

# Willamette River Recreation Strategy

## Public Boating Facilities

February 2012



**PORTLAND PARKS & RECREATION**  
Healthy Parks, Healthy Portland



City of Portland, Oregon  
**RIVERS OFFICE**  
Office of Healthy Working Rivers



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Photo by Jerry McCarthy, Port of Portland

# Executive Summary

The Willamette River Recreation Strategy provides policy guidance and recommends actions to meet increased river recreation in Portland over the next five to 15 years. It is based on the City's 2006 *Water-Based Recreation Report and Recommendations*, and articulates a new vision and goals for the City's approach to river recreation:

## Vision

*A clean and healthy Willamette River is the pride of Portlanders who fish, paddle, sail, pleasure-boat, swim, experience nature, and sightsee on its waters.*

## Willamette River Recreation Goals

- Increase Portlanders' enjoyment of, and direct experience with, the Willamette River.
- Bring people closer to the river to foster an improved understanding of river history, economy, and ecology.
- Manage recreation in concert with other City priorities to secure a net improvement in river health by reducing or eliminating historic hazards for threatened fish and wildlife, and protecting high-value habitat.
- Provide for safe, enjoyable, and valuable on-water recreational experiences for all users.

In pursuit of these goals, this Strategy:

- Re-emphasizes that it is the City's policy to support and encourage thoughtful recreational use of the Willamette River in order to:
  - o Build stronger bonds between people and their river.
  - o Increase awareness of the need to continue the work of protecting and enhancing river health.
  - o Create a vibrant river legacy for future generations.
- Focuses primarily on public recreational boating and facilities as a first step in meeting present and future river recreation demand for all users.
- Asserts that public recreational boating facilities represent a singular community asset of regional importance that must be managed as a system – with coordinated long-range planning; integrated operation and maintenance; and funding adequate to maintain and, where needed, expand facilities.
- Recommends a no-net-loss approach to existing recreational capacity on the river overall.
- Puts a premium on taking care of the facilities we already have by investing in much-needed repair and maintenance.
- Encourages development of facilities that can serve multiple uses.
- Targets six priority projects for infrastructure improvements and five for expanded or new facilities.
- Seeks to reduce or avoid boating conflicts through improved management, education, and enforcement.

## Executive Summary

- Stresses the need for deepening City engagement with boater user groups and increasing partnerships with local, state, regional, and federal partners in river recreation.
- Establishes detailed guidelines for the siting and design of in-water boating facilities that minimize impacts to fish and wildlife habitat.
- Emphasizes the need for new strategies and partnerships to fund improvements.
- Seeks to maintain the City's river recreation focus by providing for regular updates to the Strategy and establishing a citizen committee to advise the City and its partners on river recreation needs in the Portland area.

This Strategy is a first step in bringing focus to Portland's public recreational needs and opportunities in and along the Willamette. It is a statement of direction and an enunciation of next steps. It more clearly identifies the specifics of the work to come – of which there is plenty. The Strategy does not substitute for ongoing or future planning efforts, but informs them. It does not create or obligate funding, but guides investment. It acknowledges the critical role of private groups and businesses, but is not a replacement for increasingly needed public-private partnerships. In many ways, the measure of the Strategy's success will be how much it changes to keep pace with Portlanders' ever-tighter embrace of the Willamette.



Bath house at The Oaks

# Portland and the Willamette

Portland has always counted on the Willamette for its life and livelihood: for navigation and maritime commerce; waterfront businesses and industries; and even, for a time, its water supply. Fishing, boating, swimming, and simply enjoying nature have been a big part of living along this 13th largest river in the continental U.S. The Willamette has been a vital element in Portland's civic life for well over a century.

Over the last hundred years, Portlanders have contemplated Willamette connections, and made plans – some grand, some routine – to create the riverfront that we enjoy today. But, for decades, this interest was in tension with the grim realities of a polluted river – waste flowed unabated directly into the river, depleting oxygen for native fish and posing a severe health hazard for residents.

But Portlanders and Oregonians had a different Willamette in mind, a river they wanted back – cleaned-up and healthy. The 20th century saw a succession of initiatives to reclaim the Willamette, such as the 1938 Water Purification and Prevention of Pollution Act; the 1958 rule requiring cities to build modern sewage treatment plants; the 1972 Clean Water Act; the building of upriver dams that doubled the amount of summer water in the Willamette; the leadership of Governor Tom McCall in passing tough state laws limiting water pollution; 1972's national prohibition of DDT; and the 1974 replacement of Portland's riverside freeway, Harbor Drive, with Tom McCall Waterfront Park. The City of Portland has always included a better Willamette in its plans. Whether in the 1987 *Willamette Greenway Plan*, 1988 *Central City Plan*, 2004 *River Renaissance Strategy*, 2005 *Watershed Management Plan*, or 2006 *River Plan River Concept*, improving the river's health and Portlanders' connection to it has been a priority.

It is also important to note that the City is not alone in recognizing the recreational value and potential of the Willamette. The Oregon State Marine Board (OSMB) has played a central role in assessing recreational boating in Portland, and in serving boaters' needs. OSMB's 1995 *Recreational Boating Management Plan for the Portland Metropolitan Waterways* emphasized the statewide importance of boating in the Portland area, and included recommendations relating to education, law enforcement, facilities, and waterway management. Further, OSMB's regular *Triennial Boater Survey* and its *6-Year Statewide Boating Access Improvement Plan* offer information regarding boating use and facility needs statewide, including in the Portland reach of the Willamette. The Marine Board is also an important source of funding for marine law enforcement, including the Multnomah County River Patrol.

The Willamette's recreational value is recognized by other state agencies as well. The Oregon Department of Land Conservation and Development oversees implementation of the state's land use planning goals, including [Goal 15: Willamette River Greenway](#), and works with local jurisdictions, including the City of Portland, on implementation. The Oregon Department of State Lands' *Lower Willamette River Management Plan* (1992) sets a goal of increasing “public access to the river as a gathering place for a wide range of recreational pursuits – active and passive, river-borne and shoreline.” In addition, the [Willamette River Water Trail](#), established in 2004 and administered by the Oregon Parks and Recreation Department, runs through Portland and represents a significant recreation resource for the city and the state.

All of this attention has made a big difference. Thanks to many decades of physical improvements and persistent efforts on the part of the City and Oregonians, the Willamette is much cleaner and more readily accessible to people. Nowhere is this commitment more evident than in Portland's 20-year effort to address combined sewer overflows. The \$1 billion “Big Pipe” project – entirely paid for by

## Portland and the Willamette

city homeowners and businesses – was completed in 2011 and is creating a much cleaner river. Today in downtown Portland, as measured by the Oregon Department of Environmental Quality’s Oregon Water Quality Index, the Willamette’s water quality is excellent and safe for swimming. The Willamette River is second only to the Columbia in every boating-use category, with the exception of water skiing and personal watercraft operation where it ranks first.

