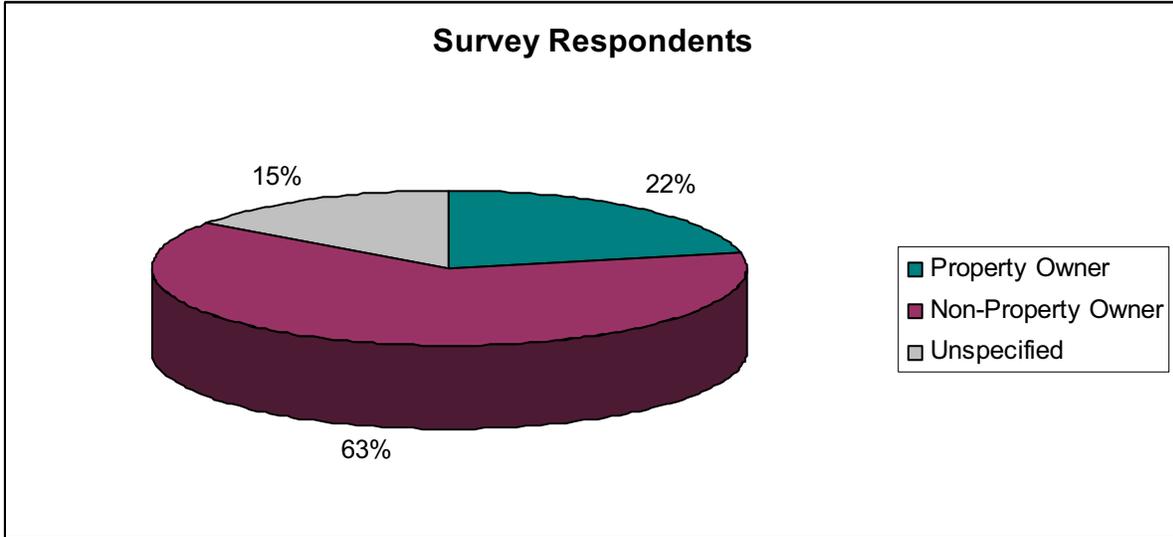


Waterfront Property Owners' response graph:



18. Do you own property along Kirkland's waterfront?

Waterfront Property Owner	Non-Waterfront Property Owner	Unspecified
13	37	9



19. I am primarily interested in the Shoreline Master Program because I am (check all that apply):

Interested in SMP because...	
Shoreline property owner	13
Interested citizen	37
Interested in environmental quality	32
Recreational boater	10
Interested in public access/parks	33
Business interest	3
Other	4

20. The best way to keep me informed is by

Keep me informed by...	
Mailings	5
Website	16
E-mail	31
Public meetings	5
Newspapers and other media	15
Other	1

2007-2008

Lake Washington Shoreline Permitting Process Study



Lake Washington Shoreline Team:
Lindsay Chang, Seth Ballhorn, Kelly
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Environmental Management Graduate
Certificate Program,
University of Washington

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Executive Summary: Lake Washington Shoreline Permitting Process Study

A summary of key findings and recommendations for improving Lake Washington shoreline permitting processes

Who is the Lake Washington Shoreline Team?

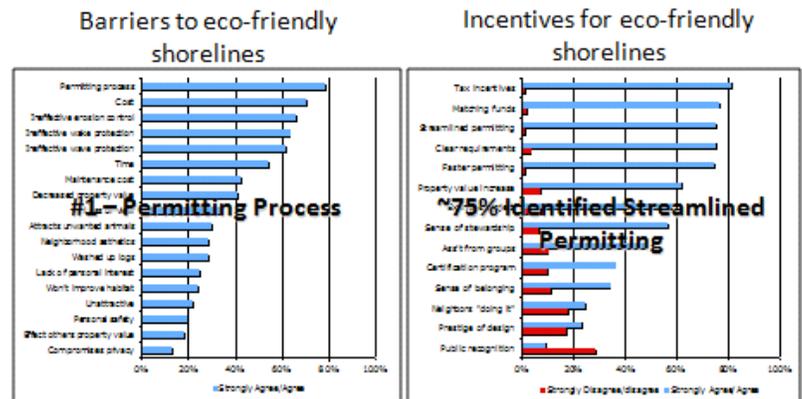
We are an interdisciplinary group of graduate students enrolled in the University of Washington’s Environmental Management Certificate Program and represent four different graduate schools at the university. During the 2007-2008 academic year we performed a study of the Lake Washington Shoreline Permitting Process.

Study Rationale

The physical and ecological function of Lake Washington has been drastically altered by humans over the last century. The Cedar River was redirected to flow into Lake Washington. With this alteration, migrating Puget Sound Chinook Salmon (a threatened species under ESA protection) now utilize Lake Washington as juvenile rearing grounds. Optimal rearing grounds for juvenile salmon, characterized by a low gradient of sand or gravel, overhanging vegetation along the water’s edge, nearshore logs and woody debris, nearby wetlands, and the absence of large objects over the water that create dark shaded areas are sparsely present on Lake Washington’s shorelines. Over 70% of Lake Washington’s shoreline is retained by bulkheads and riprap owned primarily by single-family residential landowners.

The Permitting Process as a Barrier and Incentive

In 2006-2007 a University of Washington Environmental Management Certificate Group called the ‘Fish Friendly’ group surveyed Lake Washington private landowners to identify barriers to and incentives for the implementation of eco-friendly shoreline designs. Survey participants identified the permitting process as the top barrier to implementing eco-friendly shorelines. Approximately 75% of shoreline landowners identified streamlining the permitting process as a potential incentive for implementing eco-friendly shorelines.



The Project Goal and Objectives

Goal: encourage Lake Washington landowners to implement eco-friendly shorelines

Project Objectives:

- Perform a policy analysis of the permitting process for Lake Washington residential shoreline projects
- Create end products that can be used to promote eco-friendly shorelines on Lake Washington

Study Methods

Twenty-seven in-person interviews were conducted with permit issuers (local, state, and federal agencies) and permit applicants (private landowners, contractors, and consultants). A content analysis of the interview data allowed us to identify common themes, and to compare responses between stakeholder groups. The interview findings were used to inform a policy analysis of the permitting process to provide a framework for permit issuers to consider alternative approaches to the permitting process.

Key Interview Findings

The permitting process is confusing and complicated, leading private landowners to rely on their contractors and consultants to aid them through the permitting process. Because individual permit issuing agency staff are responsible for administering a variety of permits, they are often unfamiliar with how their shoreline related permits fit into the permitting process at large.

Lack of adequate resources and information about eco-friendly shorelines was identified by all interviewees.

Communication/coordination problems exist among permit issuers about the sequence of permit applications and the requirements for shoreline designs.

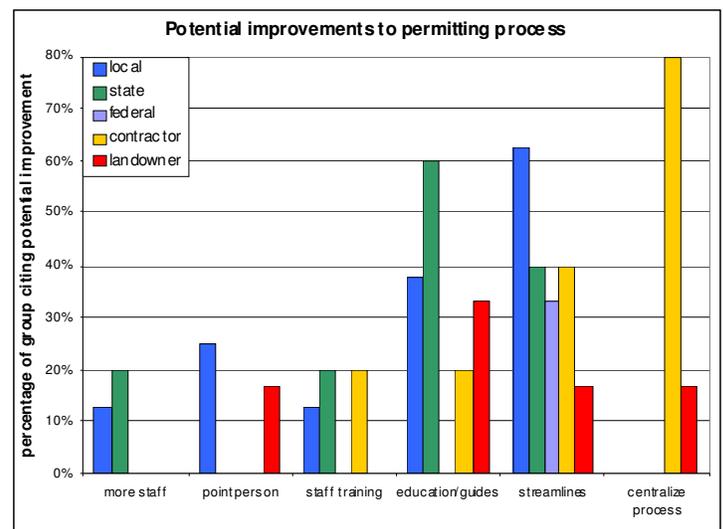
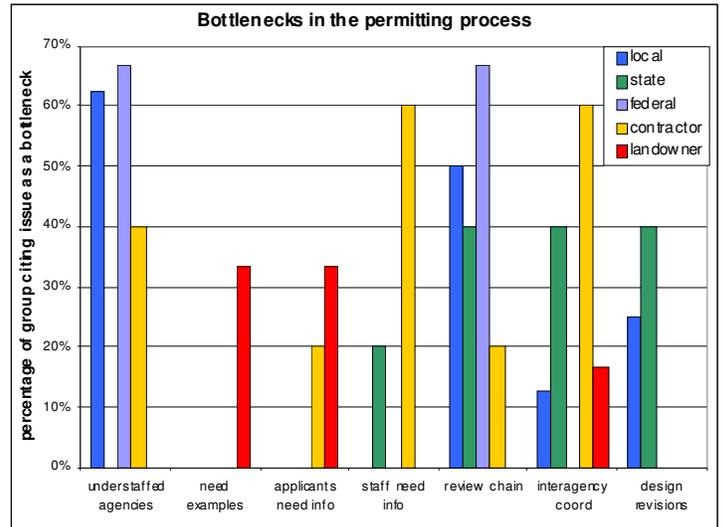
Non-permitted (illegal) shoreline work is common and widely recognized by private landowners, posing both environmental and public safety risks.

Few incentives for eco-friendly shoreline designs exist even with the new federal Lake Washington Shoreline Protection Alternatives Programmatic.

Policy Analysis

Policy Objective: To increase suitable nearshore habitat for juvenile salmon in Lake Washington by encouraging shoreline landowners to implement eco-friendly shorelines

		POLICY CRITERIA			
		Environmental Effectiveness	Program Costs	Viability	Environmental Review
POLICY OPTIONS	Status Quo	Low	None	Easy	Stringent
	Education & Outreach	Medium	Moderate	Easy	Balanced
	Financial Incentives	High	Expensive	Difficult	Stringent
	Permit Streamline and Code Changes	Medium	Moderate	Moderate	Balanced



Policy Options: 1) Maintain the status quo, 2) Education/outreach and coordination both among and between stakeholder groups, 3) Provide financial incentives, 4) Make changes in code for permit streamlining

Policy Criteria: 1) Environmental effectiveness, 2) Program implementation costs, 3) Political viability and equitability, 4) Adequate environmental review

Key Policy Analysis Findings

The status quo is not working well; the current permitting process is hindering the policy objectives.

Tax incentives are not feasible as they are politically charged and may not represent the general interest of the public.

Increased enforcement is not viable; this is option is costly and hinders positive relationships between permit issuers and applicants.

Education for all stakeholders and interagency coordination are viable and cost effective.

Recommendations

- Streamline the permit process for eco-friendly shoreline designs at the state and/or local level.
- Increase outreach and education efforts to Lake Washington property owners and shoreline contractors.
- Promote collaboration and coordination between the local, state and federal permit issuing agencies that regulate shoreline construction on Lake Washington.

Project Deliverables

Report. Written to document the Lake Washington Shoreline Permitting Process Study in full for the benefit of permit issuing agencies and our community partners, it contains more detailed information about our key findings and recommendations.

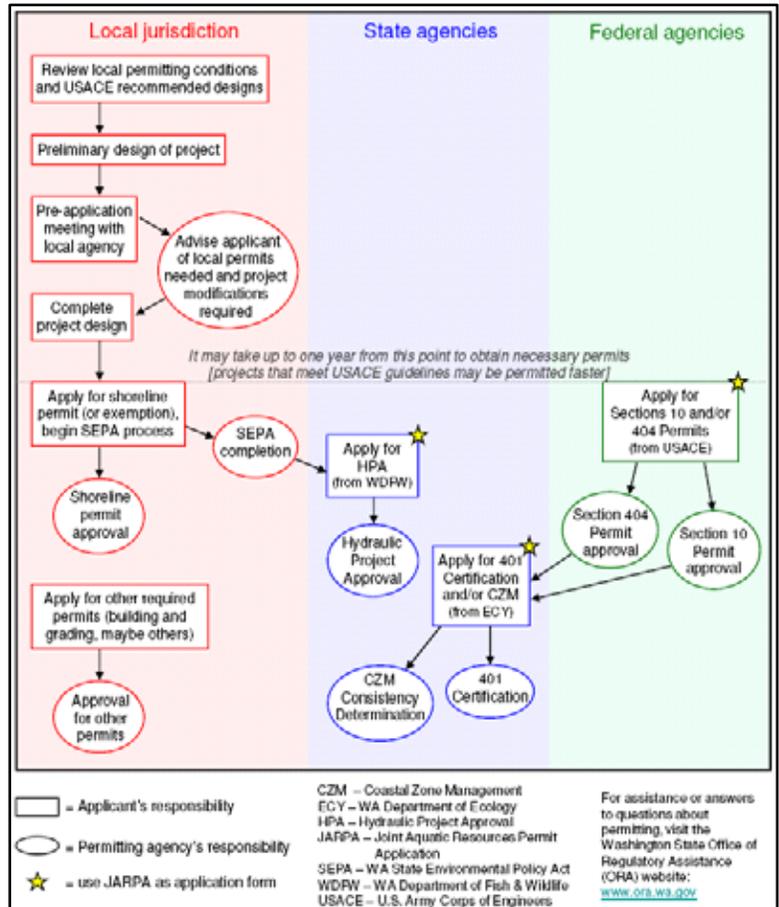
Permitting Process Schematic for landowners/applicants. A schematic of the entire permitting process for Lake Washington shoreline projects did not previously exist. This schematic provides a general overview of the permitting process including, and the general ordering of permit applications and review, the permits and permit applications involved, and the permit issuers involved in each step.

Information and Resources

For more information and electronic access to our full report and other Lake Washington Shoreline Team documents and presentations please visit our website: http://courses.washington.edu/emksp07/NOAA_AltTradShorelines

Acknowledgements

Community Partners Polly Hicks, NOAA Restoration Center; Jean White, WRIA8; Dave LaClergue, City of Seattle; Holly McCracken, Seattle Public Utilities; *Faculty Mentor* Research Prof. Charles 'Si' Simenstad; *Interview Participants*; *Washington State Governor's Office of Regulatory Assistance*, Zelma Zieman; *Washington State Dept. of Ecology*, Joe Burcar & Lori Enlund; *Henry Luce Foundation*



Lake Washington Shoreline Permitting Process Schematic for landowners and applicants

Introduction

Background

Lake Washington provides important habitat for numerous species including the threatened Puget Sound Chinook salmon. Lake Washington's shoreline has been and continues to be drastically altered for human use. Historically the lake's edge was a mixture of conifer forests, willow thickets, and wetlands that filtered stormwater runoff and provided nutrient inputs. Today a majority of the lake's shoreline is comprised of bulkheads, riprap, and non-native vegetation that do not provide the ecological functions necessary to support a healthy lake and threatened species.

Conventional shorelines (bulkheads and riprap) threaten the health of the lake, yet they make up more than 70% of Lake Washington's shoreline¹. The majority of the shoreline is owned by residents empowered to choose the type of shoreline design they want on their property. Eco-friendly shorelines that promote lake health are possible, but landowners on Lake Washington perceive the process of converting to an eco-friendly shoreline as expensive and as a permitting nightmare. Residents also worry that eco-friendly shorelines will be ineffective at controlling erosion and protecting the land from wave and wake energy. These issues ranked as the most common concerns of private landowners in a survey conducted by the Fish Friendly Shorelines group.

Fish Friendly Shoreline Project

The Fish Friendly Shorelines group was a team of 2006-2007 Environmental Management students who performed a survey of private landowners around Lake Washington to collect information about shoreline resident's use of their shoreline and their opinions about what best promotes healthy shorelines². The Fish Friendly survey identified the permitting process, along with cost and ineffectiveness to erosion control, as one of the top barriers to shoreline property owners implementing eco-friendly shorelines. The study also identified streamlined permitting, along with tax incentives and matching funds, as one of the top three incentives for residents to use eco-friendly design on their shoreline. The findings from the Fish Friendly study encouraged our team to investigate why the permitting process was perceived as a top barrier to implementing more eco-friendly shorelines.

Although resident's responses may have been influenced by personal experience, it is also possible that their views were informed by biased information given to them from other landowners or contractors. Further investigation was needed to assess whether these barriers were real or simply perceived. An opportunity existed for our team to assess the permitting process to identify its areas of weakness, find a way to circumvent any possible mazes, and determine whether lack of knowledge of the permit process by landowners is a problem source point. The team's community partners indicated that many

¹ Toft, J.D. 2001. *Shoreline and Dock Modifications in Lake Washington*. Technical Report. SAF-UW-0106, School of Aquatic and Fishery Sciences, University of Washington, Seattle, Washington.

² Howell, R., Casad, G., Fries, D., Roberts, K., Russo, B., Wallis, A. 2007. *Wildlife-Friendly Shoreline Modifications on Lake Washington: Summary of Shoreline Property Owner Survey and Regulatory Interviews*. Environmental Management Keystone Project Final Report, Program on the Environment, University of Washington, Seattle, Washington.

of the agencies involved in the permitting process want to work more collaboratively to make permitting a smoother process, but they often do not know how to do this.

Eco-Friendly Shorelines

A shoreline is eco-friendly if it promotes beneficial ecosystem functions to wildlife while still preventing erosion and maintaining human enjoyment of the lake. Eco-friendly shorelines do not all look alike, but they may include such features as beach coves or full beaches, overhanging vegetation or planting buffers, bulkheads that are set back an appreciable distance behind the ordinary high water mark (OHWM), appropriately placed logs or large woody debris, and biotechnical slope stabilization. For more information, see the City of Seattle's *Living Shorelines* guidebook due out in summer 2008.

