MOFFATT & NICHOL

TECHNICAL MEMORANDUM

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Meydenbauer Bay Park and Land Use Plan

TO: Marilee Stander / EDAW

FROM: Margaret Schwertner / Moffatt & Nichol

DATE: July 24, 2008 **JOB NUMBER:** 6629

RE: Technical Memorandum No. 4: Shoreline and In-water Regulations

Introduction

This memorandum is intended to provide EDAW with the shoreline and in-water regulatory framework for project stakeholders, planners, and engineers to reference in the development of the Draft and Final Master Plan for the City of Bellevue's (City's) Meydenbauer Beach Park and Bellevue Marina area (Figure 1), which is part of the Meydenbauer Bay Park and Land Use Plan. The City is planning a new waterfront park intended to enhance the connection between the City's downtown and the waterfront.

Figure 1: Vicinity Map (Source: City of Bellevue 2008)

As the alternatives for the park and nearby upland properties (herein referred to as the "Project Area") are developed, it is anticipated that the information in this memorandum will be expanded upon to highlight the differences in regulatory and permitting requirements for each alternative. These differences may impact the project description, cost, and schedule and will be significant factors when comparing the different alternatives.

A clear understanding of shoreline and in-water regulatory guidance is necessary for the Project Area to ensure that:

- All environmental regulations, laws, or anticipated permit conditions are known and understood early in the master planning process so that the alternatives can be compared against one another from an environmental and permitting standpoint.
- Any gaps in environmental or biological information can be identified, and ways in which to provide for this information can be planned and coordinated.
- Any currently known environmental concerns from, or commitments to, any local, state, or federal regulatory agencies, local governments, or tribes can be captured in the master planning process.
- There is an understanding that any planning or design changes could result in additional environmental conditions or commitments, which could impact permitting, scheduling, and costs.

SEPA/NEPA Environmental Review

The environmental review process is guided by provisions of the Washington State Environmental Policy Act (SEPA) and, if federal funding is obtained or if a federal permit is required, the National Environmental Policy Act (NEPA).

All local government actions, with limited exemptions, are subject to the environmental review process including the adoption and amendment of comprehensive plans, master plans, and development regulations (non-project actions) and the approval of development permits for on-the-ground projects (project actions). Often, environmental review of a non-project action is completed prior to that of an actual project to streamline environmental review.

The environmental review process provides information regarding effects or impacts on the environment to regulating agencies, the public, government officials, tribes, adjacent businesses, residents, and interested citizens. Described effects can include both temporary and long-term impacts on elements such as public uses, views/light, parking, land use, transportation, noise/vibration, air and water quality, energy, geology, hazardous materials, aquatic and upland resources, socio-economical impacts, public services, utilities, and cultural/archeological resources. Analysis and supplemental reports are often necessary to complete SEPA/NEPA review and help describe any proposed mitigation measures, if deemed necessary. It is during environmental review that the public can formally comment on proposals or plans before final decisions are made and project actions are taken.

A separate technical memorandum is being completed by EDAW to further outline the environmental review approach for the City of Bellevue's master planning process.

Shoreline and In-water Regulatory Guidelines

Every project must comply with a number of local, state, and federal shoreline and in-water regulatory laws and guidelines (described in more detail below). Each regulatory body or agency has a statutory responsibility for certain aspects of environmental protection and for regulating activities to prevent or mitigate for environmental impacts during construction and eventual operation of a facility.

State and Federal Regulations

Endangered plants, animals, and aquatic species are the responsibility of the National Oceanic and Atmospheric Administration (NOAA) Fisheries, National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS), all collectively referred to as 'the Services". The Endangered Species Act (ESA) requires federal agencies, such as the US Army Corps of Engineers (USACE), to consult with the Services, which are charged with implementing the ESA prior to funding, authorizing, or taking any action that might harm a listed species or degrade their habitat. The ESA authorizes citizens under lawsuit

provisions to sue any entity that harms a threatened or endangered species, and also to sue the agencies that permitted such an action.