Despite much progress, however, the health of the Willamette continues to be a pressing concern for the community and for the fish and wildlife species that depend on it for habitat. The river has undergone tremendous change over the past 200 years. In the late 19th century, 80 percent of the lower Willamette was less than 20 feet deep – providing shallow water habitat critical for salmon and other species. But dredging, diking, and channeling have reversed those figures – today, nearly 80 percent of the lower river is deeper than 20 feet, and shallow water habitat is not only scarce, but fragmented. Because of these and other changes, in the late 1990s a number of Willamette salmonid species were listed as threatened under the Endangered Species Act. Also, in 2000, the U.S. Environmental Protection Agency (EPA) designated a portion of the Willamette River as the Portland Harbor Superfund Site, recognizing the need to address a century of contaminating the river with hazardous substances. Further, the State of Oregon has issued fish consumption advisories for certain fish in the lower river due to high levels of PCBs. Solutions to these problems are being worked on by many different organizations charged with safeguarding the river’s remaining habitat and reversing historic declines in species and river health.

Today, the City and its partners are joining forces to continue environmental progress in and along the Willamette. Much work remains, but can be aided through a closer relationship between Portlanders and the river – a relationship this Strategy hopes to broaden and deepen as expressed by its vision and goals:

### Vision

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### Willamette River Recreation Goals

- Increase Portlanders’ enjoyment of, and direct experience with, the Willamette River.
- Bring people closer to the river to foster an improved understanding of river history, economy, and ecology.
- Manage recreation in concert with other City priorities to secure a net improvement in river health by reducing or eliminating historic hazards for threatened fish and wildlife, and protecting high-value habitat.
- Provide for safe, enjoyable, and valuable on-water recreational experiences for all users.

The vision and goals provide the foundation for the recommendations outlined in this Strategy and will guide future City actions and plans. The Strategy is intended to inform and guide such efforts as the Central City 2035 process and the River Plan, as well as park master plans and Portland’s Capital Improvement Program. Lastly, the vision and goals will shape the core mission of the recommended river recreation advisory group.

# River Recreation as a System of Facilities and Opportunities

The 17-mile reach of the Willamette River in Portland is part of a 200-mile-long water trail that links rural and urban lands, parks, and boating facilities from south of Eugene to the Columbia River. Recreating on the Willamette involves a busy interplay between public and private facilities and services.

Portland's public boating facilities form a connected system. Together with public access points, they provide linked opportunities to enjoy the entire length of the river as it flows through the city. Currently, this public system includes three motorized boat ramp facilities, a marina breakwater dock, one non-motorized light watercraft dock, several shore kayak/canoe launches, two commercial docks, and five public transient tie-ups (facilities where boats can dock for extended periods – hours or days).

The City's mission is to serve all river users and boaters as equitably as possible; that includes providing for disabled access to new facilities. The emphasis in this Strategy is to provide more opportunities for people to get to and on the river in more locations. Making decisions within a system framework allows the City to meet and balance user demand by diversifying facility use and providing access to address location gaps.

Finally, this strategic approach integrates environmental protective measures into location and design consideration for new facilities to lessen impacts to sensitive species and habitat. The City is conducting a series of planning processes for the North, Central, and South river reaches, for the Rose Quarter, and for Central City. These, and future, studies will continue to yield recommendations for river development. Future individual projects can be evaluated in a larger recreation framework that will also preserve the river's water quality and environmental health.

## RIVER RECREATION AND PORTLAND'S ECONOMY

With its summer riverfront festivals, renowned spring Chinook and warm-water fishing, paddling trails, rowing competitions, and pleasure cruising, the Willamette undoubtedly offers Portland significant economic returns. However, it does not appear that the extent and depth of recreation's economic impact has been specifically studied; assessment must for now rely on modeling and anecdotal information.

A recent evaluation conducted for West Hayden Island (on the Columbia near the mouth of the Willamette), notes "Based on the values from... literature..., it is estimated that in-water recreation may be valued at approximately \$14 - \$48 per user day." Data from the Oregon State Marine Board surveys suggest that there may be on the order of 250,000 to 300,000 use days on the Willamette in the Portland area – which means that boating activity could account for over \$14 million. The West Hayden Island study goes on to note, "Economic stimulus benefits of recreation are not limited to service and retail businesses selling products and services to recreators. Recreator expenditures 'ripple' through the local economy as increased economic activity in the retail and service sectors spurs additional economic activity in other sectors...the multiplier effects typically range from 1.2 to 1.5, which indicate that for every \$1 spent, total economic activity increases by \$1.20 to \$1.50." (*Recreation Participation, Development Potential, and Current Value On and Around West Hayden Island*, City of Portland Technical Memorandum, June 2010).

A 2009 survey conducted by the Oregon Tourism Commission also suggests water-related recreation forms a significant part of visitors' experiences in the Portland area. The survey showed that overnight

## River Recreation as a System of Facilities and Opportunities

visitors to the greater Portland area spent about \$108 million on recreation during the 2009 travel year. Over 60% came during the April through September timeframe, and nearly 60% were between 18 and 45 years of age (slightly younger than the average for the rest of the state). During their stay, 24% visited the beach, 22% the Gorge, and 15% the Willamette Valley. About 30% experienced a ‘beach/waterfront’ environment on their trip, and 13% indicated they had a special interest in ecotourism. Visitors participated in several water-based activities during their stay, including rafting (9%), boating/sailing (5%), and fishing (4%) (Longwoods International, 2011). While the survey did not examine tourism activities within Portland city limits, it appears water-based recreation is on the radar of visitors and may represent an opportunity for economic growth.

### Fishing

In 2008, people in the Portland Metro area spent nearly \$17 million fishing, and about \$3 million viewing wildlife, within 50 miles of their home. That fishing total included over 82,000 trips for trout; 194,000 for salmon; 135,000 for steelhead; 35,000 for bass; and 109,000 for sturgeon. (Runyan, 2009). The Oregon Department of Fish and Wildlife estimates that, on average, from 2000 through 2009, anglers spent over 77,000 days each year fishing for Spring Chinook; about 7,000 of these were spent fishing from the bank. An average of about 7,700 Chinook were caught and kept each year, with a little over 200 of them caught by bank anglers.

### River Tourism

Historically, several cruise lines have originated in Portland for overnight tours that last as long as seven days and take passengers up the Columbia and Snake Rivers. These businesses pay substantial docking fees to the City and passengers disembark downtown for food and entertainment. The Portland Spirit cruises and jet-boat excursions on the Willamette and up the Columbia represent the primary activity in this sector. Recently, the number of cruise lines operating out of Portland has declined significantly.

Sailing regattas, rowing and dragon boat races, and boating events draw crowds to the river for fun and refreshments at local eateries. Recent examples include wooden boat festivals, RiverFest, Portland State University sailing regattas, and dragon boat races. Events such as dragon boat races often draw participants and spectators from beyond Portland. At the 2010 Portland Dragon Boat Race, there were 75 teams – 34 from out of town, including Canada (organizers say the race is very popular with Canadian teams because they love the Waterfront Park venue, Portland’s brew pubs and restaurants, and tax-free shopping.) This year organizers expect the teams to bring 1,500 people to Portland, requiring 600 hotel rooms. Previous experience shows that half of the participants stay for two nights while the second half will stay for a third night (some even longer). The 2012 race is projected to bring in \$414,000 from lodging, meals, and shopping.