Goal and Objectives

Our overall project goal is to *improve ecosystem functions of Lake Washington by encouraging shoreline landowners to implement eco-friendly shoreline designs*. This can be accomplished through a measurable reduction in hardened shoreline around Lake Washington. We aimed to do this by investigating the permitting process to identify what role it plays in the implementation of eco-friendly shorelines, and by assisting our community partners in educating all stakeholders involved on the costs and benefits of eco-friendly versus traditional hardened shorelines. Our specific project objectives included:

- Performing a policy analysis of the shoreline construction permitting process that Lake Washington landowners are required to navigate
- Use this information to create end products that we or our community partners will use to promote eco-friendly shorelines on Lake Washington
- Provide educational resources for private landowner regarding their shoreline design options

Project Rationale

The physical and ecological function of Lake Washington has been drastically altered by humans over the last century. Historically, the lake was drained by the Black River, which fed into the Duwamish River flowing into Elliot Bay. The Duwamish Estuary at the mouth of the Duwamish River was the primary rearing area for juvenile Chinook salmon. The Cedar River also fed into the Black River downstream from Lake Washington. In 1916, the Lake Washington Ship Canal and Chittenden Locks were completed, connecting the lake to Shilshole Bay. The Cedar River was redirected to flow into Lake Washington. These actions resulted in lowering the water level of the lake roughly ten feet, exposing 5.4 km² of previously shallow water habitat, and eliminating many of the lake's wetlands³. Furthermore, residential development on the lake resulted in the construction of bank reinforcements in the form of bulkheads and riprap at the lake's edge, changing nearshore conditions from a low gradient with small gravel and sand substrates to a steep gradient more vulnerable to erosion from wave energy. The

³ Kerwin, J. 2001. *Salmon and Steelhead Habitat Limiting Factors Report for the Cedar-Sammamish Basin*. Washington Conservation Commission.

engineered changes in the rivers and lake also forced migrating salmon and other fish to change their migratory routes and rearing grounds. Juvenile Chinook salmon now rear primarily in nearshore areas of Lake Washington.

This area is critical for the survival of the native fish so highly valued as a member of the ecosystem and as food, especially by Native American tribes. Fish must now travel different migratory corridors and rearing areas than they historically used. Optimal rearing areas for juvenile salmon are characterized by shallow water, a low shoreline gradient, overhanging vegetation along the water's edge, nearshore logs and woody debris, nearby wetlands, and the absence of large objects over the water such as docks that create dark shaded areas. A steep gradient with a hard retaining wall at the water's edge creates deep nearshore areas in which juvenile salmon are less able to find food and are vulnerable to predation. In 1999, Puget Sound Chinook salmon and bull trout were listed as "threatened" species under the Endangered Species Act (ESA). Under the ESA, federal agencies must ensure that actions they authorize are not likely to jeopardize the continued existence or result in adverse modification of designated critical habitat of listed species⁴.

Since the nearshore of Lake Washington is already significantly altered in ways that seriously compromise the critical habitat of Chinook salmon, efforts to comply with the ESA and to more generally enhance the health of the lake ecosystem have focused on "restoration" of the shoreline. Of course, the lake's shoreline cannot be restored to its natural conditions because the water is almost ten feet lower than its natural level and homes and other structures have been built on the land that was historically under water. Furthermore, since most of the lakefront property is owned by private individuals and currently retained by bulkheads and riprap, it would be very difficult, if not politically impossible, for regulatory agencies to mandate that critical areas of the shoreline be restored to conditions that mimic the natural shoreline. Thus, the U.S. Army Corps of Engineers (USACE) in consultation with the National Oceanic and Atmospheric Administration (NOAA) is working to fulfill its obligations under the ESA by cooperating with local and state agencies to require shoreline design that enhances habitat for Puget Sound Chinook salmon as part of any proposed significant work on Lake Washington shorelines.

The Washington Shoreline Management Act (SMA) requires that shoreline natural resources be protected against adverse effects to water and wildlife, and that adverse environmental impacts be mitigated to the maximum extent feasible⁵. Local jurisdictions have Shoreline Master Programs/Plans (SMPs) which are based on the requirements set forth by the SMA. Most local agencies have codes that now prohibit the replacement of hardened shoreline retaining structures unless it is shown that they are needed to maintain protection of buildings from wave action or it is otherwise infeasible to restore the shoreline to more natural conditions.

Despite increasing efforts on the part of the agencies at local, state, and federal levels of government, very little of the privately owned shoreline of Lake Washington has been restored to more natural conditions. Our community partners, NOAA, Water Resource Inventory Area 8 (WRIA 8), Seattle Public Utilities (SPU), and the City of Seattle asked our team to develop and implement a project that would address this issue. They also expressed that a study of the permitting process would be very helpful to them in their continued efforts to increase the quantity and quality of eco-friendly projects on Lake Washington shoreline residential property. The local jurisdictions are currently undergoing the process of updating their SMPs, so an analysis of the permitting process is timely in that it could be of use to

⁴ Endangered Species Act. 1973. (7 U.S.C. § 136, 16 U.S.C. § 1531 et seq.).

⁵ Shoreline Management Act. 1971. Chapter 90.58 RCW.

agencies as they revise the codes that regulate local permitting of shoreline construction and restoration.

Given the responses to the survey, additional efforts geared toward better understanding and communicating the issues related to the cost of eco-friendly shorelines and the perception of such shorelines as being ineffective at controlling erosion are recommended. This could be the focus of a future related project.

Interviews

During the early stages of our project, we referred to eco-friendly shorelines as “alternative shorelines”. However, over time we came to the conclusion that the term “alternative” is ambiguous. Although many people do not know what an eco-friendly shoreline is, “eco-friendly” at least gives them an idea of the shoreline’s function, even if they cannot picture the specific aspects of such a design. However, we decided not to reword our interview questions after the fact. Hence, in the interview questions and the discussion of the responses, we sometimes refer to “alternative shorelines.” Similarly, there are other terms that refer to the same thing, such as green, living, or soft shorelines. A consensus should be reached on the terminology to avoid confusion and facilitate recognition of the chosen term.

Methods

To gain an understanding of the nuts and bolts of the shoreline permitting process and the diversity of perspectives on permitting, we conducted a series of interviews with people from the entire spectrum of participants in the permitting process. The people we interviewed include permit issuers from local, state, and federal government agencies, as well as permit applicants including Lake Washington homeowners and shoreline contractors and consultants. We created a list of questions to ask every interviewee, with a few additional questions asked only of permit applicants. See Appendix A for the complete list of interview questions. This list of questions was approved by the University of Washington Human Subjects Division, which required us to keep the identities of the interviewees anonymous. The interview questions are mostly open-ended; rather than giving interviewees options to choose from, we simply asked the questions and allowed the interviewee to interpret and answer as he/she saw fit. We asked for clarification when needed. Almost every interview involved one interviewee and two interviewers from our team; one team member was the primary question asker, while the other was the primary note taker. Interviews lasted between 30 minutes and 1 hour, depending on the time available and the amount of detail offered by the interviewee. After the interview was completed, the primary note taker typed the answers to the questions into a document, using a template for consistency. The primary question asker, who also took notes during the interview, then reviewed the typed notes and added points missed by the primary note taker and noted any points of disagreement (which were rare) with the original notes.

Once the interviews were completed, the team performed a content analysis to identify trends and patterns from the interview notes. The analysis consisted of compiling all the narrative responses to each question into a single document, then reading through the entire collection of responses and compiling a list of unique responses. The responses were subsequently read through again, this time matching the response from each interview into the appropriate category or categories of responses from our list and recording it in a comprehensive spreadsheet. Since this determination is somewhat subjective, it was done in teams of two to achieve some consistency and guard against mistakes. Some determinations were very easy and straightforward, such as ones in which many interviewees used common terminology to answer a question (i.e. “agencies are understaffed” or “pre-application

meeting”), while others required interpretation to decide whether differently worded answers were communicating the same idea and should be lumped together in one category. We did our best to categorize the responses by what each interviewee intended to communicate in the narrative offered to answer our questions.

Once the spreadsheet was completed, we calculated the percentages of each category of response provided by each group of interviewees. Interviewees fell into the broad groups of permit issuers and permit applicants. Within in the group of permit issuers, the interviewees were in subgroups of local agencies, state agencies, and federal agencies. Within the group of permit applicants, the subgroups were private landowners and contractors/consultants.

Results and Recommendations

A total of 27 interviews were conducted during the winter of 2008 and the qualitative data obtained from the interviews was analyzed as described in the Methods section of this report. Of the 27 interviews, 15 were with permit issuers and 11 were with permit applicants. Of the interviews with agency personnel, eight represented a local agency, five represented a state agency, and three represented a federal agency. We also conducted five interviews with contractors and consultants, six with and shoreline residents on Lake Washington. Figure 1 shows the graphical distribution of the various stakeholders that were interviewed. The interviewees’ familiarity with the permitting of specifically eco-friendly shorelines varied, but all had some experience with the shoreline permitting process on Lake Washington.

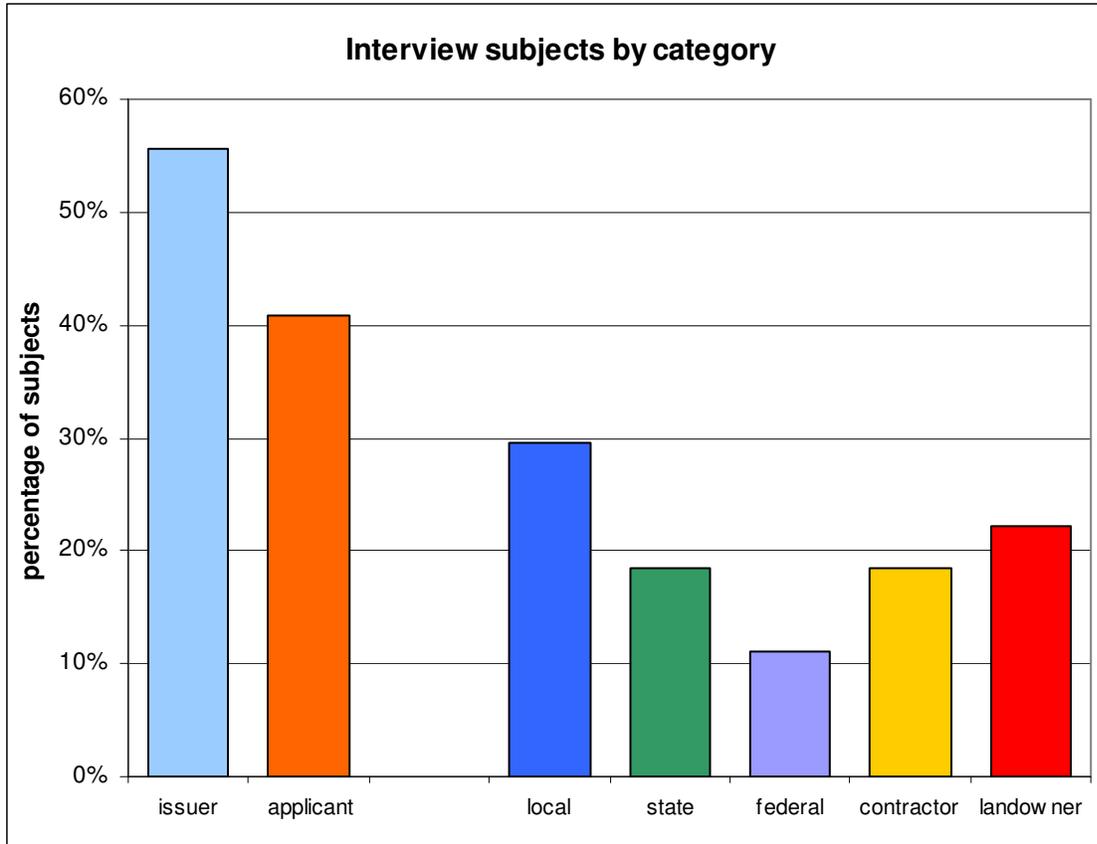


Figure 1: Interview subject by category.

The results of the content analysis are provided here. It is important to note that the results are not statistically significant and should not be interpreted as such. The interviewees were selected based on contacts the team had through our community partners, information gathered from the internet, and from information volunteered by other interviewees. Since the interviewees were not selected at random and the number of interviewees in each group is small, the results should not be interpreted as representative of the group as a whole. We have tallied the results and report them graphically and numerically to give general information regarding the diversity of perspectives and knowledge of the Lake Washington shoreline permitting process among the various stakeholders. While the results should not be thought of as representative of the whole groups of stakeholders, nor should the numbers be construed as statistically significant, the results do identify important trends that can inform continued efforts to increase eco-friendly shoreline projects on Lake Washington and improve ecosystem function.

While every effort was made to interview each person individually, time and scheduling concerns were balanced with the desire to obtain the largest possible breadth and depth of information in the time we had, resulting in two interviews in which two people from the same agency or company being interviewed together. In both of these interviews, the two interviewees were in agreement with each other on the answers to the questions. In the results, those interviews are counted the same as any other interview; no extra weight was given to them due to the participation of two people in the interview.

All of the graphs in this section of the report follow the same format. Some divide interviewees into the large groups of issuers (15) and applicants (11), while most divide interviewees into the subgroups of local agency (eight), state agency (five), federal agency (three), contractor/consultant (five), and private landowner (six). There was one interviewee representing a government agency that is a stakeholder in the permitting process, but is neither an issuer nor an applicant. The responses from that interview are included in the appropriate subgroup, but they are not factored in to either of the large groups. The distribution of interviewees in the large groups and subgroups are shown in Figure 1.

In this section, we provide a content analysis based on the following questions:

- *Are there any perceived or actual bottlenecks in the permitting process? If so, where do they exist?*
- *How can permit applicants avoid bottlenecks?*
- *What are the most common mistakes made by permit applicants?*
- *Is there a discussion between the permit applicant and the permit issuer about the applicant's shoreline design? Are alternative shorelines promoted by the permit issuer?*
- *Are there any shortcuts or streamlines in the permitting process for landowners interested in implementing alternative shoreline designs (as compared to installing or replacing a bulkhead or riprap)?*
- *Is any alternative shoreline design information available for permit applicants?*
- *How do people know they need a permit?*
- *What assistance and resources are available for permit applicants?*
- *[To landowners:] Does your property have an alternative shoreline design? [To contractors and consultants/designers:] Have you designed and/or constructed any alternative shoreline designs? Why or why not?*
- *What are the benefits of alternative shoreline designs?*
- *How do the following factors affect the choice between traditional and alternative shoreline designs?*

The remainder of this section of the report presents the findings from the interviews. For each of the questions that yielded responses that can be compared in a meaningful way and provide some insight into the permitting process, we present the results using the following format. First, the question asked of the interviewees is given. Then the qualitative data based on the verbal responses is described in text and graphically. Finally, we suggest recommendations for addressing the issue.

Are there any perceived or actual bottlenecks in the permitting process? If so, where do they exist?

A wide variety of responses were given to this open-ended question, but there was general consensus among interviewees from all of the groups that there are bottlenecks in the permitting process. The responses generally fit under the themes of lack of resources (time/staffing, education, information) and issues within the process itself. Over 40% of each of the agency groups stated that the review chain is a bottleneck, meaning that the current process is slowed by the requirements for some permits and reviews to be completed by one agency before another agency can review or often even accept an application. Over 60% of local and federal agency interviewees, along with 40% of contractors and consultants, stated that lack of adequate staffing at some of the agencies slowed the permitting process. Some interviewees indicated that the staffing issues were improving. 25% of the local agency

interviewees and 40% of the state agency interviewees said that revision of designs slows the process because of the back-and-forth negotiation of the design between permitting agencies and applicants and the need to resubmit applications to other agencies if the design is revised at the request of one agency.

About a third of landowners stated that they need more information and examples of shoreline designs that are acceptable to the agencies. 20% of contractors and consultants agreed that applicants need more information, and 60% also think that agency staff need more information and education, as they perceived that some permit reviewers were not as familiar with the specific permitting process associated with shorelines (as opposed to other land use permits) as necessary for timely review, and even less familiar with alternative shoreline designs. As Figure 2 shows, at least one interviewee from each subgroup except the federal agencies cited inadequate interagency coordination as a bottleneck. Contractors and consultants, who submit applications for shoreline projects on behalf of the landowners much more often than the landowners themselves, were most vocal about the lack of interagency coordination and its effect on the permitting process.