Figure 2: ESA listed Puget Sound Chinook salmon

A project with a federal nexus is required to undergo consultation with the Services to determine whether or not the project will adversely affect a listed species. Federal ESA concurrence must be obtained before the federal agency with jurisdiction will issue a permit. Typically, the federal agency responsible for issuing the permit (ex. the USACE) engages the Services through informal or formal consultation procedures (the informal process taking less time to complete than the formal process). The information required for an ESA evaluation must be prepared in the form of a Biological Evaluation (BE) or Biological Assessment (BA), which assesses project impacts on listed species. The Services make a determination; no effect; not likely to adversely affect; or, likely to adversely affect species and habitat, based on the submitted BE or BA.

Aquatic resources are also the responsibility of the Washington Department of Fish and Wildlife (WDFW) and the Washington State Department of Natural Resources (DNR). Water quality is regulated by the USACE and Washington State Department of Ecology (Ecology). Ecology provides concurrence of federal agencies' Coastal Zone Management (CZM) consistency determinations and manages the National Pollution Discharge Elimination System (NPDES) for stormwater construction permits required at sites where construction will occur on one or more acres (cumulative acreage).

Ecology also oversees shoreline programs with permitting delegated to cities and counties as projects must be consistent with the state's Shoreline Management Act (SMA). Hazardous materials and air quality are regulated by Ecology, the EPA, and the Puget Sound Clean Air Agency.

City of Bellevue Regulations

The City of Bellevue's Shoreline Management Program (SMP) of the City's Comprehensive Plan incorporates requirements for development along the shoreline and protects the shorelands extending 200 feet landward from the Ordinary High Water (OHW) Line[1]. The City's SMP policies and goals were developed in accordance with the State of Washington SMA and apply to Lake Washington and any associated wetlands. The City has begun an update of the SMP, which is currently scheduled to be completed in 2010. Compliance with these regulations is demonstrated in the required Shoreline Substantial Development Permit (SSDP).

The Bellevue Municipal Code (BMC) provides zoning and development regulations for the use and development of land within city limits. In addition to general use or activity requirements, these provisions address height and size limits, setbacks, parking, landscaping and vegetation, and piers and floats. Projects must comply with the City's Comprehensive Plan, Tree Retention and Replacement code, and Critical Area Ordinance (CAO) including buffers from critical areas and setbacks for structures adjacent to these critical area buffers.

Pertinent regulations for the Project Area include the following sections in the Land Use Code (LUC):

- 20.20 – General Development Requirements
  - 20.20.900 – Tree Retention and Replacement
- 20.25E – Shoreline Overlay District
- 20.25H – Critical Areas Overlay District
  - Streams
  - Wetlands
  - Shorelines

[1] The Ordinary High Water Line in Meydenbauer Bay is 18.59 elevation feet based on the 1988 North American Vertical Datum (NAVD 88).

  - Geologic Hazard Areas
  - Habitat Associated with Species of Local Importance
  - Areas of Special Flood Hazard
- 20.30C – Shoreline Conditional Use Permit
- 20.30H – Variance to the Shoreline Master Program
- 20.30R – Shoreline Substantial Development Permit

The Permitting Process

In Washington, most of the necessary state and federal permits and approvals, along with the local SSDP, can be applied for using one single shared application form called the Joint Aquatic Resources Permit Application (JARPA). Each agency may also require additional technical reports to be submitted along with the JARPA.

JARPA applications include details about the project (location, project area, types of improvements and construction, quantities of dredge or fill material) and drawings of the project vicinity and preliminary plan views (drawings are usually completed to, at least, the 30% design level).

USACE permits are not issued until state permits and approvals are granted, as federal agencies do not want to be in the position of having approved work that is not in compliance with state water quality programs and regulations. Supplemental information necessary to obtain project permits may include benthic and habitat surveys, BE/BAs, and mitigation and monitoring plans. Permits are not obtainable until the project has undergone SEPA/NEPA review.

Projects in or near the water are often more complex to permit than upland projects and it can take an extensive amount of time to receive the necessary permits and approvals. It is therefore critical that regulatory issues be considered in parallel with the planning and design phases for these types of projects. For example, the environmental review phase of a project may take anywhere from two months (simple SEPA review for a Determination of NonSignificance [DNS] requiring a checklist) to up to three years (more complicated SEPA review for a Determination of Significance [DS] requiring an Environmental Impact Statement [EIS]). In-water or shoreline permitting can take anywhere from three months to two years depending on the different regulatory requirements.