There also appears to be an emerging interest in river history and education that may shape future river tourism. Portland already has the popular Oregon Maritime Museum housed on the steamer *Portland*, moored on the waterfront. The city is also home to a nationally significant collection of historic vessels, including the World War II era PT 658 (the only, functional PT boat in the world), the USS LCI 713 (an infantry landing craft), and the fireboat *David Campbell* (85 years old and still in service). Portland’s maritime history also includes the 80-year-old annual tradition of hosting naval vessels from the U.S. Navy, U.S. Coast Guard, the Canadian Maritime Forces, and other vessels from around the world to comprise the Rose Festival Fleet. In addition, Portlanders are becoming increasingly interested in wooden-boat building, with the Rivers West Small Craft Center and the Wind and Oar Boat School

## River Recreation as a System of Facilities and Opportunities

attracting growing numbers of participants. The Oregon Museum of Science and Industry, is one of Portland's premier waterfront attractions, with a busy dock and an interpretive riverfront trail, and exhibits featuring information on the Willamette's natural history.

### Boating Groups and Water-Related Businesses

From rowing clubs to yacht clubs to conservation groups, Portland enjoys a rich assortment of organizations that encourage both their members and the public to get out on the river. Groups such as the Columbia River Yachting Association, Portland Boathouse, Willamette Sailing Club, Willamette Riverkeeper, DragonSports, Wasabi Paddling Club, Rose City Rowing Club, and the U.S. Coast Guard Auxiliary – to name a few – provide Portlanders with a wide variety of opportunities to join others in enjoying and protecting the Willamette.

A number of small light watercraft retailers and conservation organizations offer classes and guided paddling trips on the river, including Willamette Riverkeeper, Alder Creek Kayak and Canoe, and Portland Kayak, among others. The designation of the Willamette as a state water trail has highlighted the value of recreation in the region, and prompted the publication of the *Willamette River Water Trail Guide* which includes detailed maps and river itineraries.

In addition, a large variety of businesses encourage and support the popularity of river-related recreation activities. Commercial and retail operations offer fuel, boat maintenance, repair and storage, boat sales, weather gear and nautical supplies, dining on the water, and full marina services. Organizations such as the Portland Spirit Company, the Oregon Maritime Museum, OMSI, and others offer important river tourism opportunities for Portlanders and visitors. All of these businesses contribute to the vitality of the local economy. Most of these businesses and facilities are on the Columbia River, in Multnomah Channel, and on Hayden Island, but almost all of them are within Portland city limits. Further data collection on the economic benefits of water-related businesses would be valuable to the overall assessment of water recreation in the city as well as address an existing information gap.



## River Recreation as a System of Facilities and Opportunities

### WILLAMETTE RIVER RECREATION FACILITIES INVENTORY

This section describes existing boating facilities and river access points on the Willamette. Each facility is a unique place on the river's edge. The purpose here is to depict the role of each facility in the context of a larger system, and to briefly reference ideas for changes that fit with goals for a more diverse and flexible river recreation system.

#### ***Existing Facilities on the East Side of the Willamette (North to South)***

##### **Kelley Point Park – Canoe Launch**

An informal canoe and kayak access point into the Columbia Slough is available from a small, gravel parking area southwest of the park entrance. From this point, a hand-powered boat can enter the slough or paddle north to the Willamette River and quickly reach its confluence with the Columbia River.

Parking is provided for about eight cars and the launch space is a simple, gravel shore opening onto the slough. Fishermen also like this site although it is marked with a health advisory. Kelley Point Park offers beach access, picnicking, and restroom facilities.

*Owned and managed by Portland Parks & Recreation*



##### **Cathedral Park Master Plan – Boat Ramp**

The replacement lifespan of this facility has passed. A redesign of the boat ramp facility, parking area, and restroom was incorporated into the 2009 Cathedral Park Master Plan. Replacement cost was estimated at \$2.2 million. In the interim, repairs have been made to the toe of the ramp and regular maintenance will continue to keep the facility whole until it is renovated.

Cathedral Park also offers beach access. The master plan reconstructs the beach for safe public access and eventual swimming.

*Owned and managed by Portland Parks & Recreation*

##### **Cathedral Park Master Plan – Fishing Dock**

The current dock at the south corner of the park works well for fishing and viewing. The railings on the dock prevent boat tie-up and make it difficult to launch non-motorized boats.

The 2009 master plan recommends rebuilding this dock to serve multiple recreation purposes – viewing, fishing, non-motorized launching, and, possibly, transient tie-up. The design is conceptual and will be further developed when money becomes available.

Key to the master plan concept is a separation of passive and active uses in the park. The improved beach and new launch area will encourage non-motorized users to use the south end of the park. Canoe and kayak drop-off is easy and parking is readily available.

Cathedral Park offers picnicking, walking, and a restroom. It is also a popular summer event venue.

*Owned and managed by Portland Parks & Recreation*

## River Recreation as a System of Facilities and Opportunities



### Swan Island – Boat Ramp

This small boat ramp is tucked in a man-made lagoon with limited parking. The ramp has two lanes and boarding floats on the north side. This facility is popular with fishermen and always at capacity during fishing seasons. In addition, the Coast Guard launches its motorized dinghies from this ramp about 150 days per year.

*Owned and managed by Bureau of Environmental Services*

### McCarthy Park on Swan Island

This well-hidden, linear public park and greenway trail has direct river access and great river views. It was built in the 1980s by the Port of Portland. Two paved trails lead directly into the water. Erosion has damaged the toe of each trail at the water's edge. The public can reach the water and shoreline, but footing is a little unstable.

*Owned and managed by Port of Portland*



### Eastbank Esplanade – Kevin Duckworth Dock

This large, public transient dock allows 72 hours free tie-up.

The dock provides boater access to the Convention Center via the Esplanade stairs and ramp. It was built in 1999, with partial funding from the Oregon State Marine Board.

The remoteness of the dock location does not draw recreational boaters and it is an underutilized facility. Problems of tie-up violations occur regularly. Interest has been expressed in relocating or reusing the dock elsewhere in the river. Disposition of the facility could be revisited with the support and cooperation of the Marine Board.

*Owned and managed by Portland Bureau of Transportation*

## River Recreation as a System of Facilities and Opportunities



### Eastbank Esplanade – Madison Street Dock

Known informally as the ‘Fire Dock,’ this facility was built by Portland Development Commission (PDC) as a public dock to provide temporary tie-up for Portland Boathouse chase boats and to serve future uses by Portland Fire & Rescue (PFR). The original dock design included plans for a boathouse to cover the historic fireboat, *The Campbell*.

In the near future, PFR will take ownership of the dock and build permanent boathouses for three fireboats. The existing upland firehouse will also be renovated or replaced to serve land and river rescue

operations. Public access to the dock will be retained where it does not conflict with PFR use.

*Owned and managed by Portland Development Commission*



### Portland Boathouse and Light Watercraft Dock

Built by PDC as part of the Holman Building renovation in 2003, the Portland Boathouse operates as a nonprofit collective of seven various boating organizations. It also stores personal watercraft for a fee. The combination of rowing, dragon boating, kayaking, and canoeing makes for a very dynamic river recreation environment at the Light Watercraft Dock (south of the Hawthorne Bridge). It has become a focal point for non-motorized boating downtown.