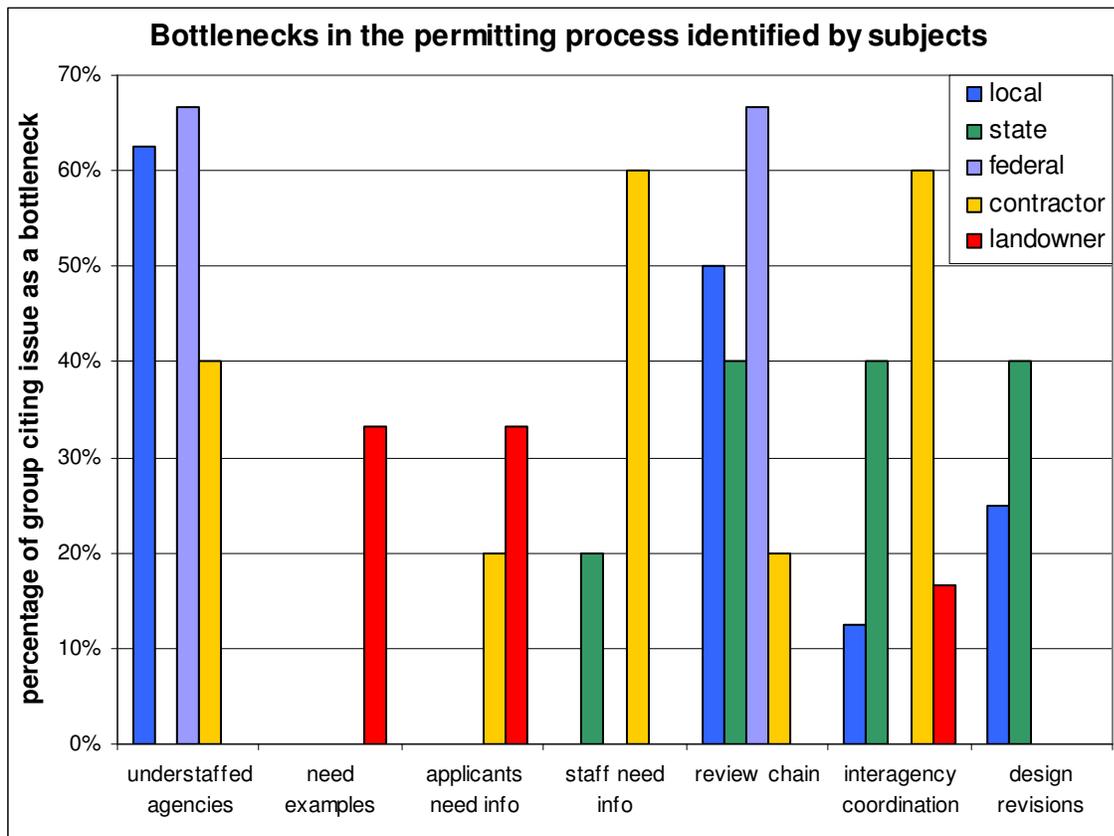


Figure 2: Bottlenecks in the permitting process, all stakeholders.

When the results are sorted by permit issuers and applicants, as shown in Figure 3, it is clear that there is a difference of opinion between the interviewees belonging to these two groups. Over 45% of permit issuers cited the review chain as a bottleneck, while only a small fraction of the applicants cited that issue. Even more striking is that more than 25% of the permit issuers brought up design revisions as a bottleneck, but no applicants cited it (Figure 3).

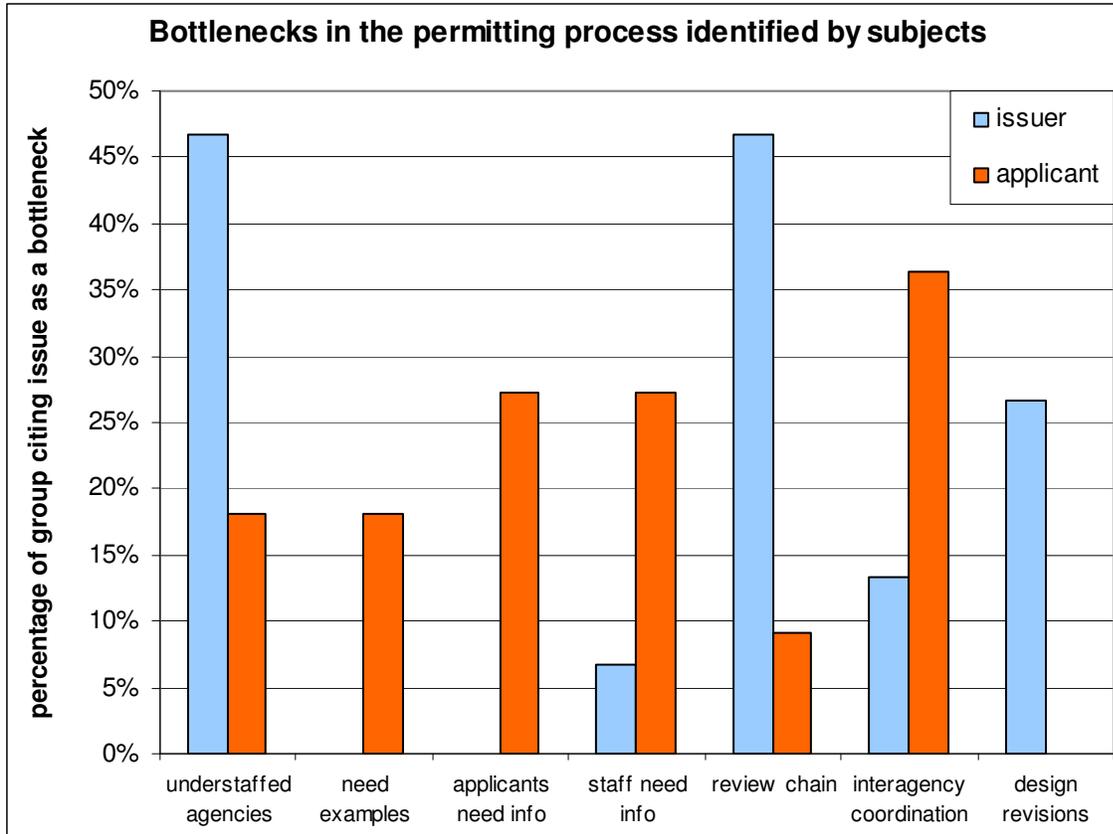


Figure 3: Bottlenecks in the permitting process, separated by issuer and applicant.

Recommendations

Streamlining the permitting process would eliminate or minimize delays due to the review chain. Providing information to landowners, contractors, and consultants about the agencies' requirements for shoreline projects, including a variety of examples, would allow applicants to start the process with a design that will require few or no revisions. Interagency coordination will be necessary in developing appropriate guidelines and examples for applicants. Some agencies deal with shoreline permitting frequently, while some of the local jurisdictions do not. Educational material shared between the agencies at all levels would be helpful in interagency coordination as well as providing the land use departments of all of the local jurisdictions around Lake Washington with the resources they need in order to permit shoreline projects that are in line with the state and federal requirements.

How can permit applicants avoid bottlenecks?

Again, interviewees volunteered their own answers to this question, and several of the answers were repeated by many of the interviewees. Some of the interviewees did not have any suggestions of ways applicants can avoid bottlenecks. Interestingly, the only ways identified by landowners were applying early and hiring a professional. As shown in Figure 4, a majority of the permitting agencies stated that the best way applicants can avoid bottlenecks is by following the guidelines of the permitting agencies (stated several ways, such as comply with the code, follow the guidelines, and come in with an eco-friendly shoreline design). Having a productive pre-application meeting in which the shoreline design is

discussed was identified by some of the local and state agency interviewees and some of the contractors and contractors as another means to avoid bottlenecks. In addition, Figure 5 shows that permit applicants were much more likely to say that hiring a professional is a way to avoid bottlenecks.

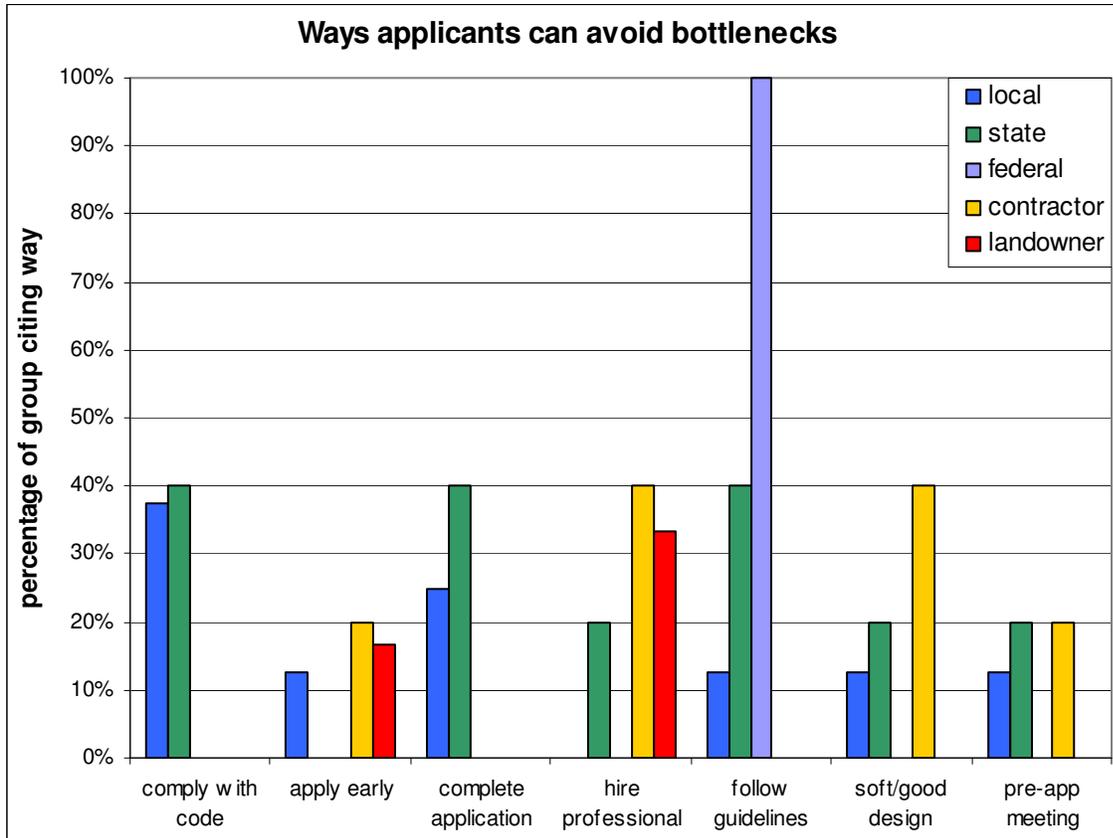


Figure 4: How applicants can avoid bottlenecks in permitting process, sorted by subgroups

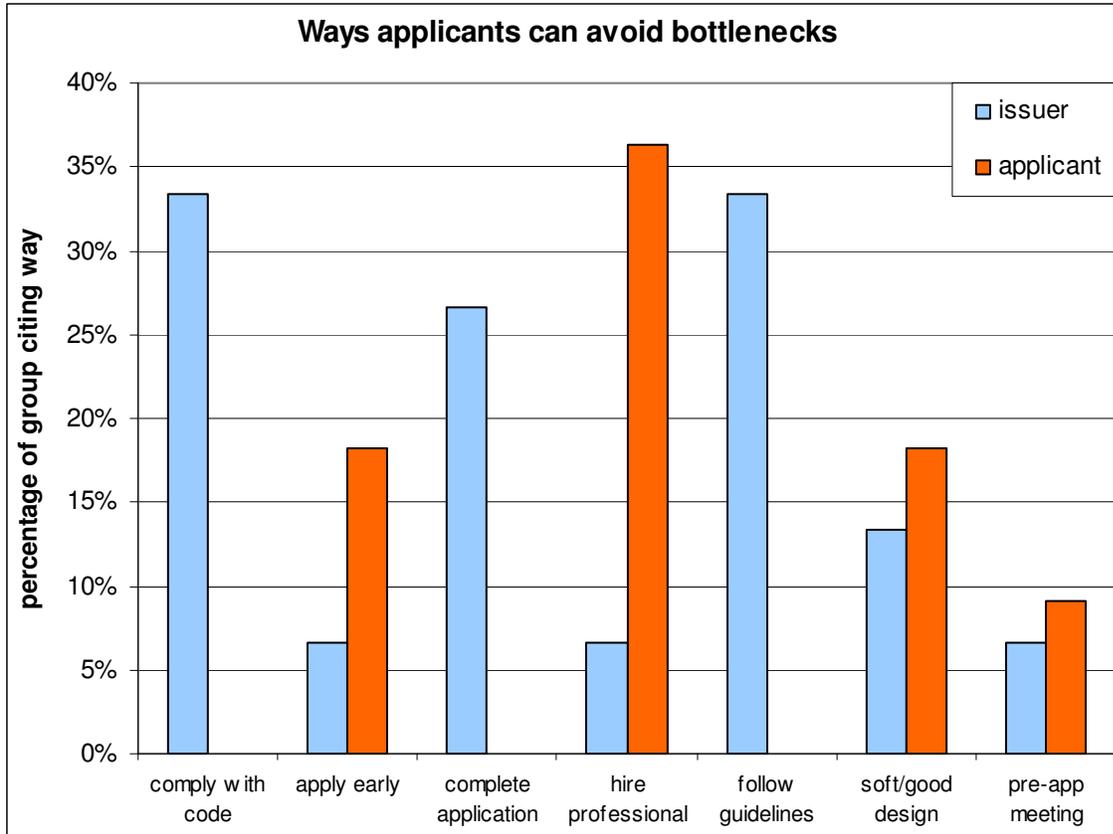


Figure 5: How applicants can avoid bottlenecks in permitting process, sorted by groups.

Recommendations

As with the responses to the previous question, this data indicates that education and information for applicants about the requirements for shoreline projects would help to minimize time and frustration for everyone involved. Also, since most local jurisdictions require a pre-application meeting with the applicant, this is an opportunity for the local agencies to educate applicants about what the agencies (at all levels) are looking for in a shoreline project design and the potential for eco-friendly designs to improve the health of the lake and ensure a smoother, faster permitting process for the applicant.

What are the most common mistakes made by permit applicants?

The most prevalent answers provided by the interviewees were ignorance of the permitting process, offered by two-thirds of the applicant group and one third of the permit issuer group, which is especially striking considering that the response doesn't identify a mistake so much as a deficiency that is likely to lead to mistakes. Providing incomplete information on applications was a common response among all groups except landowners (Figure 6). Having "too hard" of a shoreline design and not complying with the code were fairly common responses among agencies and a small percentage of contractors and contractors.

Perhaps most interesting is the indication by 20-33% of every agency group that a common mistake by landowners is having a blind trust in their contractors or consultants to take care of the shoreline design

and permitting. Some interviewees at each level of agency believe that some contractors and consultants do not inform their clients of alternatives to replacing a bulkhead because they do not know how to design or implement an eco-friendly shoreline. Some of the contractors and contractors we interviewed stated that alternative shorelines are not desired by homeowners and that soft shorelines are not effective at controlling erosion and do not work on most sites. Some of the permit agency interviewees also said that many (but not all) contractors and consultants charge their clients by the hour, thus giving them an incentive to submit shoreline designs that will be difficult to approve and draw out the permitting process by refusing to make the agencies' recommended design changes without keeping their clients in the loop. There did seem to be a general consensus among all of the groups of interviewees that many landowners have little to no communication with the permitting agencies, even regarding revisions to the designs, leaving contractors and consultants as the go-between. This situation could potentially lead to the conflict of interest described by some of the permit issuers.

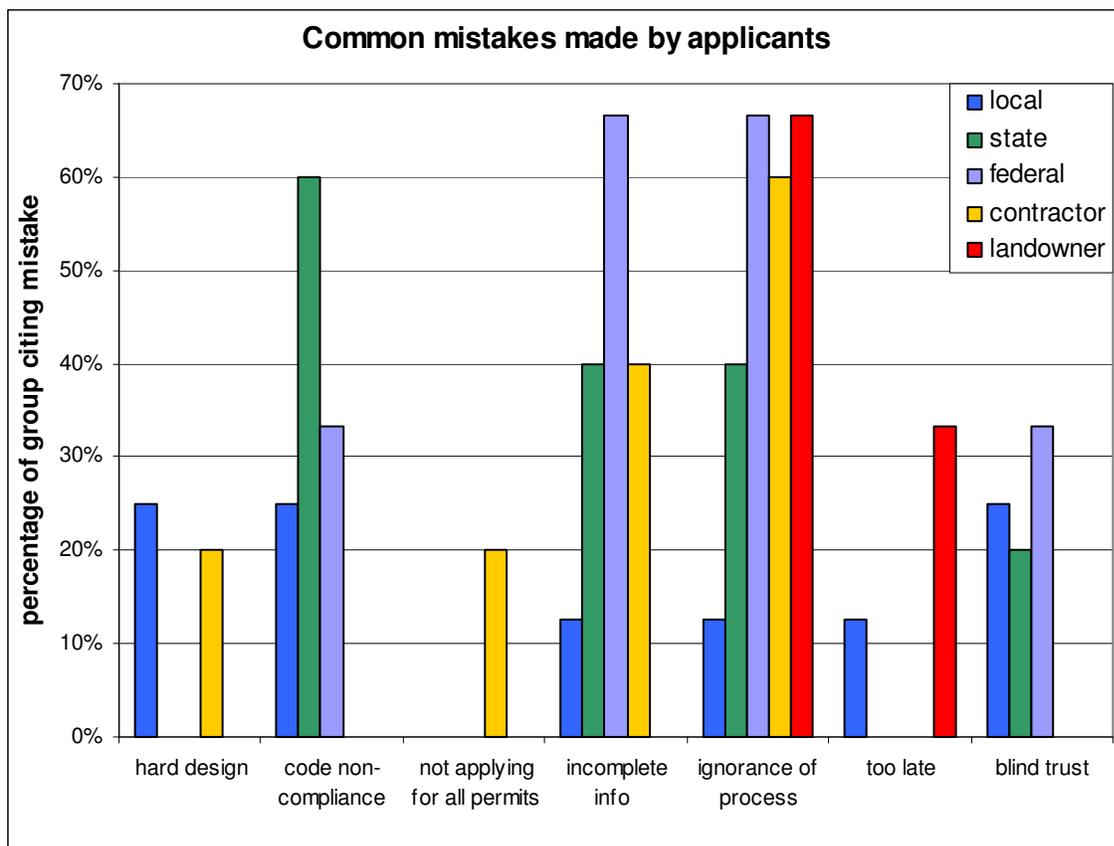


Figure 6: Common mistakes made by permit applicants.