In the case of the City of Bellevue's master planning efforts, current preliminary alternatives under consideration are not anticipated to require environmental review more complex than that of a SEPA checklist. If more complex alternatives are considered during the master planning efforts, this could change and an EIS may be warranted.

Mitigation

Mitigation for a project may be required when the project is anticipated to result in negative impacts. What defines a negative impact varies with each regulatory agency. Impacts for upland issues (parking, traffic, views, etc.) and in-water/shoreline issues (public access, wetlands, critical shoreline habitat, etc.) may both require some type of mitigation. This section only discusses mitigation pertinent to shoreline and in-water elements.

NEPA regulations define the steps taken to avoid or minimize negative impacts as: avoiding the impact all together by not taking a certain action; minimizing impacts by limiting the action; modifying the impact by restoring some portion of the affected project element/environment; reducing the impact by using protective measures with the action; and compensating for the impact by replacing or providing alternative resources.

Each agency has different standards for mitigation. In general, the Services will require the effects of any project on listed species and critical habitat to be evaluated and will require offsetting measures to be proposed. This information is usually provided to the Services in the form of a BE or BA. Adherence to proposed mitigation and permit conditions within the project BE or BA is required as part of the final permit.

WDFW is responsible for protecting all fisheries resources and aquatic habitats in state waters. Their mitigation requirements/policies have changed over time and vary depending on the Area Habitat Biologist assigned to the specific geographic region. Compensatory mitigation may increase or decrease through permit negotiations.

The USACE, EPA, the Services, Ecology, and WDFW have guidelines and ratios for compensating wetland impacts. Generally, if mitigation satisfies the WDFW, the Services, Ecology, local tribal governments, and is in the best public interest, the USACE will not require additional mitigation. Specific mitigation requirements for impacts to critical areas and wetlands are also outlined in BMC 20.25H and are more stringent than requirements from state and federal entities.

Permanent impacts such as increases to over-water coverage, and new dredging or fill activities below the OHW line should be avoided, otherwise mitigation will most likely be required (maintenance and in-kind replacement activities can be exempt).

Temporary impacts such as construction can affect fish and aquatic resources in the short-term (reduced water quality, construction noise, etc.). One common form of mitigation for temporary construction impacts includes the compliance with in-water work windows established by the Services and WDFW for listed fish and wildlife species. The specific in-water work window is determined during the permitting process. For the Project Area in Lake Washington, the in-water work window runs from July 16 through April 30 of any given year to protect ESA listed Chinook salmon and bull trout.

Anticipated Permits/Approvals

Anticipated local, state, and federal regulatory requirements that may be required for any in-water, over-water or shoreline work proposed for the City's Project Area are listed in Table 1. This list does not include all of the necessary studies that may need to be completed in support of each of these permits or approvals and the information contained herein shall not preclude any forthcoming information since the master planning effort for the Project Area is still within the early stages of development.

Table 1 – Local, State, and Federal Permits/Approvals

Environmental Review:	
State:	SEPA required for environmental review of the Master Plan and following project actions
Federal:	NEPA required for environmental review (in addition to SEPA) for projects with a federal nexus (federal funding or permits)
Local:	
City	Shoreline Substantial Development Permit - jurisdiction under SMA 200 ft landward of the OHW
	Shoreline Conditional Use Permit for specific projects as defined in the SMP
	Compliance with the City's Critical Area Ordinance for projects in or adjacent to identified critical areas
	Compliance with the City's Tree Retention Ordinance for all projects with significant trees located on-site
State:	
DNR	Authorization to Use State-Owned Aquatic Lands to use state-owned aquatic lands (if any dredged material disposal is necessary at an open water disposal site).
WDFW	Hydraulic Project Approval (HPA) for work that uses, diverts, or obstructs the natural flow or bed of state waters.
Ecology	Section 401 Clean Water Act - Water Quality Certification for any activity that could cause a discharge of dredge or fill material into water or wetlands, or excavation in water or wetlands.
	National Pollution Discharge Elimination System (NPDES) Stormwater Construction Permit
	NPDES Municipal Permit compliance - requirements need to be considered for design