The dock itself is a low, freeboard structure that services only non-motorized light watercraft and their chase boats. It is used year-round, but peak season is March until mid-September. The Portland Boathouse has priority use of the dock, but it is a public facility open to anyone. Parking is available within walking distance, but there is no restroom.

*Owned and managed by Portland Development Commission*



### Sellwood Riverfront Park

Portland’s southernmost river park has a beach area during the summer low water, although it is experiencing some erosion. A fishing and public transient dock provides public access to the river. Both the park shoreline and dock are often used for non-motorized launching. The park location is within easy reach of the Holgate Channel and Ross Island lagoon. The site is quiet and has a minimum of motorboat conflicts. Parking and a restroom are available in the park.

*Owned and managed by Portland Parks & Recreation*

**Existing Facilities on the West Side of the Willamette (North to South)**



**Tom McCall Waterfront Park – Ankeny Dock**

The current dock in the water at Ankeny Plaza is closed. A previous design process for a dock at that site had difficulty moving forward due to costs, facility size, and challenges meeting ADA requirements. Conceptually, the dock serves as a key west side access to Waterfront Park and Portland’s Saturday Market.

The Strategy’s goal would be to find a site nearby to replace it if the current site cannot be reused.

*Owned and managed by Portland Parks & Recreation*

**Tom McCall Waterfront Park – Salmon Springs Dock**

The lowered configuration of the seawall, the gangway, and the commercial dock were built to accommodate the tour boats of American Waterways (*Portland Spirit*) and visiting cruise lines. Salmon Springs serves as water-based tourist entry point and hub for the city’s west side. It also has the potential to provide access for public boating. The suggestion here is to explore the feasibility of building a facility at this site that can also accommodate recreational boaters for transient tie-up without interfering with commercial use of the site.

*Owned by Portland Parks & Recreation*

*Leased to American Waterways*



**River Place Marina Breakwater Dock**

This facility is the heart of downtown boating on the west side. The long, L-shaped transient dock services commercial tour boats during the spring and fall, but in the summer it attracts recreational boaters visiting downtown to enjoy lunch, concerts, festivals, or overnight stays. Recently, this facility was renovated with new bull rails, lighting, and decking repair. But even with ample dock space, the breakwater cannot accommodate demand in the summer.

The popularity of downtown as a boating destination

supports the potential for a second west access for transient tie-up.

The breakwater is also the permanent home for six DragonSports dragon boats and two outrigger canoes. This 1,000-member club paddles all year. Dragon boat activity is immensely popular with all ages and activates the otherwise-empty dock during the wet season.

*Owned and managed by Portland Parks & Recreation*

## River Recreation as a System of Facilities and Opportunities



### Waterfront Park – South Waterfront

This formal strolling garden with its multi-use waterfront path also has a paved pathway to the beach for pedestrians or those launching a kayak. The access is at the south end of the park. Kayak drop-off and paid parking are available. The water level will vary seasonally, but it is an under-used path. The park also has a restroom on the west side.

*Owned and managed by Portland Parks & Recreation*

### South Waterfront District

The planning process for parks, open space, and water access in the South Waterfront district is ongoing. Eventually, the entire greenway will be built out and a new park constructed near the Ross Island Bridge.

The overall vision for the district includes a vibrant waterfront. The Central Greenway, which will be completed in 2012, includes a paved path into the water that can be used for kayak launching.

### Macadam Bay

The houseboat community at Macadam Bay (south of Willamette Park) has a public transient dock. Although not heavily used, boaters can dock and head to shore to explore the natural areas along the river. On the land side, there are several public parking spaces outside the entry gangway that provide easy access to the greenway trail. That trail will be completely rebuilt in the Sellwood Bridge project and the entrance to Macadam Bay will be relocated a little north. Public parking will remain.

*Owned by Portland Parks & Recreation*

*Leased to Macadam Bay*



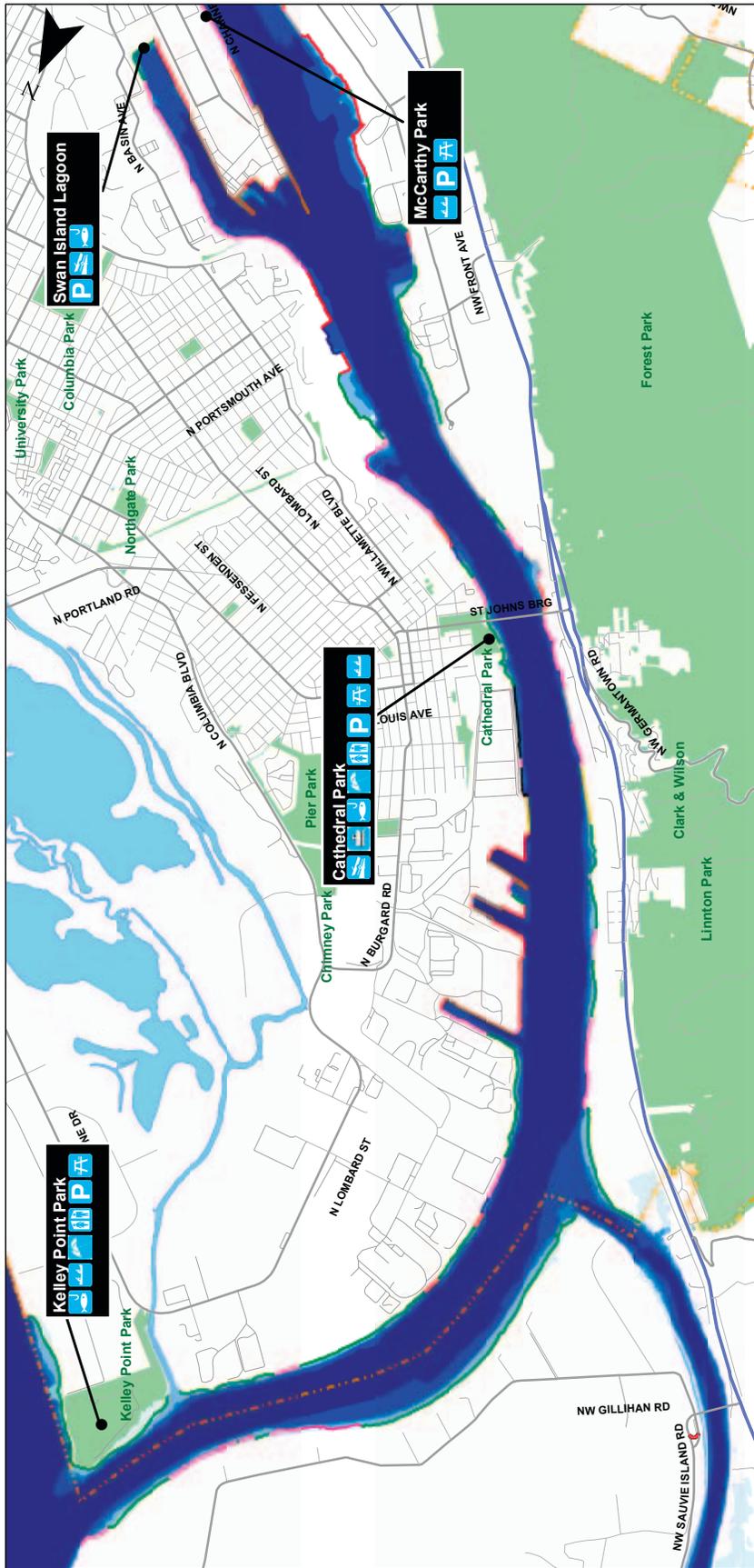
### Willamette Park – Boat Ramp

The largest boating facility on the Willamette is located in southwest Portland and the overall river park setting is stunning. The boating facility includes a 6-lane boat ramp, ample parking, restroom, beach, and kayak access. The facility location is ideal for recreational boaters, paddlers, and fishermen. It is the most heavily used boating facility in Portland. The park includes a picnic shelter, soccer fields, tennis courts, a play area, and bike trails.