Recommendations

Once again, applicants need better information and guidance to help them understand what shoreline designs will be approved by the agencies. In addition, there is a possibility that in some cases, the information that is provided by agencies regarding suggested design revisions is not passed on the landowners from their agents (contractors or consultants). We have no evidence that this is a widespread problem, but since we do know that most landowners hire contractors and/or consultants to navigate the permitting process for them, this could be an issue. Landowners are ultimately responsible for their own property and the decisions concerning it, so they should be informed of the shoreline

requirements and the reasoning behind the code in order to make their own decisions, rather than allowing hired professionals to make decisions for them.

Is there a discussion between the permit applicant and the permit issuer about the applicant’s shoreline design? Are alternative shorelines promoted by the permit issuer?

The answers to these questions were essentially yes or no. Figure 7 gives the percentages of each group answering yes to the question. Interestingly, more than half of the permit issuers and the contractors and contractors said that there is a discussion between the permit issuer and applicant about the shoreline design and that alternative shoreline designs are promoted by the permit issuer, but only one third of the landowners interviewed agreed. This may reflect the fact that landowners often allow hired professionals to act as their agents in the permitting process. But it may also indicate that beyond not being directly involved in the process, the landowners do not know what is going on in the process. It is also interesting that not all of the permit issuers agreed that there is a discussion between the issuer and applicant, let alone that alternative shorelines are promoted. This is especially interesting given that every level of government has regulations related to shoreline development and the protection of the environment.

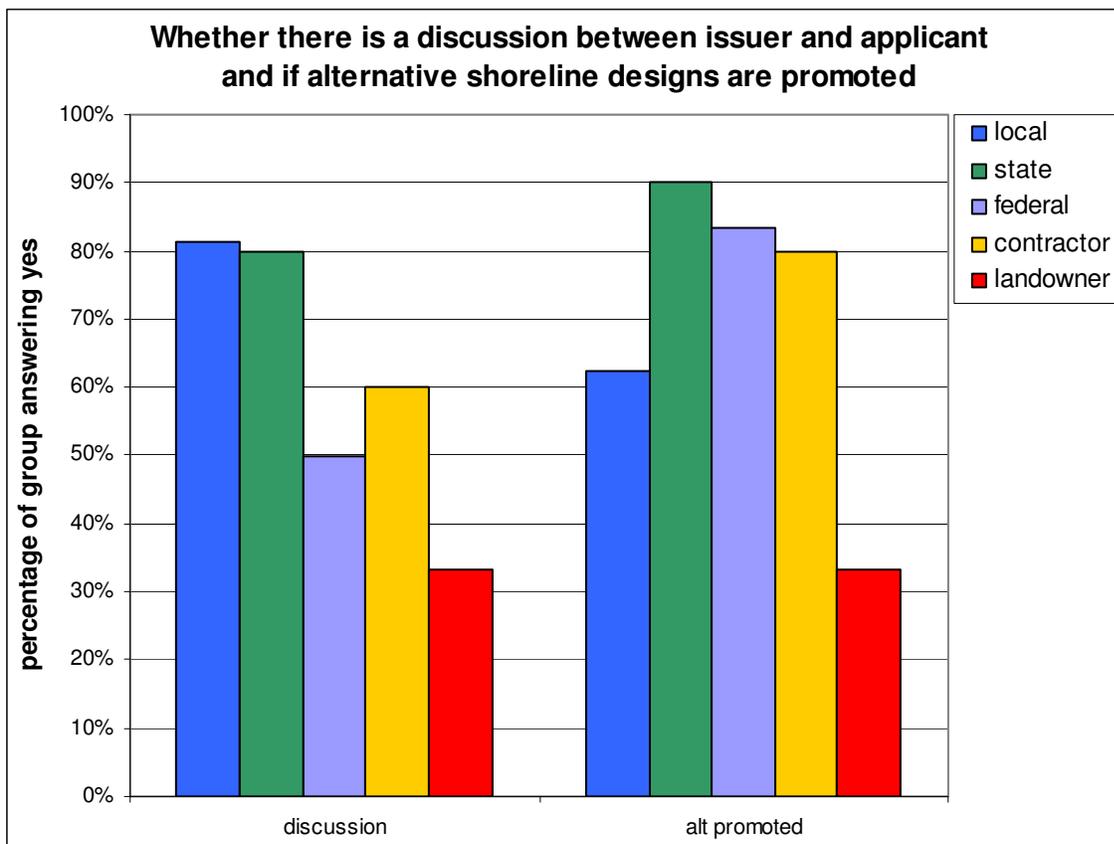


Figure 7: Discussion and/or promotion of eco-friendly shorelines.

Recommendations

To increase restoration activities on Lake Washington residential shorelines, it is critical that the agencies achieve a greater cohesion, both horizontally and vertically, in terms of how shoreline projects will be permitted and the information that will be given to applicants and potential applicants. The information communicated to the public and to applicants should be consistent and clear.

Are there any shortcuts or streamlines in the permitting process for landowners interested in implementing alternative shoreline designs (as compared to installing or replacing a bulkhead or riprap)?

Interviewee responses were highly variable among the interview subject categories. As shown in Figure 8, all federal agency subject responses, 50% of contractor subject responses, 17% of landowner subject responses, 13% of local permitter subject responses, and 10% of state agency subject responses identified that yes, there are shortcuts or streamlines in the permitting process for shoreline residents interested in implementing alternative shoreline designs. The variability among the different subject group responses suggests that there is a lack of consensus on whether or not shortcuts or streamlines exist in the permitting process as well as a lack of communication between stakeholder groups about the shortcuts or streamlines that do exist. It is important to note that response variability occurs on multiple levels, within a subgroup (for example, among permitter jurisdictions) as well as between subgroups (for example, between permitters and applicants).

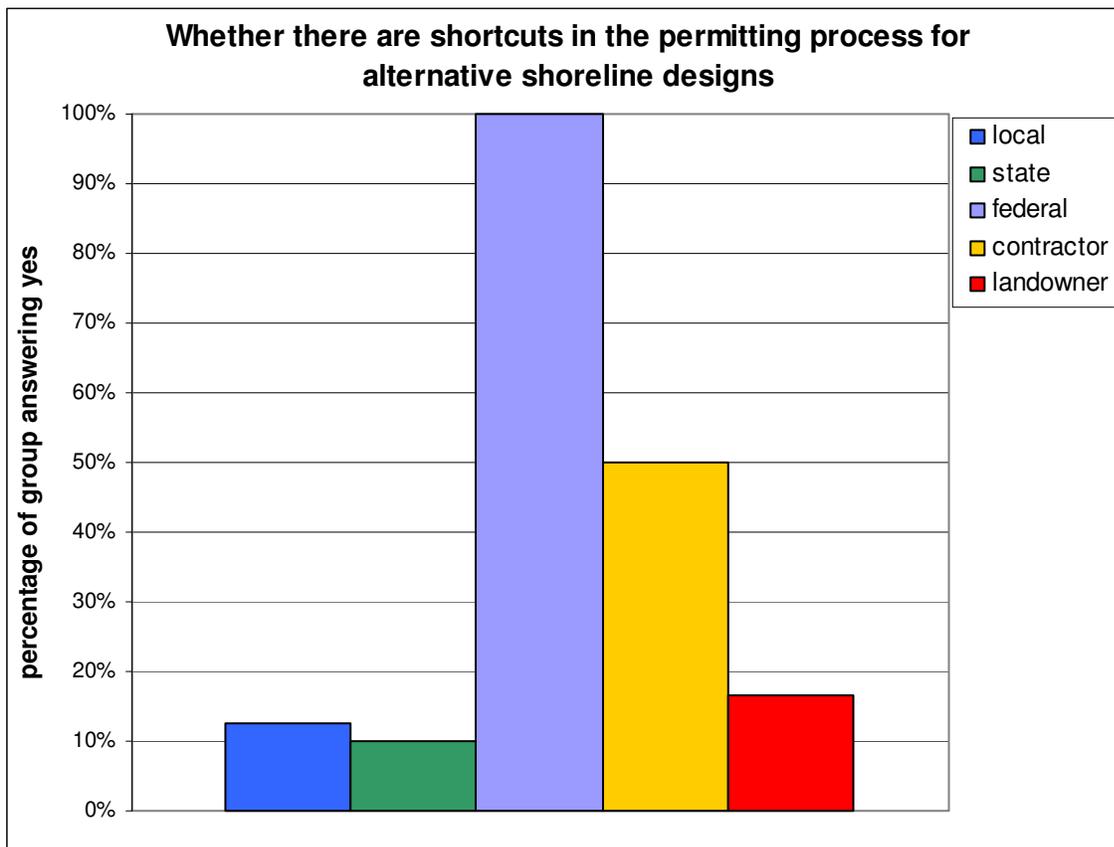


Figure 8: Shortcuts in the permitting process.

Recommendation

Streamlines and shortcuts in the permitting process were identified as top potential incentives for private landowners to implement eco-friendly shoreline designs.⁶ Increased interagency communication is recommended to increase consensus among permit issuers regarding existing streamlines and shortcuts in the permitting process. More communication between permit issuers and permit applicants regarding existing streamlines and shortcuts in the permitting process to permit applicants is recommended. In addition, permit issuers at all levels should strive to gain a better understanding of all aspects and stages of the permit process.

Is any alternative shoreline design information available for permit applicants?

The interviewed subjects independently communicated the following categorized responses as to their knowledge on whether there is any alternative shoreline design information available for permit applicants: none exists, Lake Washington Shoreline Protection Alternative Programmatic (SPAP), websites, the City of Seattle's *Living Shorelines* guidebook, professionals, and more information is needed. As shown in Figure 9, all permit applicants and all permit issuers, except federal permit issuers, communicated that no alternative shoreline design information is available for permit applicants. Permit issuers across all levels of government identified the SPAP as a source of alternative shoreline design information for permit applicants; however, no landowners identified the SPAP as a source of alternative shorelines information. Local and federal permit issuers as well the majority of contractors interviewed commented that websites contained information about alternative shorelines for permit applicants, however; no landowners identified websites as a source of alternative shoreline design information. The only subject subcategory to identify the City of Seattle's *Living Shorelines* guidebook as alternative shorelines information for applicants was local permit issuers. Local and state permit issuers as well as shoreline residents identified professionals as a source of alternative shoreline information; no federal permit issuers or contractors identified professionals as sources of alternative shoreline information. When asked if shoreline design information is available for permit applicants, state and federal permit issuers as well as contractors took the question one step further to suggest that more information is needed. Half of all landowners reported that there was no publicly available information on alternative shorelines, and instead relied on contractors and/or consultants for information.

⁶ Howell, R., Casad, G., Fries, D., Roberts, K., Russo, B., Wallis, A. 2007. *Wildlife-Friendly Shoreline Modifications on Lake Washington: Summary of Shoreline Property Owner Survey and Regulatory Interviews*. Environmental Management Keystone Project Final Report, Program on the Environment, University of Washington, Seattle, Washington.

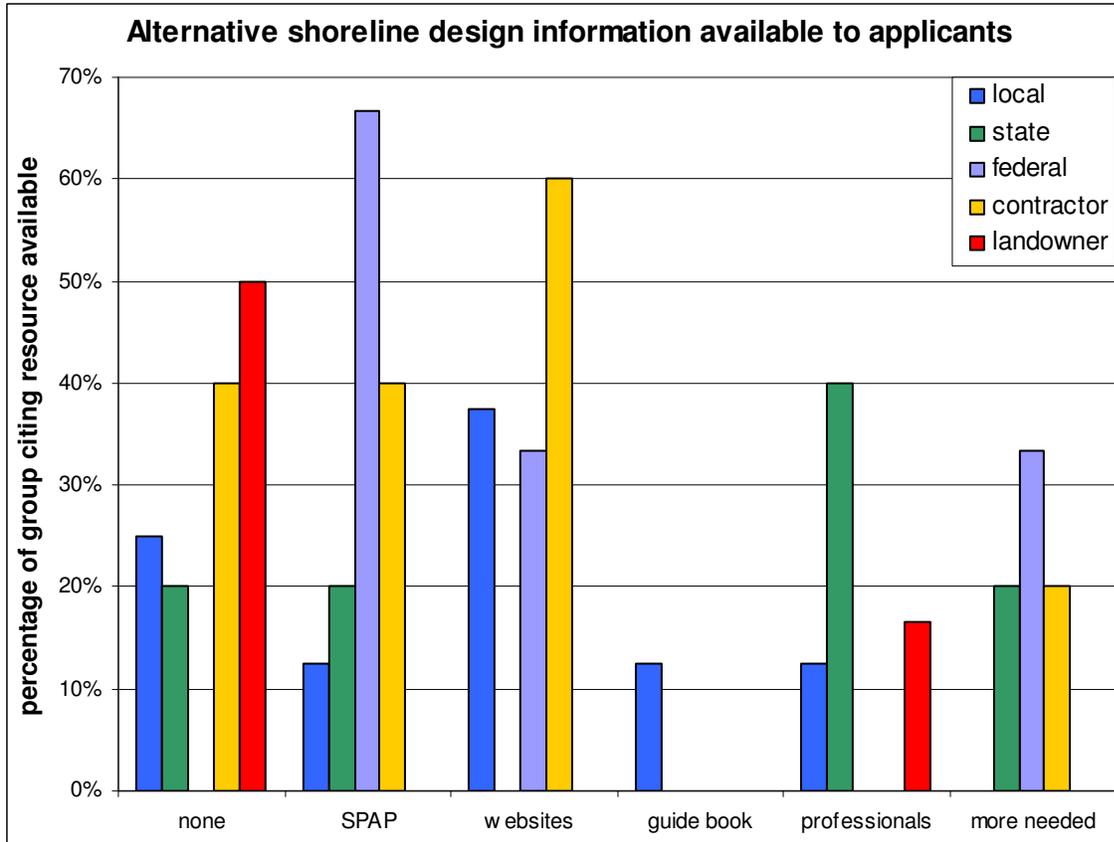


Figure 9: Availability of design information

Recommendations

From the responses received on permit process stakeholders' knowledge of existing and available alternative shoreline design information three major themes arose: (1) almost all stakeholders in the permitting process agree that there is a deficit in alternative shoreline design information for permit applicants; (2) the information that does exist is not recognized across all stakeholder subcategories; and (3) while the majority of landowners communicated that there is no alternative shoreline design information available for permit applicants, when an information source was identified 'professionals' was the only source communicated in responses. In order to encourage alternative shoreline designs on private property, alternative shoreline design information should be available to permit applicants. Also, greater promotion, education and outreach of alternative shoreline design information are needed for both existing and future information resources. Because shoreline residents identified 'professionals' as their primary source of alternative shoreline design information, it is recommended that greater education and encouragement of alternative shoreline design information is needed from contractors, consultants, and agency personnel in direct communication with landowners if greater consideration of alternative shoreline designs is desired. Agencies and municipalities interested in promoting alternative shoreline designs should consider holding training sessions on the best management practices regarding alternative shoreline design.

Are there any improvements that could be made in the permitting process?

Interview subjects independently identified and communicated six potential approaches for improving the existing permitting process. The six potential improvement approaches include: increasing permit handling staff; designating a point person to communicate information about and handle permit applications; increase permitting process training for permitting staff; increase permitting process education and guidance for permit applicants; streamline the permitting process; and create a centralized permitting process by allowing permit applicants to apply for all the required permits through one agency. As shown in Figure 10, all permitting process stakeholder groups suggested streamlining the permitting process as a potential approach to improving the permitting process. All stakeholder groups, excluding the federal agencies, communicated that greater education and guidance for permit applicants may improve the permitting process. State and local permit issuers expressed a need for increasing permit issuer staffing as a method for improving the permitting process. Among all stakeholders local permit issuers and landowners both communicated that designating a point person to communicate information about and handle permit applications have the potential to improve the permitting process. Creating a centralized process was a suggested approach to improving the permitting process by all permit applicants (a high percentage of contractors and some landowners); however, no permit issuers suggested this improvement approach.