SHPO	National Historic Preservation Act
Federal:	
USACE	Rivers and Harbors Act - Section 10 - for work in, over, or under navigable waters
	Clean Water Act - Section 404 Compliance - for discharge of dredge or fill material into water or wetlands
Ecology	Coastal Zone Management Consistency Determination Concurrence
USFWS/NMFS	Endangered Species Act – for work with the potential to affect any threatened or endangered species

Site Conditions

The City of Bellevue owns approximately 10 acres of land that extends along 1,250 linear feet of shoreline on Meydenbauer Bay, from Meydenbauer Beach Park to SE Bellevue Place and north to lake Washington Blvd. (as mentioned previously, this area is referred to as the "Project Area" in this memorandum).

The shoreline and in-water site elements at Meydenbauer Beach Park include a swimming beach and dock at the northwest corner (Figure 3). The beach runs southeast along the edge of the lake to a low riprap slope, topped by grass and some riparian vegetation that continues past the park and along the private properties to the Bellevue marina.

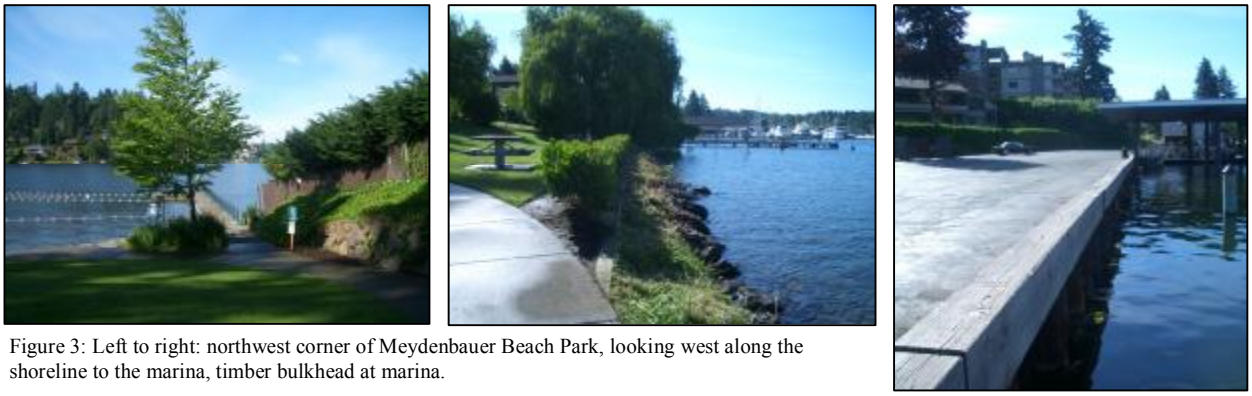

Figure 3: Left to right: northwest corner of Meydenbauer Beach Park, looking west along the shoreline to the marina, timber bulkhead at marina.

Three roads are located within 200 feet of the Lake Washington shoreline on either side of the marina; on the northwest is 99th Ave. NE, and on the southwest are SE Bellevue Place and Meydenbauer Way SE. All three roads provide access to the marina, the park, and to adjacent private properties.

Three small, Category IV wetlands, which drain to an area that historically flowed as a stream, have been identified within the Project Area during the City's Sub-Area Shoreline Inventory (TWC 2008). This information should be considered conceptual until reviewed and approved by appropriate agencies with jurisdiction.

Constraints and Opportunities

Shoreline Modifications

Shorelines in Bellevue are regulated by the shoreline critical area buffer and structure setback requirements of the City's LUC 20.25. The shoreline buffer for undeveloped (no primary structure) and developed sites (contains a primary structure) are 50 feet and 25 feet respectively. The structure setbacks for undeveloped and developed sites are zero feet and 25 feet respectively. Primary structure expansions are allowed if expansion outside the shoreline buffer or setback area is not possible. Modifications to these LUCs may also be obtained through the CAO report per LUC 20.25H.230.