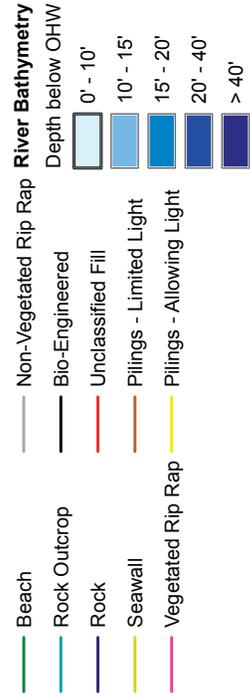
The City is currently seeking a permit to dredge sediment from the base of the boat ramp to restore full functionality to the facility.

*Owned and managed by Portland Parks & Recreation*





### Willamette River Recreation Strategy North Section





## FACILITY CONDITIONS AND ASSET MANAGEMENT

### Quality of facilities and experiences

The relationship of facility condition to the quality of the river recreation experience is critical. If a facility is not deemed clean and safe, or its location convenient, then it will be underutilized and undervalued by users. The Willamette is a working river and it serves an entire community of boaters who are using it for different reasons.

- The function, size, and condition of a facility influences the range of opportunities and experiences available to the user.
- The City needs to proactively maintain existing facilities to protect the City's investment and the public's ability to access the river.
- Certain facilities and areas of the river have high noise levels that intrude on the quality of the experience for non-motorized and shoreline river recreation users.
- Peak demand times can stretch the limit of facilities and create waiting times, parking shortages, overcrowding, and frustration.

Portland facilities on the Willamette are experiencing a host of problems voiced primarily by the motorized boat respondents. Concerns from facility users included:

- Lack of short-term tie-ups.
- Not enough boat trailer parking.
- Boarding floats not long enough.
- Long delays to use boat ramps.
- Lack of maintenance at launches.
- Lack of adequate or open restrooms.
- Parking fees too high.

### Developing a systemwide asset plan for boating facilities

Inventories, inspections, maintenance, and replacement scheduling are the heart of asset planning. Over the last two years, the physical condition of the public boating facilities on the Willamette has been more thoroughly documented by Portland Parks & Recreation. As we work toward producing an Asset Management Report, all the technical information will be combined with realistic cost estimates for improvements. In addition, a schedule for regular maintenance needs to be funded and implemented and the asset inventory needs to be regularly updated with annual inspections. Marine facilities need underwater inspections, specialized maintenance, and staff knowledgeable in regulatory permitting to provide for their short- and long-term care.



Madison Street dock

# User Trends, Emerging Preferences & Directions

## KEY POINTS

In assessing Portland's river recreation opportunities during the course of Strategy development, several considerations stood out:

- There is great value in conducting regular interval surveying and continually studying trends to assess recreational preferences, resulting in a much-improved ability to justify developing new or replacing existing facilities. The combination of data from the OSMB triennial survey and the City of Portland survey will provide guidance for assessing river recreational needs.
- Facility planning is becoming more challenging in the environmental regulatory climate of the federal Endangered Species Act. Longer planning time frames make it difficult to respond quickly to user trend shifts.

## TRENDS

Boating use on the Willamette in the Portland area is increasing for all boating segments. In fact, Portland is one of the few areas of the state where boating use is growing – and it is growing at a notable rate. The consistent and reliable data from OSMB's triennial survey provides an ongoing baseline to measure user demand in the motorized segment. Currently, the same degree of information is not available for non-motorized, light watercraft users. Filling the information gap for non-motorized boater use and demand will be addressed in future research.

Motorized boat use in the Portland area increased by 28.3% from 2007 to 2010. The OSMB survey indicated 83,559 boat use days from Willamette River and Multnomah County access points in 2007; that was up to 110,258 in 2010. Outside of the Portland area, boat use declined statewide.

The OSMB survey indicated that personal watercraft (PWC), such as Jet Skis, showed an increase in the Portland area. Approximately 5,608 PWC use days were recorded in 2010 as compared to 2,307 in 2007. According to the 2010 survey, PWC represented 6.2% of the overall activities by boaters of all kinds.

According to survey statistics, boating use on the Willamette in the Portland area is increasing in all motorized boating segments. For 2010, that increase was due in large part to the excellent spring Chinook run.

### How Boaters Use the River

Fishing is the predominant use by motorized boaters. According to OSMB, two thirds of boaters in the Portland area were focused on this activity, compared to only a third for cruising. Use of the river by boaters does vary season to season. Fishermen tend to have a higher repeat use rate and access facilities more often during the course of the year. The greatest percent of recreational cruising and water skiing occurs during the summer.

Although local survey data on the extent of non-motorized use and preferences is currently limited, the 2004 *Oregon Statewide Trail User and Non-Motorized Boater Survey* conducted by The Oregon Parks and Recreation department provides some high level information that applies to the Portland area. Most paddlers prefer day trips of 1-10 miles. Paddlers value signage, maps, and trail guides that help them locate a destination where they can land to walk, fish, or picnic. Preferences were not broken down into urban or natural shore activities; this would be interesting data for Portland. Refining and updating non-

## User Trends, Emerging Preferences & Directions

motorized user preference information for the Portland area is defined as a key next step in the Strategy and will inform both future river programming and facility planning.

Clubs housed at the Portland Boathouse and Willamette Sailing Club are tracking class and membership numbers; popularity has increased annually. For example, weekend regattas at Willamette Sailing Club can attract as many as 200 sailors from around the Northwest. DragonSports has over 1,000 members on 35 different teams and they race dragon boats all year. Wasabi has approximately 400 members. Efforts will continue to consolidate club membership and class information on non-motorized users to provide a clearer profile for programming and facility planning. Non-motorized users and competitive paddling and rowing groups access the river throughout the year with May to October the high season.

While fishing is a popular pasttime on the Willamette, unfortunately no definitive statistics are available for shore fishing. Fishing docks at Cathedral and Sellwood Riverfront parks and the beaches at Kelley Point Park are popular fishing locations.

The implementation of a “No Wake Zone” in the Holgate Channel has increased non-motorized traffic in that segment of the river.

### Where Boaters Use the River

The OSMB triennial survey breaks down boating activities by individual site. The survey is a valuable tool, but not all boaters take it. The survey does not account for all the potential access points for non-motorized light watercraft on the Willamette, but it provides a sense of how the intensely developed motorized sites are used. OSMB surveyed Portland’s three boat ramp facilities and the fishing dock at Sellwood Riverfront Park. The following is percentage breakdown of uses at each facility.