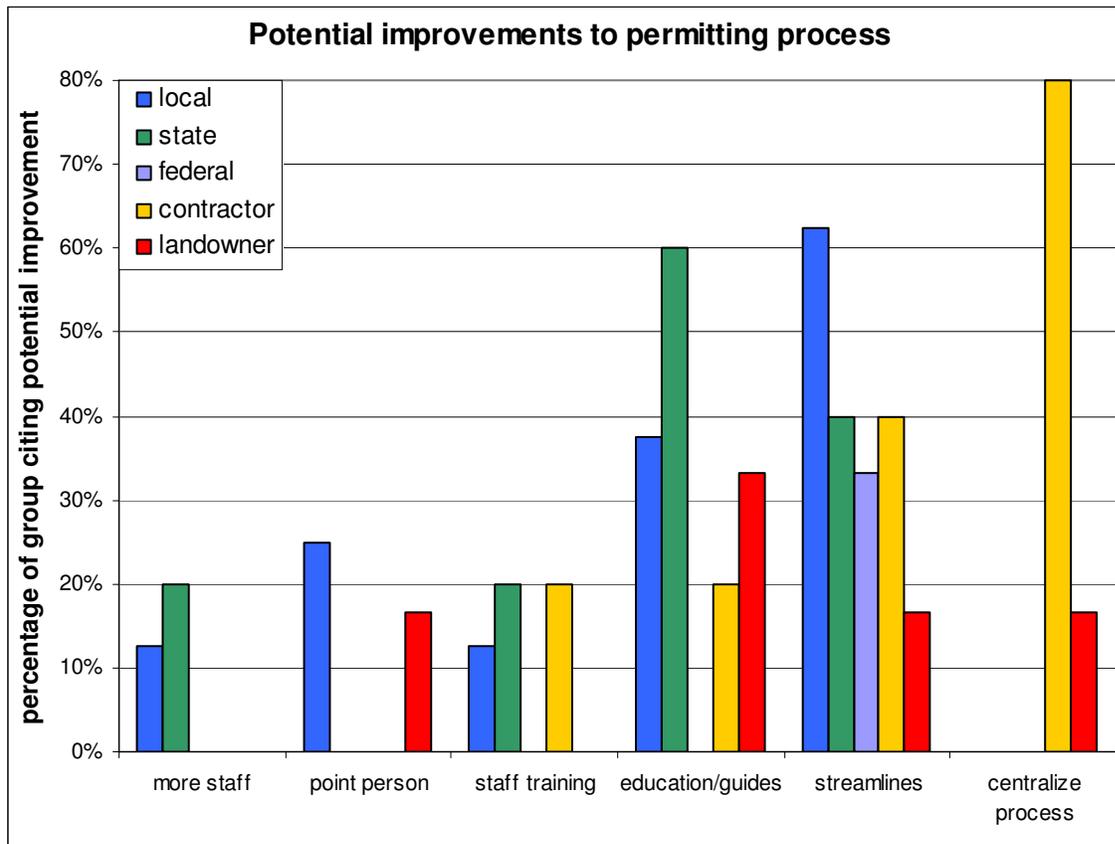


Figure 10: Potential improvements to the permitting process

Recommendations

Because streamlining the permitting process was identified by all stakeholders in the permitting process, it is recommended that permit issuing agencies collaborate to develop and communicate a streamlined permitting process for applicants. In streamlining the permitting process permit issuers should consider opportunities for permit applicants to obtain all necessary permit information and application materials from one permit issuing agency. Establishing a single permitting office (for example, a local planning and permitting office) adequately staffed and educated on the complete private property step-by-step shoreline permitting process and capable of communicating this process to applicants would potentially streamline the permitting process, as well as incorporate the most commonly communicated improvement suggestions from all interviewed stakeholder groups without initiating a complete re-organization of the current multi-jurisdictional permitting process to create a centralized agency.

How do people know they need a permit?

Nine categorized responses were independently derived and communicated by permit process stakeholders regarding how people knew they needed a permit to perform work on their shoreline. The nine categorized responses were: interviewed subjects were unclear and not sure; needing a permit is thought of as common knowledge; through public notice postings; people do not know they need a permit; people have been caught without a permit and then found out they needed one; through contractors; through agencies; through newsletters; and through neighbors reporting one another when permits are not obtained. The findings from this question are summarized in Figure 11. All stakeholder groups interviewed indicated that contractors inform people they need a permit. Over 80% of landowner responses suggested that needing a permit is common knowledge; however, only 40% of state permit agency responses, no federal or state permit issuers, nor contractors communicated that people know they need a permit through common knowledge. While all permit issuers and contractors indicated that people know they need a permit as a result of neighbors reporting one another for not obtaining permits, of the landowners surveyed, none of their responses indicated this as a reason why people know they need a permit. Permit issuer responses credited agencies as a source of informing people they need a permit; no permit applicant responses indicated that agencies were a way people knew they needed a permit. While all permit issuer responses to some degree indicated that people were informed they needed a permit through public notices, no permit applicant responses indicated this as a source. The majority of contractor responses identified contractors (themselves) as the major source of how people know they need a permit. Contractor responses also strongly indicated that people generally do not know they need a permit.

While all responses were highly variable among stakeholder groups, of all permit issuers, the state agencies were the only subgroup to align with all landowner response as to how people know they need a permit. The federal agencies were the only permit issuer subgroup to fully align with all contractor responses as to how people knew they needed permits. Local permit issuer agencies had varied responses from all permit applicant and contractor responses, except for their consensus on contractors as informers, as to how people know they need a permit.

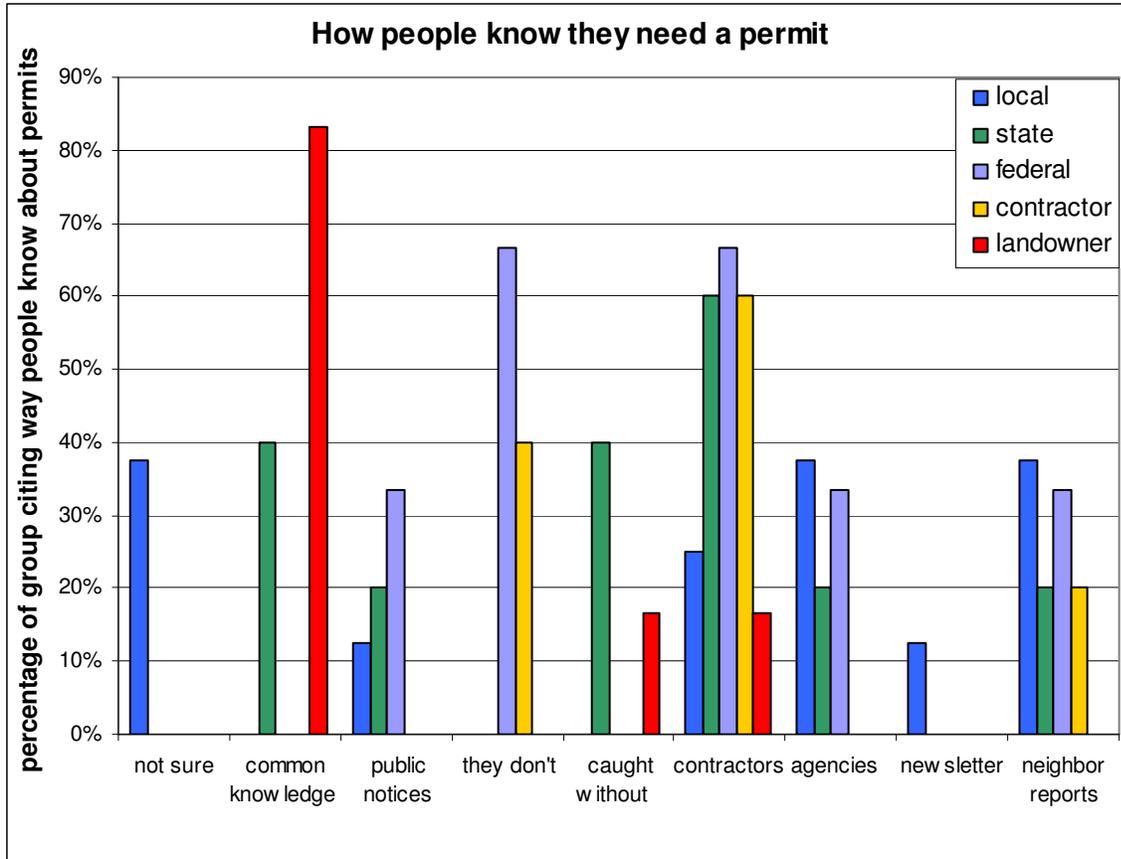


Figure 11: How people know they need a permit

Recommendations

There was high variability between how permit issuers and permit applicants think people know they need a permit to do work on private shorelines. While a strong majority of the shoreline resident responses indicated that needing a permit is common knowledge, very few permit issuers and no contractors agreed. Local permitting agencies responses to how people knew they needed people and responses of permit applicants were highly varied. Among permit issuers, state agencies’ responses were most closely aligned with private landowner responses; among permit issuers, federal agencies’ and contractor responses were most closely aligned. The only point of consensus among all stakeholder groups as to how people knew they needed a permit was that contractors are informers. If contractors are the only consensus point between all stakeholder groups as to how people know they need permits, it is recommended that agencies pursue communication with contractors when new opportunities or changes occur in the permitting process. Permit issuers may also consider pursuing opportunities to have a more comprehensive understanding of how permit processes are understood and communicated to permit applicants for improved communication and the most effective permit process education outreach programs.

What assistance and resources are available for permit applicants?

Four key resources were identified by the interviewees – agency websites, newsletter, telephone the agency, and the Office of Regulatory Assistance (ORA). The results show a clear perceived lack of

resources from the applicant’s viewpoint, as shown in Figure 12. Only 17% of landowners interviewed identified any assistance at all (ORA and agency websites). Contractors fared slightly better, with just fewer than half (40%) also identifying ORA and agency websites as resources. Clearly, no applicants believe that agencies provide proper assistance by phone. The permit issuers had a different viewpoint, generally identifying resources more often than applicants. A full 80% of state agency interviewees identified ORA as a resource. As ORA is a state entity, this is not surprising. That the local agencies did not identify ORA is also not surprising, as ORA mainly focuses on providing assistance with permits that are applicable statewide. However, it should be noted that ORA does give some information on standard local permitting processes.

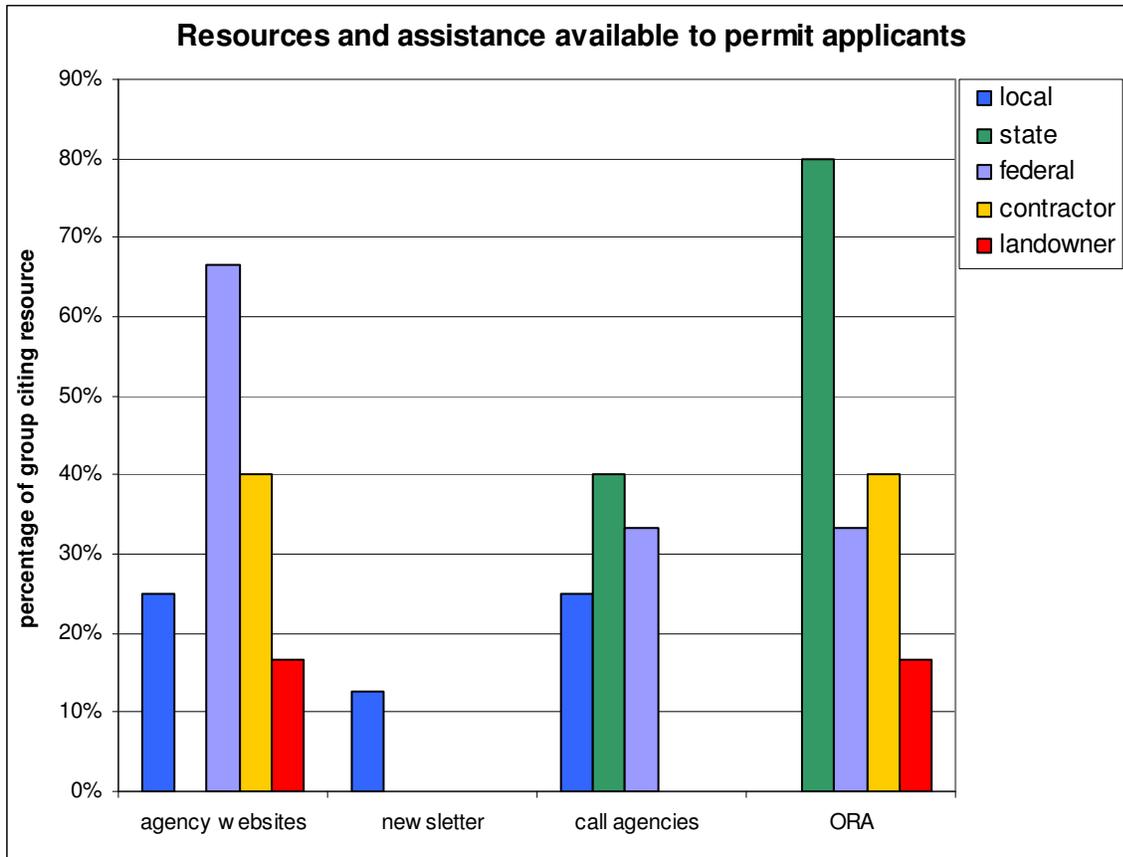


Figure 12: Resources and assistance for permit applicants.

Recommendations

Education and outreach is needed to inform landowners, contractors, and consultants about the existing resources available to them. Additionally, many interviewees, while identifying websites and phone services as resources, also conveyed a lack of organization and access from these sources. Agencies should strive to clarify the information on their websites and make navigation simple for the public citizen. Access to permit issuers via telephone should be expanded to provide much needed communication between applicant and issuer. This was identified as a source of frustration among applicants. Of course, the above recommendations are in essence staffing issues, which may be constrained by budgets. Many agencies are overworked and backlogged due to lack of staff; this was identified as a major bottleneck in the process in Figures 2 and 3.

[To landowners:] Does your property have an alternative shoreline design? [To contractors and consultants/designers:] Have you designed and/or constructed any alternative shoreline designs? Why or why not?

In Figure 13, the set of bars on the far left indicates the percentage of contractors and consultants who have designed alternative shorelines and the percentage of landowners that have an alternative shoreline. Given those answers, the remaining bars indicate reasons why contractors and consultants *have* designed alternative shorelines and reasons why landowners *have not* installed alternative shorelines. Since we sought out companies most of whom we knew were involved in alternative shoreline design and construction, 100% of them had experience with such designs. However, it is difficult to determine the reasons why they chose to do so. That only 20% of contractors identified agency influence as a driving force implies that there is a communication problem between contractors and permit issuers. This may be changing as our interviews indicated a strong trend among agencies towards requiring alternative shoreline design. Among landowners, the main reasons why they did not install an alternative shoreline on their property were loss of property and cost (50% each). Erosion proved to not be much of a factor, with only 17% identifying it as a barrier (Figure 13). Indeed, if alternative shorelines are designed properly on a site without extreme exposure, erosion is not an issue.

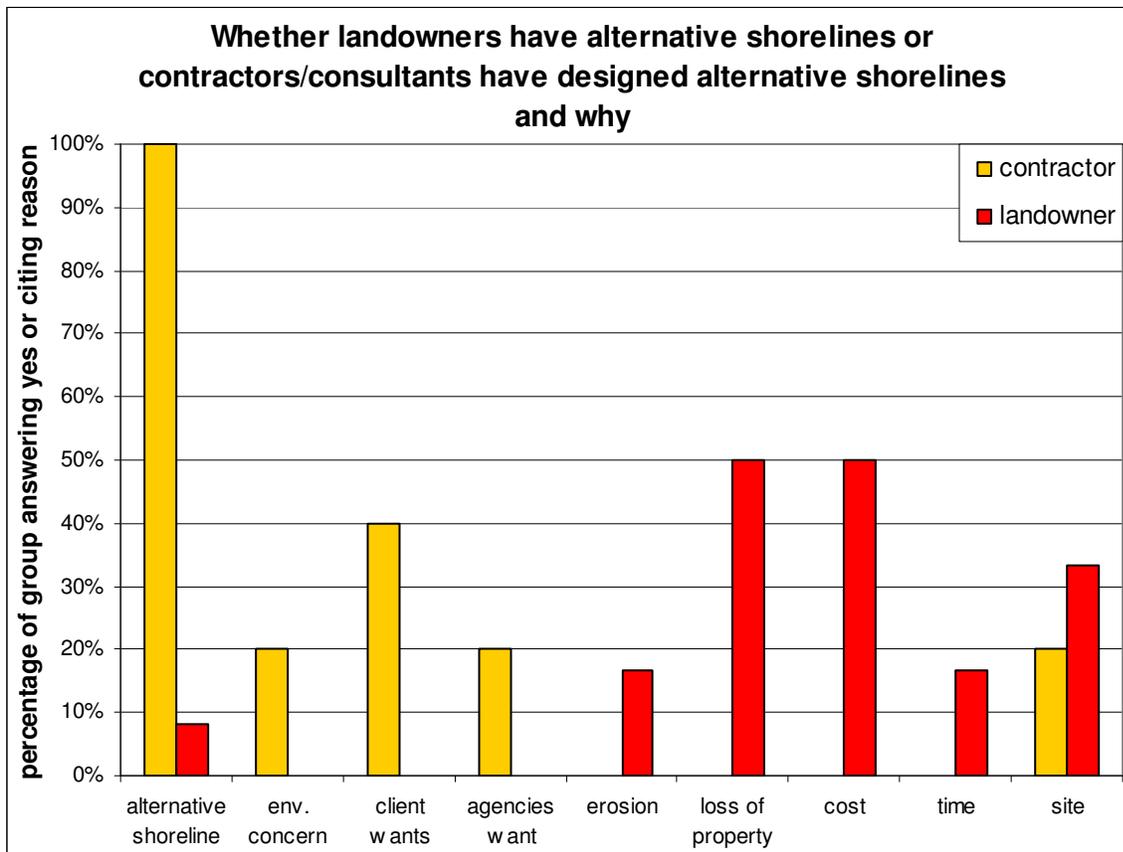


Figure 13: Participation in eco-friendly shoreline design.