Shoreline stabilization projects, for both hard and soft armoring, are allowed within the shoreline area per LUC 20.25E.080.E to protect existing primary structures. In general, hard stabilization measures must be located behind the OHW line while soft stabilization measures can be located waterward of the OHW line.

Any shoreline or in-water work located waterward of the OHW line would also require permits from the USACE, WDFW, and Ecology.

Marinas, Piers and Docks

The construction or modification of commercial, public access, and marina moorage facilities must comply with the City's development standards. The following has been summarized from LUC 20.25E.080.N.3:

- The size/width of the facilities is not regulated, but the minimum size necessary to allow for the use is preferred.
- The only structures permitted in the first 30 feet waterward of the OHW line are piers and ramps.
- Grating must be incorporated into the moorage facility to the maximum extent possible.
- Floats are allowed only over water with depths of 10 feet or greater at the landward end of the float. In no case may any moorage facility extend more than 150 feet waterward of the OHW line.
- The piling nearest the shore must be four-inch diameter steel piling and at least 18 feet waterward of the OHW line. Piling set beyond the first shall be less than 12 inches in diameter and shall be spaced at least 18 feet apart. Timber piles are not allowed unless they are ACZA treated. Steel piles must be installed using sound attenuation measures.
- Large and small woody debris and substrate material shall be preserved and new or expanded moorage facilities placed to avoid disturbance of such features.
- In order to mitigate the impacts of new or expanded moorage facilities, plantings (if site-appropriate) and a 10-foot wide vegetative buffer is required. At least five native trees will be included in a planting plan and monitored with an approved monitoring plan per LUC 20.25H.210.
- Commercial, public access, marina or yacht club moorage in Meydenbauer Bay shall not extend beyond the area shown in Figure 4. More specific boundary details can be found in LUC 20.25E.080.N.3.b.vii.

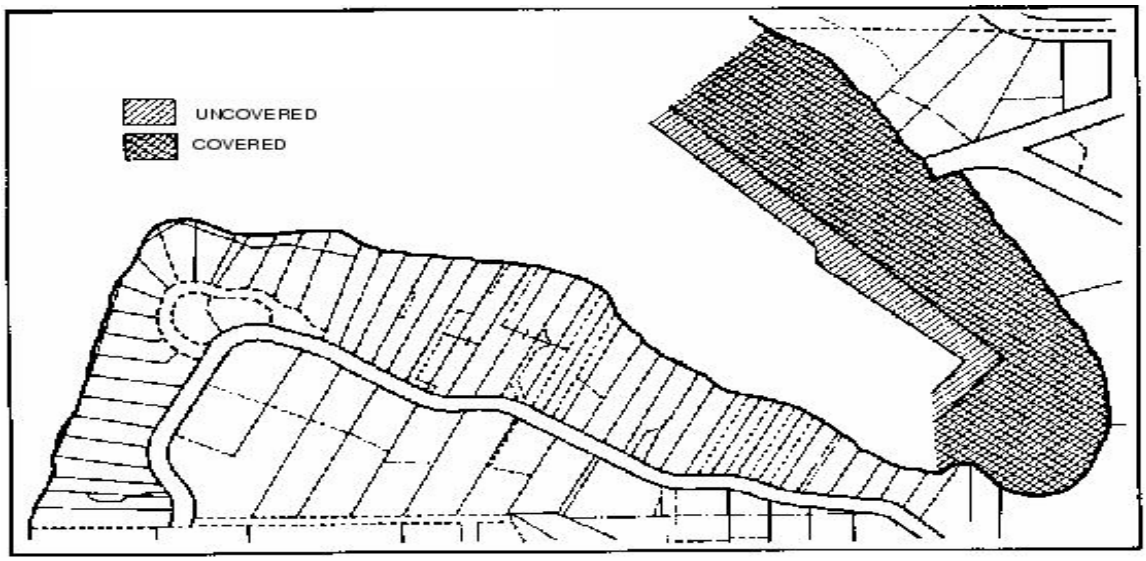

Figure 4: Area permitted for public moorage

- No covered moorage (Figure 5) shall extend out into the bay farther than the limits of the boundary indicated in Figure 4.
- New boathouses are prohibited.
- A determination of technical feasibility is required for any proposed repair or replacement work for existing moorage facilities.