### General Boating Trends

Site	Cathedral Park	Swan Island	Willamette Park*	Sellwood Riverfront
Use days	33,922	17,528	38,761	1,463
Fishing	88%	73%	46%	100%
Cruising	8%	27%	67%	NA
Personal watercraft (PWC)	3%	NA	12%	NA

Note: Use days are ‘all or part of a day’ a boat is used. A three-day visit to a lake where the boat was used each day would be one trip and three use days.

\* The activity days for Willamette Park are significantly higher than use days (48,443). This means people completed more than one activity during one visit. The other sites did not reflect this mixed use.

In the City of Portland’s non-scientific survey of river users (detailed in the next section), boaters who primarily fished indicated they enjoyed using the entire length of the river through Portland. Both non-motorized and cruising boaters enjoyed spending more time south of the Marquam Bridge. The following trends remain consistent with the City’s 2006 report:

- Boat slips in Willamette River marinas remain full during the summer months.
- Fishing remains by far the most popular motorized boating activity in the Willamette.
- Multnomah County is the biggest motorboat use area in the State of Oregon.

- Fuel and operating costs for motorboats continue to increase.
- Many people seeking boating experiences are turning to non-motorized alternatives. This use is visibly increasing on the Willamette in Portland, particularly in downtown.

### ZEROING IN ON PORTLAND – THE CITY’S WILLAMETTE RIVER BOATING SURVEY

The Oregon State Marine Board conducts a statewide survey of boater use every three years which yields critical data for management at the state and regional level. For this Strategy, the City of Portland sought additional information to zero in on Portlanders’ Willamette experience.

The City conducted its survey online in late April 2011. Nearly 1,600 people took the survey and provided over 2,200 comments. The survey provides a qualitative, unscientific view of some of the outlooks and preferences of Portland’s boating community. In terms of broad brushstrokes, the survey response is revealing and provides useful indicators for planning the future recreational use of the Willamette.

Motorized fishing boats were the most commonly-reported type of craft (36 percent). Other major boat types included kayaks (22 percent) and dragon boats/crew shells (23 percent). About 10 percent of respondents indicated they used a canoe. The *most popular* (highest participation) on-river activities were pleasure-boating, fishing, personal exercise, viewing events, and racing/competition. The activities that people spent the *most time* enjoying included fishing, personal exercise, pleasure-boating, sailing, and racing/competition.

In response to questions about launch sites, the results indicate a significant number of boaters enter the Portland reach of the Willamette both from upstream locations (e.g., Sport Craft in Oregon City; Milwaukie; Clackamette Park) and downstream from the Columbia and Multnomah Channel (especially Portland Yacht Club, Fred’s Marina, and the Gleason facility.)

There appears to be two primary geographies of use – some users (about 40 percent of respondents) focus on the area south of the Marquam Bridge, while an equivalent number of others make the entire river their playground, distributing their use over several stretches of the river.

When presented with a number of potential future river-access destinations, the sites respondents said they’d be most likely to visit include Ross Island, RiverPlace, and South Waterfront. A little over half of those taking the survey believed their use would increase over the next five years, and about 40 percent thought it would stay the same.

Respondents indicated a strong interest in improving or developing new facilities. Concerns relating to existing facilities included the need for more parking, improved dock and ramp maintenance, effective security, and restroom availability. In terms of new facilities, respondents indicated a need for more transient tie-ups, and more river-based access to commercial and retail services.

Taking all uses together, the survey suggests that most people have an enjoyable time on the water – nearly a quarter said they were highly satisfied with their experience. However, boaters identified a number of problems. For example, many boaters were concerned about the Willamette’s water quality and dirty riverbanks (75 and 62 percent, respectively). And about half of all respondents believed channel hazards were a moderate or severe problem.

Improving law enforcement was also a common theme. Over 70 percent feel that people who don’t

## User Trends, Emerging Preferences & Directions

follow the rules represent a moderate or severe problem. Excessive boat wakes (63 percent) and speed-limit violations (54 percent) are viewed as moderate or severe problems. In addition, boaters expressed a strong interest in improving security, especially to address problems caused by people who tie up their boats and camp out semi-permanently on public docks.

Many respondents also recommended improved boater education, through better publicizing boating rules, increasing dock/boat ramp skills and etiquette, improving understanding of how wakes affect others, and improving signage (dock rules, rules-of-the-road, etc.).

The experiences of motorized and non-motorized boaters differ sharply in key ways: motorized boaters mostly fished, while non-motorized boaters mostly exercised (including through team-based sports such as dragon boating). Motorized respondents spread out more along the river – over 50 percent indicated their use was not concentrated in any one stretch, compared to about 70 percent of non-motorized respondents who said their use was concentrated upstream (south) of the Marquam Bridge.

In general, non-motorized boaters reported having problems with on-water conflicts (speed, wakes, noise) and were more interested in increasing levels of law enforcement. Motorized boaters generally expressed that they were concerned with facilities (availability, security, parking, condition, availability of long-term tie-ups) and were more interested in improving and building new facilities.

Motorized and non-motorized communities also shared some common perspectives. Both groups are having similar river experiences – about 24 percent of motorized boaters and 23 percent of non-motorized indicated they were highly satisfied with their Willamette experience.

Both groups spent significant amounts of time (16 or more hours per year) bird-watching (motorized: 40 percent; non-motorized: 45 percent); and pleasure-boating (motorized: 70 percent; non-motorized: 50 percent). Motorized and non-motorized respondents held similar views on a lack of natural areas or picnic areas to access from the water – more than 40 percent of each group felt it was a moderate or severe problem.

Both groups found unsightly or dirty riverbanks and poor water quality to be moderate or severe problems: dirty areas (motorized: 60 percent; non-motorized: 66 percent) and water quality (motorized: 72 percent; non-motorized: 80 percent). Both groups indicated that current levels of law enforcement represented a significant issue – about 41 percent of motorized and 54 percent of non-motorized thought it a moderate or severe problem.

Finally, both groups had very similar responses regarding use trends. Over half of each group indicated their use would increase. About 38 percent of motorized boaters and 46 percent of non-motorized thought their use would stay about the same. Five percent of motorized and three percent of non-motorized believed their use would decrease.

**Motorized / Non-motorized: Problem perception varies**

Severity of select issues, showing percent response by user category with areas of differing perception highlighted.

<b>Issue</b>	<b>Problem</b> (“Moderate” or “Severe”)	<b>Not a Problem</b> (rated “Not Severe”)
<i>Excessive boat/exhaust noise</i>		
Motorized	21	79
Non-Motorized	73	27
<i>Excessive radio/stereo noise</i>		
Motorized	31	69
Non-Motorized	63	37
<i>Excessive boat wakes</i>		
Motorized	43	57
Non-Motorized	86	14
<i>Speed limit violations</i>		
Motorized	37	63
Non-Motorized	75	25
<i>Lack of dock/ramp courtesy</i>		
Motorized	54	46
Non-Motorized	23	77
<i>People boating while intoxicated</i>		
Motorized	32	68
Non-Motorized	54	46
<i>Lack of launch site maintenance</i>		
Motorized	50	51
Non-Motorized	18	82
<i>Not enough boarding floats</i>		
Motorized	48	52
Non-Motorized	14	86
<i>Lack of adequate law enforcement</i>		
Motorized	41	59
Non-Motorized	54	46

**PROGRAMMING NON-MOTORIZED RIVER RECREATION**

Boaters bring their own equipment, time frames, and personal preferences to the river. Fishermen like the early mornings and go boating rain or shine. Recreational motorboaters enjoy the sun and are most active in the summer season. More and more people are seeking opportunities to sit close to the water and paddle or row. The non-motorized pace is slower and the focus more on personal exercise and nature observation. The goal is to ensure adequate space and facilities for all of these activities on the Willamette.