Recommendations

Perhaps the biggest impediment to increasing the amount of soft shoreline on Lake Washington is the loss of property entailed in replacing a bulkhead with a beach. This is a contentious issue. In some cases, landowners are very wealthy and have 100 feet of land between their house and the water's edge, and could easily convert some property from lawn to beach. In other cases, the landowner's house and property is their major asset, and if the house is close to the water's edge, they may lose up to half of their lawn, with potential for decreased property value and loss of some functions the lawn provides. Needless to say, the property owners will do anything they have to protect their investment if they perceive its value as threatened. One option to alleviate this problem is to allow a certain amount of fill in the lake in order to minimize the loss of lawn on properties that are close to the water's edge. Currently, fill in the lake is regulated by the USACE. A change in USACE policy could stipulate a certain amount of fill for landowners installing an alternative shoreline. Some potential barriers to this are: determining exact site requirements and fill specifications that apply to all projects, as every site is unique; how to handle a situation where the landowner installing a beach is bordered by a neighbor with a bulkhead – there may not be a way to stabilize the fill to prevent erosion where the two properties abut. However, it would be advantageous to tackle these issues in order to remove one of the most significant bottlenecks to promoting soft shorelines.

What are the benefits of alternative shoreline designs?

Contractors unanimously noted the environmental and aquatic concerns as the benefits of alternative shorelines, but only 33% of landowners noted this (Figure 14). Additionally, 33% of landowners said there were no benefits of alternative shorelines at all. 60% of contractors and consultants found alternative shorelines to have aesthetic benefits. These results suggest a familiarity with alternative shorelines among contractor and consultants, understanding how they can benefit the ecological functions of the lake as well as additional benefits. The results also suggest a lack of familiarity with alternative shorelines among landowners, and a possible belief that alternative shorelines are a poor choice.

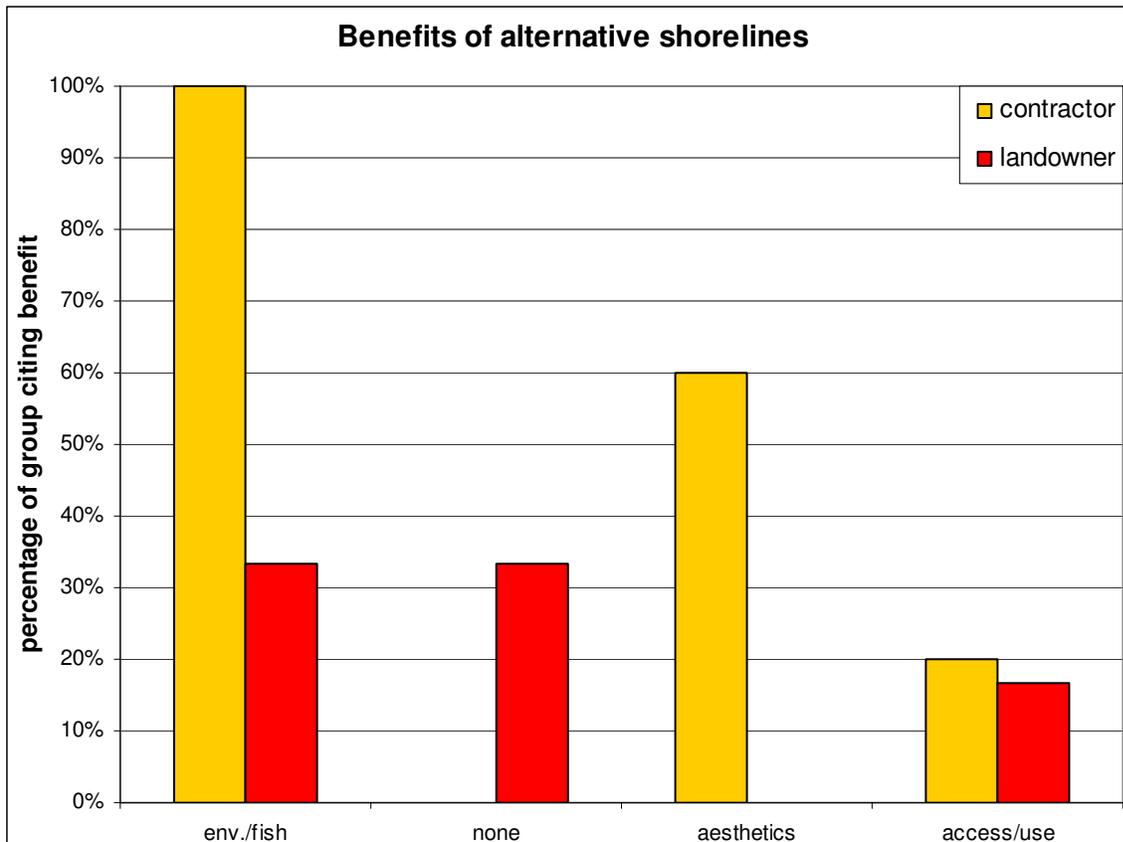


Figure 14: Benefits of eco-friendly shorelines.

Recommendations

Shoreline landowners need to be informed about alternative shorelines and their environmental benefits and given examples that show them how aesthetically pleasing they can be. The City of Seattle's Living Shorelines guidebook will provide this to landowners provided it is widely accessible. The guidebook is not overly technical or dry and provides educational information as well as design ideas and examples. Other jurisdictions around the lake should inquire about it's adaptation for their use.

How do the following factors affect the choice between traditional and alternative shoreline designs?

- **Effectiveness of shoreline design at controlling erosion**
- **Maintenance**
- **Cost**
- **Permitting**
- **Aesthetics**
- **Lake accessibility and use**

Figure 15 shows the various reasons why contractors and landowners thought alternative shorelines were a better design options. Surprisingly, even though no landowners identified aesthetics as a benefit

in Figure 14 above, when asked specifically about aesthetics as a possible benefit of alternative designs, 75% of landowners thought they were better than the traditional designs. A majority of landowners thought alternative designs provide better access to the lake, but the majority of contractors thought otherwise. There does appear to be a belief among landowners (83%) that alternative shorelines are worse than bulkheads at preventing erosion. There are also a significant percentage of all applicants who believe alternative shorelines are more costly and are harder to permit.

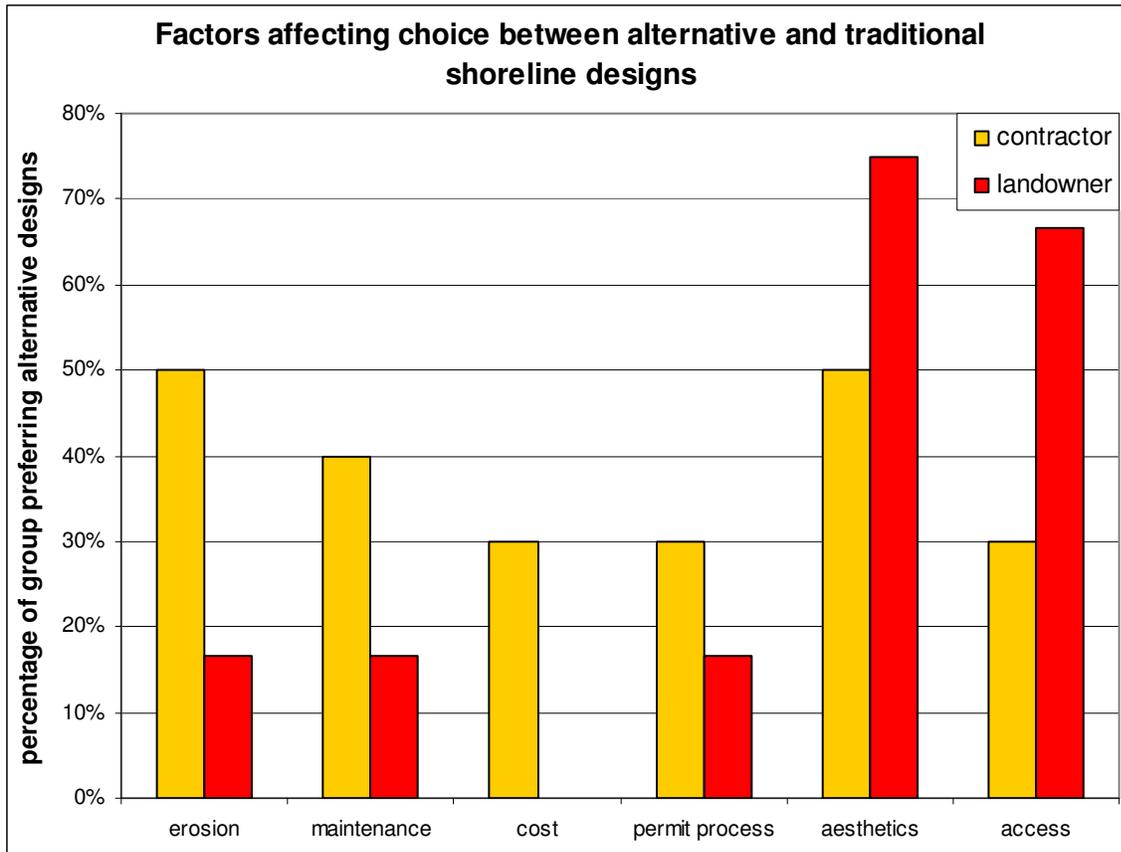


Figure 15: Factors affecting the choice between alternative and traditional shoreline designs.

Recommendations

Once again, landowners need to be educated and informed about alternative shoreline design – when designed correctly, it should provide adequate protection against erosion. With the introduction of the USACE programmatic (SPAP), permitting will be streamlined for most alternative designs, but since every site is unique and may not be able to fully meet the requirements for the programmatic, we would also like to see preferential treatment under Individual Permits given to those cases where an alternative design is implemented yet is unable to fall under the programmatic’s umbrella. An even better way to streamline the permitting of alternative designs would be for permitting agencies at the federal, state, and local levels to coordinate so as to have one set of guidelines for alternative designs so that if one agency approves the design, it will be automatically approved at the other levels. This will take time and effort to accomplish as each agency is bound by different laws and regulations, but is certainly feasible and would result in a significant reduction in time and hassle to the applicant, making alternative designs preferable to traditional designs.

Deliverables

To accomplish the goals and objective of our project we developed several deliverables. In addition to the policy analysis included in this report, we created educational resources for permit applicants and issuers, and we also presented our findings at the WRIA 8 Shoreline Issue Meeting, Spring Shoreline Planners Meeting in April 2008 and at the University of Washington Environmental Management Symposium in May 2008.

Educational Resources

One of the key findings from our analysis is that educational resources are needed for all stakeholders in the permitting process, including permit issuers and applicants. In response, our team developed a schematic of the step-by-step permitting process for private landowners interested in implementing an eco-friendly shoreline designs. The schematic is also a helpful tool for permit issuers to gain a better understanding about how their particular agency fits into the entire permitting process. As a separate deliverable, our team compiled and will deliver informational packets to permit issuers involved in the shoreline permitting process for Lake Washington. The packets were intended to provide educational resources to enhance permit issuers' understanding of the step-by-step permitting process navigated by applicants, as well as to inform them of the most important findings and recommendations from our interviews and policy analysis.

The Schematic

The Governor's Office of Regulatory Assistance (ORA) provides schematics on individual permits, but a schematic of the entire process for shoreline permits did not previously exist. We produced a schematic that provides a broad overview of the shoreline permitting process for construction and restoration work along Lake Washington residential shorelines (Figure 16). The schematic underwent many iterations of review by the ORA, permit issuers at all levels, contractors, and consultants to ensure the process is accurately represented. Agencies have expressed great interest in this product as a printed and online resource they can provide to the public. For these purposes, a one-page guide was written to explain how to use the schematic (see text box). The schematic and its accompanying text are also included in the City of Seattle's *Living Shorelines* guidebook and in the informational packets for permit issuers.

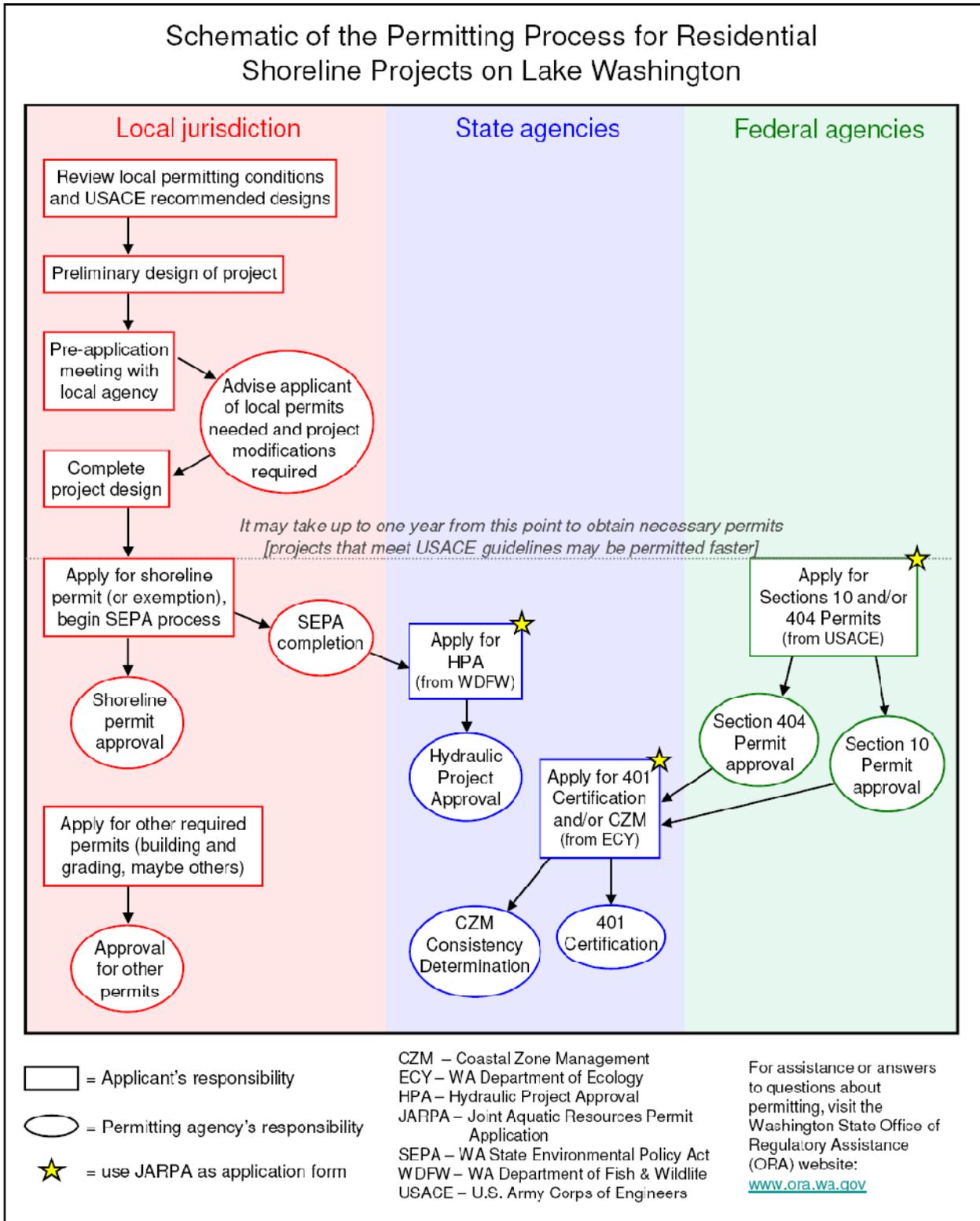


Figure 16: Schematic of the permitting process for Lake Washington residential shoreline projects

Lake Washington Shoreline Permitting Process Schematic

Schematic Design: This schematic provides a broad overview of the shoreline permitting process for construction and restoration work along the Lake Washington shoreline of private residences. The permitting process for shoreline work is not straightforward, and it can be difficult to determine what information and permits are required. This often leads homeowners to hire consultants or contractors to take care of the permitting for them. The involvement of professionals is helpful, especially in providing the required plans and evaluations required. However, it is still important for homeowners to understand the overall process and be involved in the design and permitting of their shoreline project. Homeowner communication with the permitting agencies often facilitates a faster, smoother permitting process, which saves time and money.

Permitting Process: The shoreline permitting process involves federal, state, and local agencies. Since there are many local jurisdictions around Lake Washington, the local permitting process varies depending on the location of the residence. Some of the state and federal permits require prior approval of other permits or certifications. In addition, the projects proposed by residents and/or their contractors or consultants will vary. For these reasons, there is no single step-by-step process of obtaining the required permits for a shoreline project. While the schematic does not walk applicants through every permutation of the permitting process, it provides a general overview of the major permits needed, the agencies issuing the permits, and the time required. Homeowners can use the schematic as a guide because it directs them to the appropriate agencies and informs them what the agencies expect and require. This schematic is a general overview of the permitting process required for shoreline construction and restoration projects, but it does not include every single form, evaluation, and permit that is required for a specific project. It provides enough guidance to ensure that the appropriate agencies will be contacted. Discussions between the applicant and the agencies should fill in the details.