Figure 5: Existing covered moorage at the marina

Fish and Wildlife

The following fish and wildlife species are designated as species of local importance within the City of Bellevue and an assessment of on-site habitat opportunities is currently underway.

Birds
Bald eagle (*Haliaeetus leucocephalus*)
Peregrine falcon (*Falco peregrinus*)
Common loon (*Gavia immer*)
Pileated woodpecker (*Dryocopus pileatus*)
Vaux's swift (*Chaetura vauxi*)
Merlin (*Falco columbarius*)
Purple martin (*Progne subis*)
Western grebe (*Aechmophorus occidentalis*)
Great blue heron (*Ardea herodias*)
Osprey (*Pandion haliaetus*)
Green heron (*Butorides striatus*)
Red-tailed hawk (*Buteo jamaicensis*)

Reptiles
Western pond turtle (*Clemmys marmorata*)

Amphibians
Oregon spotted frog (*Rana pretiosa*)
Western toad (*Bufo boreas*)

Fish
Chinook salmon (*Oncorhynchus tshawytscha*)
Bull trout (*Salvelinus confluentus*)
Coho salmon (*Oncorhynchus kisutch*)
River lamprey (*Lampetra ayresi*)

Mammals
Western big-eared bat (*Plecotus townsendii*)
Keen's myotis (*Myotis keenii*)
Long-legged myotis (*Myotis volans*)
Long-eared myotis (*Myotis evotis*)

Lake Washington provides spawning and juvenile fish habitat for fall Chinook, coho, and sockeye salmon, winter steelhead, and cutthroat, rainbow, Dolly Varden and bull trout (TWC 2008). Federally listed fish species, such as the Chinook salmon and bull trout, are also present in Lake Washington.

WDFW mapping of priority habitat and species identified an osprey nest at Hidden Valley Sports Park in 2007, but further osprey activity in Meydenbauer Bay has not been recently observed (TWC 2008). A bald eagle nest is located at the southeast corner of Meydenbauer Bay.

Potential spawning habitat for sockeye salmon may be present in front of the park as indicated by WDFW maps created ten years ago, however it is not clear if this area is still used by the sockeye (TWC 2008). Most sockeye spawning now occurs in the Cedar River as opposed to Lake Washington shorelines (TWC 2008).

Eurasion Watermilfoil (*myriophyllum spicatum*) is an invasive aquatic plant that has been considered a problem in Meydenbauer Bay in the past (TWC 2008).

Tribal Fishing

The Project Area is located within the Muckleshoot Tribe fishing area (includes the Ship Canal and Lake Washington). Coordination and communication with tribal governments prior to the environmental review and permitting phases of a project are critical to the success of a project and should be part of the City's master planning efforts.

Water Quality/Stormwater/Wastewater

Water Quality/Stormwater

Projects designed to meet Ecology's current Stormwater Management Manual, as mandated by the local jurisdiction, will also meet water quality requirements for Section 401 certification. BMPs are also usually mandated during construction for in-water and shoreline projects.

Three stormwater outfalls are located in the Project Area. The westernmost outfall flows from a 15-inch pipe located along the boundary of Meydenbauer Beach Park. It is fed by two 12-inch pipes that run along the park's walking path. Historically, a perennial stream channel was in this area (TWC 2008). Currently, the stream is piped beneath the existing park before entering Meydenbauer Bay. The second stormwater outfall (12-inches in diameter) is also located within Meydenbauer Beach Park and collects runoff from upland areas. The third stormwater outfall is located at the Bellevue Marina. An additional stormwater pipe receives flow from the Bellevue Marina parking lot and flows southwest before connecting with another pipe outside the southern limits Project Area. It is not known to what degree this stormwater is treated prior to discharge into Meydenbauer Bay (TWC 2008).

In Washington, there is significant effort to plan and design projects that better manage stormwater and enhance or preserve more natural hydrological processes through Low Impact Development (LID), BMPs, and design requirements. Protecting and improving water quality is a significant concern by local communities and governments, as well as regulatory agencies such as Ecology and WDFW.