The Urban Greenspaces Institute, Portland Audubon, Willamette Riverkeeper, Next Adventure, Alder Creek, and Portland Kayaks offer tours, classes, and stewardship opportunities both individually and under the umbrella of Portland Parks & Recreation’s Outdoor Recreation program. Portland Parks & Recreation assists with scheduling and advertises classes and tours. But, the actual programs are run and operated by an amazing coalition of nonprofits and boating companies that are committed to bringing

## User Trends, Emerging Preferences & Directions

people onto the river. This public-private partnership in recreation planning leverages resources to keep the river active and the public engaged at a reasonable cost.

The 200-member Willamette Sailing Club has been the center for small boat sailing in Portland since 1961. The club hosts a busy year-round schedule of racing, cruising, and learn to sail programs, as well as a number of river-related social and educational events, all of which are open to the public. Each summer, more than 600 youths and adults learn sailing, water safety, and river adventuring skills. The club also serves as headquarters for local youth and college sailing teams.

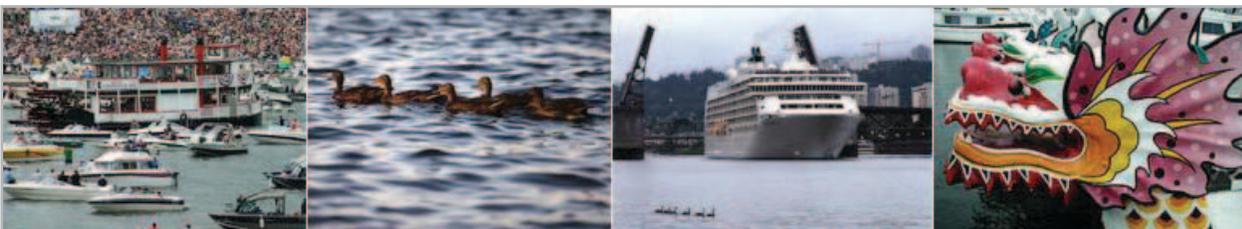
The community boating model on the Willamette is exemplified by the Portland Boathouse, which includes seven non-motorized light watercraft and river-focused organizations, and operates from a separate non-motorized dock south of the Hawthorne Bridge. It has been estimated by the Boathouse that 200 people per day use this dock in the summer. The dock is a public facility.

Organizations which comprise the Boathouse collective include:

- Alder Creek Canoe & Kayak – sales and rentals
- Willamette Riverkeeper – environmental advocacy, tours, education
- Rose City Rowing Club (youth rowing for 150 students from 30 schools)
- Portland State University and University of Portland Crews (50 participants)
- Wasabi Paddling Club – dragon boats and outrigger canoes (400 adults and juniors)
- Station L Rowing Club (approximately 250 participants)
- Willamette Rowing Club, Oregon Rowing Unlimited, Portland Women’s Rowing, and Portland Boat Club (150 participants combined)

The Portland Boathouse provides a diversity of experiences for members and the public through access to dragon boats, canoe and kayak rentals, rowing, outrigger canoes, classes, and guided local tours. Outreach to youth is particularly impressive; for instance, Rose City Rowing Club membership includes 30 schools.

Additionally, there are special events at the river’s edge celebrating river access. Examples include the Portland Triathlon and the Big Float which are promoting a swimmable Willamette. These events are engaging people to celebrate water quality improvements resulting from investment in the Big Pipe project. More people are now willing to jump in the river and the desire for more swimming opportunities is growing. Swimming options and beach access will need to be considered in future river recreation planning.



# Boating and Waterway Issues

The increasing numbers of Willamette River users and the growing diversity of use have given rise to a variety of conflicts. These involve frictions between boaters, as well as incompatibilities between recreational use and habitat protection. Difficulties in sharing the river among all its users – people, fish, and wildlife – have been documented in the City of Portland’s 2006 *Water Recreation Report and Recommendations*; the Oregon State Marine Board’s 1995 *Recreational Boating Management Plan for the Portland Metropolitan Waterways* and its triennial surveys; and the 2011 City of Portland boating survey. This Strategy offers new avenues for recognizing and addressing these issues.

Resolving the issues will involve many public agencies; it may first be helpful to explain the roles of the key public agencies and organizations charged with managing different aspects of river recreation, as well as river navigation for commercial and industrial uses. Recreating on the Willamette is remarkably diverse, and is subject to many regulations and programs, which is why the Strategy puts a premium on partnerships. The City hopes to promote more integration and collaboration to improve boating safety and increase enjoyment of our river. The table below describes the major roles of key public agencies that play a major role in managing, and providing for, Willamette River recreation.

U.S. Coast Guard (federal)	
Station Portland	Primarily responsible for search & rescue, and homeland security. Conducts 600 boardings and over 150 search and rescue missions annually. Also performs recreational boating safety and environmental protection duties.
Marine Safety Unit	Responsible for executing the Coast Guard’s Port Safety and Security, Marine Environmental Protection, and Commercial Vessel Safety missions under the auspices of the Department of Homeland Security.
Auxiliary, Flotilla 73	Uniformed civilian element of the Coast Guard whose primary mission is recreational boating safety. Patrols the Willamette from Oregon City to Kelley Point, and the Columbia from Bonneville Dam to St Helens. Helps manage major maritime events, barge launches, “make way” patrols for commercial shipping, and marine safety/security patrols.
Multnomah County River Patrol (county)	The largest marine enforcement unit in Oregon, the River Patrol performs law enforcement and boat safety inspections, emergency medical and boater assistance, boating and water safety education, dive rescue and recovery, removal of hazardous materials, tug escort, and firefighting on the Willamette, Columbia, and Sandy rivers.
Portland Fire & Rescue (city)	The Fire Bureau operates a marine response unit (with one fireboat each on the Willamette and Columbia rivers), performs both water rescue and dive rescue, and through the Harbormaster enforces floating structure codes and performs inspections of docks, ships, and repair operations.
Oregon State Marine Board (state)	Oregon’s recreational boating agency. Collects marine fuel tax and title and registration fees. Funds boating safety programs, marine law enforcement, and improved boating facilities. Establishes statewide boating regulations and contracts with county sheriffs and the Oregon State Police to enforce marine laws. Provides grants and engineering services to local governments for accessible boating facilities and water quality protection.
Portland Parks & Recreation (city)	Primary manager of City-owned boating facilities and riverfront parks, including the City’s most heavily used facilities, Cathedral Park and Willamette Park. (See the inventory section for a more complete listing.)