The project design phase, which should include a pre-application meeting with the local jurisdiction planning office, provides the best opportunity for applicants to increase the speed and ease of the overall permitting process. Agencies at all levels of government are required to issue permits based on existing laws. For instance, the U.S. Army Corps of Engineers (USACE) must consider how a proposed project will affect habitat for juvenile Chinook salmon in Lake Washington because they are protected under the Endangered Species Act. Local jurisdictions look to their Shoreline Master Plans, which establish regulations to protect the health and usability of water bodies. Since each agency is responsible to carry out related but different regulations, it is important for applicants to work with agencies to develop a shoreline project design that meets the needs of the residents and can be permitted by the agencies. Agencies are generally able to approve more eco-friendly shoreline projects faster and with fewer revisions than more traditional projects. Nevertheless, the process can be slow; to avoid hassle and expense, the applicant should start the permitting process early to help ensure that the necessary permits and approvals are obtained in time for work to occur within the approved work window. Shoreline work is allowed during work windows that are set to minimize disturbance to wildlife. Generally work is done during the summer, but the dates of work windows can vary by the type of work being done. The USACE permits often take the longest amount of time to be approved (up to one year), but this time can be significantly shortened by proposing a shoreline design that fits USACE guidelines. Discussions with the local permitting agency can help applicants understand the shoreline design principles that are encouraged by all of the agencies.

Directions for Using the Schematic: To use the schematic as a guide to the permitting process, first review it as a whole, using the key to understand the significance of the symbols and acronyms. Rectangles show tasks for which applicants are responsible, while ovals show what the agencies will do. Arrows point from an activity that must be completed before another activity can begin; note that some of these chains involve information passing back and forth between applicants and agencies. Along the way, agencies will inform the applicant of additional information needed and which permits are required for the specific project proposed. Keeping the lines of communication open between the applicant and the agencies will help speed things along.

Informational Packets for Permit Issuers

Because our study produced key findings and recommendations relevant to permit issuers, we will deliver informational packets to Lake Washington shoreline project permit issuers. These packets will contain a cover letter, an executive summary of our study including key findings and recommendations, and a copy of our schematic. We hope that the delivery of these informational packets will encourage permit agencies to consider our recommendations as well as come up with their own ideas on how to improve the permitting process. In addition, the packets will guide agency personnel to our website, where they can download our full report, obtain an electronic copy of the schematic so they can print it and provide it to permit applicants, and find links to other relevant resources.

Policy Analysis

Problem Statement

Over 70% of Lake Washington's shoreline is armored by bulkheads and riprap, resulting in a lack of adequate nearshore habitat for rearing juvenile Puget Sound Chinook salmon, which are listed as threatened under the U.S. Endangered Species Act.

Policy Objectives

The purpose of this analysis is to evaluate which policy options are most effective at reaching the following objective: To increase suitable nearshore habitat for juvenile salmon in Lake Washington by replacing private residential hardened shorelines with bio-engineered eco-friendly shorelines.

Policy Options

Through reviews of the existing statutory and regulatory requirements and numerous structured stakeholder interviews, we have identified nine specific policy options that could be implemented to increase eco-friendly shoreline projects on Lake Washington. The policy options can be placed into the following four categories:

1. Status Quo/Increased Enforcement: No significant changes are made, or there are additional efforts to monitor and enforce the existing code.
2. Education, Outreach, and Collaboration: Efforts are directed to educate shoreline homeowners or shoreline permit reviewers on the technology, design and permitting process for eco-friendly shoreline projects.
3. Financial Incentives: Shoreline landowners can participate in a cost-share program or fee waiver program to help recover costs from eco-friendly shoreline projects.
4. Changes in code/Streamline of Environmental Review: Various policy options that would make it easier to complete the shoreline permit process, such as streamlining, building code tradeoffs, and code consistency.

Policy Criteria

Each policy options is evaluated on criteria that addresses how cost-effective and politically viable each policy option is. The following criteria are used to evaluate the policy options that we propose:

- Increase eco-friendly shorelines: Will the policy result in an increase in eco-friendly shoreline renovations on Lake Washington?
- Program implementation costs: Will the policy require additional funding for staffing, outreach, etc.? Compared to the environmental effectiveness of the policy option, is it cost-effective?
- Adequate environmental review: Does the policy promote adequate environmental review? Could there be unforeseen loopholes? Is the environmental review so thorough, stringent and costly that homeowners are dissuaded from shoreline renovation or complete the project without a permit? This is measured in minimal, stringent, and balanced. A balanced environmental review is the most desirable.
- Political viability and equitability: Will the policy require additional legislation at the state or municipal level? Is this likely to pass given budgetary and political considerations? Is this policy fair to both shoreline residents and the tax paying public?

Policy Analysis

In the following section we evaluate the benefits and drawbacks of the policy options based on the criteria we have established. This analysis is based on our current understanding of the statutes and regulations governing shorelines on Lake Washington, as well as from the 27 structured interviews we conducted with various stakeholders (see Methods and Interview Results sections). The analysis is by no means definitive, and is not intended to be overly specific, but it gives a sense of which policy options are likely to be most feasible and effective at achieving our policy objective. The bureaucratic, political, and ecological conditions vary across Lake Washington, so some generalizations had to be made. Table 1 offers more specific assessments of each policy option weighted by each of the policy criteria.

Status quo

- The regulatory system in place with the new programmatic guidelines issued by USACE and NOAA.
 - *Benefits:* The status quo policy is politically feasible, and is relatively effective at ensuring that new hardened shorelines are not installed.
 - *Drawbacks:* Shoreline landowners may be dissuaded from pursuing renovation of shoreline structures because the permitting process is too stringent and takes too long. Landowners may perceive that eco-friendly shoreline costs are imperative. Monitoring and enforcement are currently inadequate, as our interviews with landowners, contractors, and consultants indicated that illegal (non-permitted) work is common. A permitting process that is too complicated and prescriptive can have inadvertent consequences of contributing to the resistance of landowners and contractors to even participating in the permitting process.
- Increase enforcement of existing code: Local jurisdictions increase patrol of shorelines and penalties are more substantial.
 - *Benefits:* An unknown number of unpermitted lakeshore renovations would be discovered and mitigated for. This policy option would catch projects that would never be allowed under code, and are probably the most damaging to the environment.
 - *Drawbacks:* This policy would not address the problem of why the permitting process is costly and timely, and may require additional staff and resources that may not be available to agencies. It could also contribute to an adversarial relationship between regulatory agencies and many landowners, contractors, and consultants. Resistance to compliance, anger, and mistrust could be unintended consequences of this policy option.

Education, Outreach and Collaboration

- Homeowner/contractor education: Local, state, and federal agencies would provide more technical and non-technical information on the benefits and costs of eco-friendly shorelines, examples of eco-friendly shoreline projects, and sample eco-friendly shoreline designs to homeowners and contractors.
 - *Benefits:* This policy would address one of the major problems leading to reduced effectiveness of the current regulatory system. It would improve the understanding of the benefits of eco-friendly shoreline designs and may encourage landowners to choose to implement eco-friendly shorelines, thus increasing juvenile salmon habitat. In addition, this outreach would show landowners that eco-friendly shorelines provide additional benefits, such as improved safety and access, increased wildlife habitat, and more aesthetic appeal. By educating contractors on the technical requirements needed

- for eco-friendly shorelines, the permitting process may be improved without forgoing adequate environmental review.
- *Drawbacks:* Environmental review may still be perceived as too stringent and costly by homeowners. Educating all lakeshore homeowners across all Lake Washington jurisdictions would require a coordinated social marketing effort, which would require funding and interagency coordination.
 - **Agency Education and Collaboration:** Planners and permit reviewers at the local, state, and federal level would be educated on eco-friendly shoreline designs and the overall permitting process from the local to the state and federal level. Permit issuing agencies at all levels would also communicate with other on a regular, ongoing basis to share ideas and facilitate greater cohesion among the permitting agencies.
 - *Benefits:* This policy would promote consistency among permit reviewers and ensure that agencies understand the requirements of all of the agencies involved and what the entire permitting process entails, allowing them to better advise permit applicants about shoreline designs and facilitate a smoother permitting process. This policy would be politically viable and would not be too expensive to implement. This process would maintain a high level environmental review.
 - *Drawbacks:* This would require cross agency collaboration between the local, state, and federal levels, which can be difficult to orchestrate. Environmental review may still be perceived as too stringent and costly.

Financial Incentives

- **Public Subsidy:** Tax incentives or grants for homeowners choosing to implement eco-friendly shorelines. Current programs such as the Public Benefit Rating System could be enhanced to incorporate shoreline restoration.
 - *Benefits:* Landowners would be more willing to implement eco-friendly designs if a tax break or grant covered some portion of the financial cost of incurred. Environmental review would be very substantial since public funding would be used.
 - *Drawbacks:* This may be politically infeasible as it is seen as unfair to give tax breaks or financial subsidies to wealthy shoreline landowners. Also, in order to make a difference in the number of eco-friendly shorelines implemented, the amount of the tax break or grant would have to be significant enough to be an incentive for people who would otherwise not choose eco-friendly shoreline design options.
- **Fee Waiver or Reduction:** Applicants who implement eco-friendly shoreline designs would not have to pay permit application fees at the local, state or federal levels. A related financial incentive would be creating a wider variety of conditions under which shoreline project applications would be eligible for Biological Evaluation exemption under the USACE/NOAA Lake Washington Shoreline Protection Alternatives Programmatic (SPAP).
 - *Benefits:* A waiver or reduction in fees for application review may provide a small incentive for applicants to implement eco-friendly shoreline designs. This policy would not be politically contentious, and should not greatly impact the revenue stream for local municipalities. Applicants may be more willing to ask for consultation from local planners if the review fee is not cost-prohibitive. Biological Evaluations are very expensive (on the order of \$10,000), so waiving the requirement for them could be a significant financial incentive for landowners to choose eco-friendly shoreline designs. Currently, the SPAP allows the Biological Evaluation to be waived for only a few specific project designs.

- *Drawbacks:* Few interviewees identified this as an important issue, and those that did focused on the large municipalities such as Seattle and Bellevue. The overall impact of this policy would have a very marginal impact on the ease of the permitting process unless it was combined with another policy. Landowners would have to be aware of the financial incentives available in order for them to be an effective encouragement for eco-friendly shoreline implementation.

Streamline/Changes in Code

- Additional Permit Exemptions for eco-friendly shoreline designs: In consultation with state and federal agencies, local agencies would create programmatic similar to the SPAP issued by USACE in December 2007. If certain eco-friendly shoreline criteria were met in the initial designs, then the review of the project application would be streamlined.
 - *Benefits:* This policy may greatly reduce permitting time and provide common eco-friendly shoreline templates that would be consistent throughout Lake Washington. Programmatic could be included in the Shoreline Master Plan updates that are currently taking place.
 - *Drawbacks:* Local jurisdictions and state agencies may have different priorities. If a programmatic is too prescriptive, contractors may decide to apply for an individual permit, regardless of the time and costs it takes for approval. On the other hand, if a programmatic is too general, it may create loopholes for shoreline projects that are not truly eco-friendly.
- Local Code Consistency: Require that shoreline codes for Lake Washington municipalities are consistent with each other and with state and federal standards in eco-friendly shoreline design requirements and permit application processes. This policy would also require that all municipalities would accept a standardized permit application such as the JARPA or a modified JARPA.
 - *Benefits:* Consistent use of the JARPA would mean that each agency receives the same information at the same time, facilitating better coordination among the involved agencies and the creating the opportunity for a more streamlined permit process. Additionally, requiring that there is consistency among all Lake Washington municipalities regarding what construction is permitted may allow for long-term monitoring of the environmental effectiveness of eco-friendly shorelines.
 - *Drawbacks:* Each municipality has a Shoreline Master Plan and other building codes that are consistent with political and ecological conditions unique to each geographic region. Different municipalities may want to require more thorough permit review process because they have the staffing, technical resources, and mandates to do so. Requiring a one-size-fits-all approach may not be the most appropriate.
- Tradeoffs or Flexibility in Design: If landowners implement eco-friendly shorelines plans, certain other code requirements such as building setback would be less stringent.
 - *Benefits:* Landowners or contractors may be given an incentive to implement an eco-friendly shoreline project on construction or renovation sites in which they had not originally planned to do so.
 - *Drawbacks:* Allowing flexibility in other building codes may compromise environmental or safety standards that may not be completely mitigated by installing an eco-friendly shoreline.
- Change Fill Restrictions: Allow eco-friendly shoreline projects to place more shoreline fill than is currently allowed.

- *Benefits:* This would allow eco-friendly shoreline restoration projects on sites that have a very steep gradient and would require more fill than is currently allowed. Allowing more fill may eliminate the need to refill the site as regularly.
- *Drawbacks:* Fill standards were developed for a reason, and may cause unforeseen environmental impacts.

Table 1: Policy analysis matrix.

			POLICY CRITERIA			
			Environmental Effectiveness	Program Cost	Viability	Environmental Review
POLICY OPTIONS	Status Quo	Status Quo	Low	Inexpensive to implement new RGP guidelines.	Easy: Decisions by NOAA and ACE already approved.	Stringent: Extensive Review on all levels.
		Enforcement	Low/Medium	Moderately expensive: More Staff Time at Local Level Required	Somewhat difficult politically. May be seen as unfair to lakeshore landowners	Stringent
	Education/ Outreach	Landowner/ Contractor education	Medium/High	Moderate	Easy: Need program funding.	Would improve permit application process while maintaining adequate review.
		Agency Education	Medium	Moderate	Moderate: Need program funding and agency collaboration.	Would improve permit application process while maintaining adequate review.
	Financial Incentives	Cost Share Program/ Matching Fund	High	Very expensive	Very difficult politically. Seen as unfair to offer tax cuts to very wealthy	Stringent: Projects would be thoroughly reviewed to get public funding.
		Fee Waiver/Fee Reduction	Low	Moderately Expensive: Reduced revenue	Easy: Local jurisdictions drop fee based on basic criteria.	Stringent: Project would be thoroughly reviewed to get fee waived.
	Code Changes/Streamline Permitting Process	Additional Streamline	Medium: Depends on whether designs fit within the designated exemptions, or will be used as loopholes.	Inexpensive	Difficult: Agencies want to maintain oversight.	Minimal: Streamlining would reduce review but may allow unforeseen loopholes.
		Building Code Tradeoffs	Medium	Inexpensive	Moderate: Depends on local jurisdiction.	Balanced/Stringent: Planners may be more critical to allow tradeoffs.
		Change Fill Restrictions	Medium	Inexpensive	Difficult: WDFW and ACE may not approve of changes.	N/A
		Local Code Consistency	Medium	Inexpensive	Difficult: Agencies want to maintain oversight.	Balanced: Similar protocols would allow better understanding at all levels.

Recommendations

Based on the relative benefits and drawbacks of the previously explained policies, we believe three policy options are best suited to meet the outlined policy objectives:

- Promote collaboration and coordination between the local, state and federal government agencies that regulate shoreline construction on Lake Washington.
- Streamline the permit process for eco-friendly shoreline designs at the state and/or local level.
- Increase education and outreach efforts to Lake Washington property owners and shoreline contractors.

We feel these three specific policy options will work synergistically to help alleviate the current permitting lag in the regulatory system, and will help make landowners more aware of the multiple benefits of eco-friendly shorelines. The recommended policy options work in concert with each other, and are not meant to stand-alone. In the following section we explain how our content analysis' key findings give rationale for the recommended policy option, provide hypothetical processes for implementing the policies, as well as outline the various inputs, outputs and possible outcomes that could be measured.

Interagency Collaboration and Coordination

Rationale

In our interviews, a common theme among all respondent was the lack of overall coordination among agencies that have regulatory oversight over Lake Washington shorelines. Many agencies had knowledge about their own particular mandates, but had little understanding of the process and mandates of the other agencies involved in the permitting process. As our findings show, there is tremendous inconsistency among permit issuers regarding their understanding of the effectiveness of eco-friendly shorelines, whether or not they streamline the permitting process, and what resources are available for landowners who are interested in eco-friendly shorelines. Perhaps the most obvious need is a working definition of what an eco-friendly shoreline is.

Sixty percent of permit applicants thought that permit reviewers were not as familiar with the specific permitting process associated with shorelines (as opposed to other land use permits) as necessary for timely review, and even less familiar with eco-friendly shoreline designs. At least one interviewee from each subgroup except the federal agencies cited inadequate interagency coordination as a bottleneck.

This policy recommendation would encourage local jurisdictions to be more consistent with one another, and would prepare permit applicants for subsequent review at the State and Federal level.

Process

In order to promote collaboration and coordination among permit agencies, ECY could require that local jurisdictions include a section that defines eco-friendly shorelines and associated best management practices in their SMP updates. The SMP update meetings are an ideal environment in which to generate discussion between agencies. In addition, WRIA 8 could continue to coordinate workshops and training sessions regarding best management practices. However, WRIA 8 would need additional

resources to support a more robust agency education and coordination program, especially in the early stages of implementation.