Wastewater

A number of sewer pipes are located in along the shoreline of the Project Area, all of which empty into a 10-inch sewer line which runs along the park beach and conveys sewage to the King County Natural Resources and Parks Wastewater Treatment Division's South Treatment Plant (TWC 2008). The parallel sewer pipe may actually be located below the OHW line and could be exposed in places. This issue should be investigated when considering shoreline alternatives for the Project Area. Of particular note is the deterioration of one sewer pipe adjacent to the marina. The City is currently planning to repair it (TWC 2008). It may be of benefit for the master planning effort to identify the timeline for this repair project.

Dredging and Sediments

Dredging, or the removal of sediments, is sometimes necessary to deepen moorage facilities, such as marinas, or to maintain a specific water depth at a facility.

Dredging can be completed from land or barge depending on the site location and quantity of material area to be removed. Regulatory agencies prefer to minimize in-water activities and any chance to conduct dredging from land is usually preferred.

Figure 6: Left to right: typical dredge barge with clamshell bucket, close-up of bucket

Land-based sediment removal has been conducted at the stormwater outfall near the Bellevue marina. This occurs periodically as an outfall maintenance practice. In the 1990's a very small quantity of material was removed using a "diver-held" hose connected to a vacuum excavation truck. Similar sediment removal is planned in 2008.

For larger quantities of sediments, a crane mounted on a floating barge or derrick is more commonly used (Figure 6). If dredging is proposed as part of the master planning efforts for the Project Area, it would be worthwhile investigating the extent and frequency of any past dredging work in the marina. Maintenance

dredging (dredging within a footprint or area that has been regularly dredged in past years) is much easier to permit than new dredging activities (necessary to increase or expand a moorage facility).

Dredging and disposal of sediments require regulatory approval. The Dredge Material Management Program (DMMP) is a multi-agency organization that manages dredged material in Washington and was designed to make decisions on what is considered clean and contaminated sediment in Puget Sound. The DMMP Committee includes representatives from the USACE (acts as lead agency), the EPA – Region 10, Ecology, and DNR and includes dredged material management programs such as the Puget Sound Dredged Disposal Analysis (PSDDA) program.

Dredged material that meets DMMP guidelines (material is tested using chemical, bioassay, and/or bioaccumulation testing methods) can be permitted for open water disposal at one of 8 different sites located in Washington. The closest open water disposal site to Lake Washington is located in Elliott Bay. Upland disposal at an approved waste material facility is a more expensive alternative for sediments that do not meet open-water contaminant testing criteria.

Beneficial reuse is a newer approach to sediment management which includes a wide variety of opportunities to use dredged material for more productive purposes, making traditional placement of dredged material unnecessary. The USACE recommended categories of beneficial uses (USACE 1987) include:

- Habitat restoration/enhancement (wetland, upland, and aquatic);
- Parks and recreation (commercial and non-commercial);
- Shoreline stabilization;
- Industrial and commercial use;
- Material transfer (fill, roads); and
- Construction material.

Beneficial reuse options can range in cost and still require contaminant testing and permitting.

In 1999 and 2000, sediment samples were collected and tested from a number of stations in Lake Washington, one of which was Meydenbauer Bay (TWC 2008). The results from this very preliminary test indicated that, relative to other areas of Lake Washington, sediment quality in the Bellevue area is relatively clean (TWC 2008). Any proposed dredging in Meydenbauer Bay would require more extensive sediment characterization.

In-water Work Windows

As mentioned earlier, in-water work is often restricted in Washington to protect migrating juvenile salmon. Minimizing the duration of in-water work (below the OHW line) and strictly adhering to the appropriate fish work windows is dictated by permits from the USACE and the Services and from WDFW.

Chinook salmon and bull trout work windows for the Lake Washington System in the Bellevue area is between July 16 and April 30 of any given year. There may be additional work window restrictions for sockeye spawning areas.

Sound and Vibrations

In-water construction activities, such as pile driving, can have a variety of effects on fish and other aquatic species. Heavy sound and vibration can result from driving new concrete or steel piles needed to support shoreline structures. The resulting noise and vibration can kill or harm nearby fish and other aquatic species. To minimize this impact, the Services often require noise attenuation measures to be used during construction. The use of a vibratory hammer is preferred over impact hammers. When impact hammers are necessary, bubble curtains (Figure 7) are often mandated. Bubble curtains reduce noise from in-water construction work and deter

Figure 7: Bubble curtain

fish from coming into the immediate construction area.

Stewardship Opportunities

Meydenbauer Bay has a unique existing, and historical waterfront that could provide a number of opportunities to the City's master planning efforts.

Figure 8: Historical shoreline of Meydenbauer Bay.

Left: Earliest known photograph (Source: http://www.scn.org/bellehist/transportation.html).

Right: 1902 photograph (Source: Puget Sound Maritime Historical Society)

Originally, the shoreline of Meydenbauer Bay was undeveloped (Figure 8). Throughout the early 1910's, and prior to the construction of the I-90 and 520 bridges, transportation between Seattle and Bellevue was by ferry. The Leshi ferry (Figure 9) began operating in 1913 and ran through 1950 (HistoryLink.org 2008). Following the opening of the Lake Washington Ship Canal in 1917, the American Pacific Whaling Company wintered their whaling boats at Meydenbauer Bay to keep them out of the salt water (HistoryLink.org 2008). Two original buildings remain at the marina today; the whaling building and the ice house (Eastside Heritage Center 2007).

Figure 9: Left to right: Leshi ferry on Lake Washington in the 1940s (Source: HistoryLink.org 2008), Bellevue ferry Dock in 1914 (Source: Puget Sound Maritime Historical Society), whaling building in 1935 (Source: http://www.historylink.org/essays/output.cfm?file_id=313)

Meydenbauer Bay has been the location of pristine shoreline habitat, public access, ferry transportation, and public and private vessel moorage. To date the City has worked to maintain a number of these elements in Meydenbauer Bay and has the opportunity to enhance many of them through the upcoming master planning efforts.

Habitat

With respect to shoreline and affiliated wetland habitat opportunities, the 2005 Final Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan included the following recommendations:

- Encourage salmon friendly shoreline design during new construction or redevelopment
- Discourage construction of new bulkheads, especially in locations where more natural shorelines still exist.
- Develop dock/pier specifications to streamline federal/state/local permitting; encourage similar effort for bulkhead specifications.

- Promote value of light-permeable docks, smaller piling sizes, and community docks (as opposed to private docks).
- Restore original shorelines. Use interpretive signage where possible to explain restoration efforts.
- Address water quality and high flow impacts from creeks and shoreline development through NPDES Phase II permit updates, promotion of LID (ex. use of rain gardens), on-site stormwater detention for new and redeveloped projects, and control of point sources that discharge directly into the lake.
- Protect and restore forest cover, riparian buffers, wetlands, and creek mouths.

These recommendations should be considered when working through the master planning efforts. Often local, state, and federal funding and community support can be obtained for project elements that improve fish and wildlife habitat.

Of particular interest may be the Governor's new Puget Sound Initiative which focuses on improving the region's water quality. Funding support for stormwater improvements (most likely via Ecology grants) is anticipated over the next several years.

Public Access

The Meydenbauer Beach Park already provides considerable public access to the water. However, there is opportunity to improve shoreline access between the park and the City's marina in combination with soft shoreline stabilization measures and designs (as identified in the previous sections recommendations).

Waterborne Transportation

Ferry transportation was a historical component of the site and may not be appropriate today. However, the King County Ferry District (KCFD) is evaluating a number of demonstration routes for passenger-only ferries, that could be developed over the next few years; one of which could link Seattle to the eastside (currently Kirkland has been proposed as an option) (KCFD 2007). It may be of interest to the City of Bellevue to investigate this opportunity; any affiliated funding opportunities, along with any concerns by the Bellevue community.

Vessel Moorage

The Bellevue Marina provides the City with the ability to improve or redevelop public and/or privately owned vessel moorage. These opportunities are further assessed in Moffatt & Nichol's *Meydenbauer Bay Park and Land Use Plan: Marina Docks* memorandum (2008). State and federal funding can be obtained for improvements to public moorage facilities.

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