Inputs, Outputs and Outcomes

The inputs for this policy would be additional staff hours allocated to this program, and/or associated program implementation costs. Outputs would be measured by the number of workshops or training sessions held, as well as the number of local jurisdictions with consistent eco-friendly shoreline provisions in their SMP updates and local code. As with all policy options, the outcomes would be increased nearshore habitat for juvenile salmon.

Permit Streamline

Rationale

The stakeholder interviews revealed that permit applicants commonly complain that the permitting process is confusing and requires unnecessarily large amounts of time and money due to redundant environmental reviews. The majority of permit issuers reported that the review chain is a bottleneck in the permitting process, characterized by permit applications not receiving review until the applicant has received a permit or certification from another agency (referred to earlier as the review chain). A related issue, insufficient interagency coordination, was indicated as a bottleneck in the permitting process by some members of every stakeholder group except federal permit issuers. Design revisions were reported as a bottleneck in the process by some local and state permit issuers as well. While all federal permit issuers interviewed reported that there is a shortcut in the permitting process for eco-friendly shorelines (referring to the Lake Washington Shoreline Protection Alternatives Programmatic (SPAP) in place starting December 2007), few of the local and state permit issuers interviewed agreed. Half of the contractors and consultants group said there were shortcuts, and few of the private landowners agreed. More than half of the permit issuers interviewed suggested streamlining the permitting process when asked what improvements they would like to see in the permitting process. All of the contractors and consultants suggested either streamlining the process or centralizing it so that one agency would issue all necessary project permits. While the latter suggestion is not feasible, streamlining the permitting process is a popular idea among all stakeholder groups. It should be noted that the interviewees independently suggested streamlining.

Streamlining the permitting process could save time and money for permit applicants and issuers. Applicants may be exempt from certain environmental evaluations for which they are currently responsible, often costing more than \$10,000 in consultation fees. This would leave landowners with greater financial resources to dedicate to shoreline restoration projects. The time savings to applicants would increase their satisfaction with the permitting process. Meanwhile, environmental review would not be diminished and may actually improve due to an increase in the consistency of eco-friendly project criteria between federal, state, and local jurisdictions around Lake Washington.

It is important to carefully consider the standards for projects eligible for a streamlined permitting process. They should ensure that the legal responsibilities of the agencies involved are fulfilled. They should not be so general that loopholes are created, but not so prescriptive as to be impossible to implement for a large fraction of shoreline properties. The goal is to increase eco-friendly shorelines around Lake Washington, and this will only happen if private landowners and their hired professionals are able to design eco-friendly shoreline projects that are satisfactory (affordable and pleasing) to the

landowners and will be permitted by all of the agencies involved. An agreement between the permit issuing agencies at all levels would go a long way to ensuring that the permitting process itself does not constitute a barrier to private landowners implementing eco-friendly shorelines.

Process

Local agencies would work with state (WDFW and ECY) and federal (USACE and NOAA) agencies to create a programmatic similar to the SPAP. A set of guidelines for eco-friendly shoreline designs would be provided, and project applications to the local agency adhering to these guidelines would be granted shortcuts in the permitting process at the state and federal levels. One way this might be implemented is for the local permit agencies to submit their guidelines as an application to the state and federal agencies for review. If the guidelines meet the requirements for shoreline projects at the state and federal level, the state and federal agencies could pre-approve or provide shortcuts to all projects that fall under the local guidelines. The shortcuts would have to be agreed upon by the agencies, but could include waivers for some environmental reviews and expedited permit application reviews. The state and federal agencies could review the programmatic on a regular basis, and work with the local agencies to recommend changes in the programmatic as necessary.

Inputs, Outputs and Outcomes

Streamlining the permitting process for eco-friendly shoreline projects on Lake Washington would require a serious commitment from USACE, NOAA, WDFD, ECY, and the local permit issuers. It is possible for some local permit agencies to participate while others choose not to, but the state and federal agencies would have to be on board to make the efforts worthwhile. The resources required from the agencies involved would primarily be work hours; the time commitment would depend on how easily the group can come to an agreement on guidelines for eco-friendly shoreline designs and determine exactly how the streamlined permitting process would work. The outputs of this policy would include agreements between local, state, and federal permitting agencies, guidelines for eco-friendly shoreline designs, and plans for how to process the applications that fit under the guidelines. It is a daunting task to develop a new programmatic, but as we found in this study; the status quo is not producing many eco-friendly shoreline projects. A streamlined permitting process, combined with education and outreach aimed at Lake Washington landowners, is more likely to produce the environmental outcome of increased nearshore habitat for juvenile salmon.

Outreach and Education to Landowners/Applicants

Rationale

A lack of knowledge among landowners about eco-friendly shorelines and shoreline permitting processes was identified in our study. In addition, a lack of resources on eco-friendly shoreline designs and shoreline permitting was identified.

Eco-friendly shorelines are not being implemented as frequently as traditional shorelines simply because landowners are not demanding them. Contributing rationale for this occurrence may include a lack of knowledge and/or misconception on:

- what eco-friendly shorelines are
- why eco-friendly shorelines are necessary for supporting lake ecological processes
- eco-friendly shorelines and their ability to protect the shoreline from erosion, and the desire to stick with what has traditionally “worked” on their shoreline.

This inertia is difficult to reverse; it requires a change in landowners' attitudes about their shorelines.

The complex nature of the permitting process has led landowners to rely on their contractors and consultants to aid them through the process. This has resulted in contractors and consultants playing a heavy hand in what kind of shoreline designs are implemented. While some contractors and consultants have encouraged eco-friendly design, not all have yet embraced it. Landowners cannot be expected to handle the technical details of their shoreline design, a basic knowledge of eco-friendly shorelines and their benefits would empower them to request these designs from their contractors.

While permit issuers should heavily discourage traditional (hardened design), this approach promotes negative interactions with permit issuers, having long-term negative effects, and may reduce the intended environmental outcome. It is anticipated that the greatest change in the types of shoreline designs being implemented will come when landowners are informed about what is best for ecological function, health, and personal enjoyment of the lake. Under these conditions it is expected that landowners would demand eco-friendly designs. For this reason it is important to objectively communicate the benefits of eco-friendly shorelines in a manner that resonates with landowner values in a manner that benefits the intended environmental outcomes.

Process

We recommend that agencies take on the responsibility for outreach in order to educate landowners about eco-friendly shorelines and their benefits. An excellent example of this recommendation is the City of Seattle's forthcoming *Living Shorelines* guidebook. Due out this summer, it will be a vital resource for any shoreline landowner planning to perform maintenance on, redesign, or "green" their shoreline as other jurisdictions may not have the means to produce their own guidebooks. The city should take measures to ensure it is readily available to all landowners around the lake. This resource is too important to restrict its access to Seattle shoreline residents.

While the detailed information in the *Living Shorelines* guidebook is indispensable, it is reasonable to assume that landowners will only seek its guidance when they are about to start or have already started their shoreline project. We recommend permitting agencies educate landowners early, before they are attached to a traditional design. Eco-friendly shoreline designs need to be a realistic and apparent option for landowners when they first start to think about their shoreline project.

The early promotion of eco-friendly shoreline designs by local permit agencies may be accomplished through providing educational resources to private landowners. For example, pamphlets, newsletters, or similarly concise materials could be used to communicate a thorough description of eco-friendly shorelines and their benefits to both aquatic life and landowners. A single-page fact sheet developed from the *Living Shorelines* guidebook may provide an efficient starting place. We recommend that the City of Seattle take on this task.

Because there are multitudes of ways to educate private landowners about eco-friendly shoreline designs, we recommend that local permit agencies should collaborate amongst themselves to find the best outreach strategies. We also recommend the agencies evaluate the best media for the disseminating and receiving information whether it is print or internet based. Making information easily accessible will allow it to reach a wider audience.

Inputs, Outputs and Outcomes

The inputs for these and other educational and informative tools are primarily work hours. Although many permitting agencies are understaffed and overworked, this work is vital to improving the ecosystem functions of the Lake Washington shoreline. Once the initial development of tools is complete, issuers need only be aware that the resource tools exist and direct the landowners to them.

The outputs produced from this recommendation include documents and other educational resource tools. The effectiveness of these outputs could be evaluated by surveying permit applicants to learn whether they received the resource tools and if they influenced their decision in choosing a shoreline design.

The outcome of this recommendation would be increased numbers of eco-friendly shorelines. If all landowners are properly informed about eco-friendly designs we are hopeful that more landowners would want eco-friendly shorelines on their property and eco-friendly shorelines will become the norm. When this happens, less landowner outreach will be needed; landowners will seek this information on their own.

Appendix A: Interview Questions

During the early stages of our project, we referred to eco-friendly shorelines as “alternative shorelines”. However, over time we came to the conclusion that the term “alternative” is ambiguous. Although many people do not know what an eco-friendly shoreline is, “eco-friendly” at least gives them an idea of the shoreline’s function, even if they cannot picture the specific aspects of such a design. However, we decided not to reword our interview questions after the fact. Hence, in the interview questions and the discussion of the responses, we sometimes refer to “alternative shorelines.” Similarly, there are other terms that refer to the same thing, such as green, living, or soft shorelines. A consensus should be reached on the terminology to avoid confusion and facilitate recognition of the chosen term.

The interviews we conducted with permit applicants and issuers were structured by a set of questions that were intended to cover a wide variety of information regarding the permitting process. Our research was conducted as part of a University of Washington program, so we submitted our interview questions to the University’s human subjects review process for approval. We broke up our interviewees into two groups: permit applicants (landowners, contractors, and consultants applying for the permits) and permit issuers (employees from local, state, and federal agencies issuing permits). The first eleven questions were asked of both applicants and issuers, and an additional three questions were asked of applicants only.

Questions for Permit Applicants and Issuers

1. What is the step-by-step permitting process for private landowners interested in implementing an alternative shoreline design?
 - a. What permits are required?
 - b. Do differences in the permitting process exist between traditional and alternative designs?
2. Which group most frequently applies for permits: contractors, consultants, landowners?
 - a. Is the permitting process generally faster or smoother for one group compared to another? Why?
3. Are there any perceived or actual bottlenecks in the permitting process?
 - a. If so, where do they exist?
 - b. How can permit applicants avoid bottlenecks?
 - c. How can permit issuing agencies help applicants avoid bottlenecks?
4. What are the most common mistakes made by permit applicants?
 - a. What is the cost (time and/or financial) of these mistakes to the permit applicant?
 - b. [To permit issuers only:] What is the cost (time and/or financial) of these mistakes to the permit issuing agency?

5. Is there a discussion between the permit applicant and the permit issuer about the applicant's shoreline design?
 - a. Are alternative shorelines promoted by the permit issuer?
6. Are there any shortcuts or streamlines in the permitting process for landowners interested in implementing alternative shoreline designs (as compared to installing or replacing a bulkhead or riprap)?
7. Is any alternative shoreline design information available for permit applicants?
8. Are there any improvements that could be made in the permitting process?
9. Are there any incentives within the permitting process for applicants interested in implementing alternative shoreline designs?
 - a. Are there any potential incentives within the permitting process that would encourage applicants to consider alternative shoreline designs?
 - b. Are there any potential policy mechanisms that would encourage applicants to consider alternative shoreline designs?
10. How do people know they need a permit?
11. What assistance and resources are available for permit applicants?

Additional Questions for Permit Applicants

12. [To landowners:] Does your property have alternative shoreline design?
[To contractors and consultants/designers:] Have you designed and/or constructed any alternative shoreline designs?
 - a. Why or why not?
 - b. What are the benefits of alternative shoreline designs?
 - c. What are the problems and costs of alternative shoreline designs?
13. How do the following factors affect the choice between traditional and alternative shoreline designs?
 - a. Effectiveness of shoreline design at controlling erosion
 - b. Maintenance
 - c. Cost
 - d. Permitting
 - e. Aesthetics
 - f. Lake accessibility and use
14. What information is your answer to the previous question based on?

Appendix B: Definitions

Alternative Shorelines: see **Eco-friendly Shorelines**

Bulkhead: a retaining wall to contain beach erosion and protect property from storm damage, often made of concrete, wood, or large boulders

Clean Water Act (CWA): the primary United States federal law governing water pollution

Ecosystem Functions: interactions between organisms and the physical environment

Eco-Friendly Shoreline: a shoreline that promotes beneficial ecosystem functions to wildlife while still preventing erosion and maintaining human enjoyment of the lake. Eco-friendly shorelines do not all look alike, but they may include such features as beach coves or full beaches, overhanging vegetation or planting buffers, bulkheads that are set back an appreciable distance behind the OHWM, appropriately placed logs or large woody debris, and biotechnical slope stabilization.

Endangered Species Act (ESA): a United States federal law designed to protect critically imperiled species from extinction as a consequence of economic growth and development untended by adequate concern and conservation

Hardened Shorelines: a shoreline armored with bulkhead or riprap

Lake Washington Shoreline Protection Alternatives Programmatic (SPAP): a programmatic under which the federal permitting process, including consultation with NMFS, is streamlined if a project meets the specific set of design requirements set forth in the SPAP guidelines, ensuring an environmentally friendly shoreline design

Nearshore: The region of land extending between the backshore, or shoreline, and the beginning of the offshore zone. Water depth in this area is usually less than 10 m (33 ft).

NMFS (National Marine Fisheries Service): a division of the National Oceanic and Atmospheric Administration (NOAA), NMFS is responsible for the stewardship and management of the nation's living marine resources and their habitat

NOAA (National Oceanic and Atmospheric Administration): a scientific agency within the United States Department of Commerce focused on the conditions of the oceans and the atmosphere. NOAA is one of the community partners associated with this project.

Office of Regulatory Assistance (ORA): an entity created by the governor of Washington State to help citizens and businesses navigate through applicable state and federal regulatory systems

Ordinary High Water Mark (OHWM): refers to the highest level reached by a body of water that has been maintained for a sufficient period of time to leave evidence on the landscape

Programmatic Biological Evaluation for Shoreline Protection Alternatives in Lake Washington: see **Shoreline Protection Alternatives Programmatic**

Regional General Permit (RGP): a Department of the Army authorization that is issued on a regional (limited geographic scope) basis for a category of activities when those activities are substantially similar in nature and cause only minimal individual and cumulative impacts on the aquatic environment. If your project meets the requirements, you may apply for an RGP from the Corps instead of the lengthier Individual Permit.

Riprap: loose rock used to create shoreline armoring similar to a bulkhead, though often placed at an angle to the water as opposed to a wall perpendicular to the water

Rivers and Harbors Act (RHA): this refers specifically to the Rivers and Harbors Act of 1899, the oldest environmental law in the United States. Its primary function was to make the discharge of matter into navigable waters a misdemeanor. To understand its applicability to this study, see **Section 10**.

Seattle Department of Planning and Development (SDPD): a department within the City of Seattle that manages growth and development within the city in a way that enhances quality of life. They promote a safe and sustainable environment through comprehensive planning, good design, and compliance with development regulations and community standards. SDPD is one of the community partners associated with this project.

Seattle Public Utilities (SPU): SPU provides water, sewer, drainage, and solid waste services to the residents of Seattle. SPU is one of the community partners associated with this project.

Section 7: a section of the Endangered Species Act that directs all federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with the U.S. Fish and Wildlife Service, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat

Section 10: a section of the Rivers and Harbors Act that regulates the building of a structure (bulkheads, docks, piers) or the placing of fill in navigable waters of the U.S.

Section 404: a section of the Clean Water Act that regulates the discharge of dredged and fill material into waters of the U.S.

Shoreline Management Act (SMA): a Washington State law adopted to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines. The SMA has broad policies to promote "preferred" shoreline use, protect shoreline natural resources (the land and its vegetation and wildlife), and to promote public access to the state's shorelines.

Shoreline Master Program (SMP): Under the SMA each city and county with "shorelines of the state" must adopt a SMP that is based on state laws and rules but tailored to the specific geographic, economic and environmental needs of the community. The SMP is essentially a shoreline comprehensive plan and zoning ordinance with a distinct environmental orientation applicable to shoreline areas and customized to local circumstances. The SMPs in jurisdictions around Lake Washington are currently being updated.

Substrate: the material on the lake floor. Close to the shoreline, a certain size of gravel (1/8 inch to 2 inches in diameter) contributes to the ideal habitat for juvenile salmon.

Traditional Shorelines: see **Hardened Shorelines**

U.S. Army Corps of Engineers (USACE): a federal agency that provides engineering services to the nation. The Corps has jurisdiction over navigable waters and issues the federal permits needed for shoreline work waterward of the OHWM along Lake Washington.

Washington Department of Ecology (ECY): an agency whose role is to protect, preserve, and enhance Washington's environment, and promote the wise management of our air, land, and water

Washington Department of Fish and Wildlife (WDFW): an agency whose mission is to provide sound stewardship of Washington State's fish and wildlife

Water Resource Inventory Area 8 (WRIA 8): Washington State is divided into 62 WRIs for water and aquatic-resource management issues. WRIA 8 includes Lake Washington as well as the Cedar River watershed. One of the main functions of WRIA 8 is to conserve and restore salmon habitat. WRIA 8 is one of the community partners associated with this project.

Work Window: construction timing rules prohibiting work at certain times of the year due to detrimental ecological effects to fish or other wildlife listed under the ESA. Different work windows apply to different areas of the lake.

Chapter 83 – SHORELINE MANAGEMENT

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Last Saved: Tuesday, September 02, 2008