## Boating and Waterway Issues

### ENVIRONMENTAL IMPACTS

Along the 17 miles of the Willamette in Portland, river recreation and environmental protection not only can coexist, but can be mutually beneficial as well. This does not mean, however, that the two are perfectly compatible in every location or at every time. River recreation can present challenges to protecting habitat and improving river health. As previously described, human activities along the Willamette have been intense, with severe consequences for Portland's fish and wildlife. Today's increasing recreational use of the Willamette comes on top of more than a hundred years of other impacts that have decimated habitat.

In light of these cumulative effects, and because the Willamette is a critical migration corridor for salmon and steelhead, waterfowl, and neo-tropical birds, protecting remaining riverine habitat – and creating more – has become increasingly important. These protective efforts play out in various permitting processes where projects are reviewed for compliance with the federal Endangered Species Act, the federal Clean Water Act, Oregon's Willamette Greenway land use goal, state and federal water quality regulations, City of Portland environmental codes, and the Lower Columbia salmon restoration plan.

In weighing how to manage river recreation within the context of restoring river health, the City and other agencies charged with species protection consider a range of possible impacts. These include:

- Over-water structures (e.g., docks, boarding floats, ramps) can create inviting habitat for fish that prey on young salmon, or introduce wood-preserving chemicals into the water.
- Boat wakes can disturb shallow water habitat and cause bank erosion.
- Gas and oil from boat motors can enter the water.
- Noise (from motors, music, propellers, voices) and motion from boats can stress fish, especially in shallow water areas.
- Garbage and human waste can enter the water due to carelessness or misbehavior.
- Recreation area parking lots, driveways, picnic spots, and other areas of intensive use can contribute to stormwater issues and affect riverside habitat.

Understanding how docks and overwater structures affect the river environment has become increasingly important for the agencies charged with safe-guarding and recovering populations of Willamette salmon species listed as threatened under the federal Endangered Species Act.

Over roughly the last decade, building or expanding recreational docks and other boating facilities on the Willamette has become more difficult. Because they are built on riverbanks and extend over the riverbed, these facilities require permits from the state and federal agencies that own or oversee these lands on behalf of the public – namely, the Oregon Department of State Lands (DSL) and the U.S. Army Corps of Engineers (Corps).

To protect the resources placed in their care under the law, these regulatory agencies are being ever more careful before approving activities that can affect Willamette salmon and steelhead. Consequently, permitting has become more time-consuming, and less predictable, for project sponsors. A number of public recreational dock projects have been delayed or discontinued because of permitting difficulties (e.g., Ankeny Dock redevelopment and South Waterfront dock construction).

This Strategy seeks to address the primary issues surrounding dock permitting by providing a comprehensive context for dock siting based on the City's recreational needs and policies (answering 'the why'), developing principles to guide dock siting ('the where'), and establishing guidelines on dock design and operation ('the how'). It is hoped that this approach will be embraced by the City and its state and federal regulatory agency partners.

In summary, the City proposes to employ this framework and take a very careful, alternatives-based approach to evaluating the need for and siting of future construction or expansions of boating facilities. If construction or expansion is needed, the framework then lays out 'green' design guidelines for building facilities with minimum impacts to fish and wildlife. This issue and the framework are described in detail in Appendix A.

### SAFETY AND WATERWAY USE CONFLICTS

As boating use – and the diverse types of use – has increased, so too have waterway conflicts. In the Oregon State Marine Board's 2008 *Boating in Oregon, Triennial Survey Results*, the Willamette River ranked among the top five waterbodies in the state in terms of law enforcement issues (e.g., excessive noise or speed, intoxicated operators, reckless operation). The 2011 survey results (in press) indicate that in Multnomah County about 20 percent of boaters had a near-collision with other boats or people, and 17 percent had conflicts or disagreements with other boaters. There also appear to be 'hot spots' where conflicts or safety issues are paramount:

- River channel crossing (from Willamette Park to Ross Island) can be difficult for paddlers.
- These areas near downtown Portland can become congested, especially during the summer months:
  - o the east to west side crossing south of Hawthorne Bridge.
  - o the route to and from the Holgate Channel is very popular with dragon boaters and rowers.
- The south half of the Holgate Channel, a sensitive natural and wildlife area, is a newly-designated Slow/No Wake Zone and is popular with paddlers. It is also frequently traveled by motorized craft whose operators may not be fully aware of new wake restrictions.

It is worth noting that existing law enforcement resources are stretched very thin. The Oregon State Marine Board provides about 30 percent of the funding for the Multnomah County River Patrol, the primary on-river law enforcement organization in the Portland area (statewide, over 40 percent of Marine Board boater funds are allocated for law enforcement). However, that support has been decreasing and is expected to continue to shrink. One of the recommendations of this Strategy is to convene law enforcement organizations to explore new or strengthened partnerships to provide enhanced enforcement and education on the river.

Given the challenges relating to enforcement and the growing numbers of river users, it is critical that all boaters have a thorough working knowledge of their responsibilities, including compliance with speed limits, wake restrictions, rights-of-way requirements (especially important in the navigation channel of the working harbor), and all other aspects of safe vessel operation.

This Strategy's section on Immediate Next Steps includes several actions to increase safety through enhanced enforcement and improved education. These will build on existing resources relating to safety, including the following websites: the [Oregon State Marine Board Safe Boating](#); the [Coast Guard Auxiliary](#); and the [Multnomah County River Patrol](#).



Willamette Sailing Club

# Recommendations – the Next 15 Years

## BUILD ON EARLIER DIRECTION, RESPOND TO NEW DEMAND

This Strategy builds on the recommendations of the City's 2006 *Water-based Recreation Report*, which still offer valuable planning guidance. A number of those recommendations are endorsed:

- Fully utilize or expand existing facilities where feasible and appropriate.
- Provide facilities that meet future demographic trends, needs, and preferences by developing new facilities where there are identified gaps or where capacity has been maximized.
- Improve opportunities for shoreline fishing access in areas that are not environmentally vulnerable.
- Seek creative financial partnerships to build what is needed, including commercial endeavors, corporate sponsorships, grants, and donations. Look at increasing user contributions to maintain facilities.
- Develop a lifecycle asset management program for all of the City's public marine facilities to include capital improvements, major maintenance, replacement, disposal or decommissioning, and timelines.
- Develop awareness of the importance of the river to Portland's tourism and hospitality industries.
- Provide for universal accessibility at new and remodeled facilities whenever possible.
- Apply sustainability principles in all new and renovated facilities such as energy efficiency, water conservation, innovative stormwater management, and most important, fish-friendly design by using green technology and materials.
- Continue to provide programming opportunities that encourage public access to the river: work with other providers to supply regional and/or specialized river-based recreation facilities to spread cost and responsibilities.

Recent trend information from the Oregon State Marine Board's 2010 triennial survey and the City's 2011 survey shed a new light on how the recommendations above should blend with new directions to meet growing demand, and suggest the following guiding principles for facility planning:

- Underscore that the location of future facilities needs to be strategic and fit into an overall system plan, as well as advance the City's commitment to environmental protection.
- Weigh the benefits of separate launch sites (activity nodes) for non-motorized boaters in order to increase safety, promote community, and reduce conflicts with motorized boaters, especially at high-use sites such as Willamette Park.
- Recognize that the Holgate Channel appears to be attracting more non-motorized boaters and stewardship tours, and that easy access from the south makes launching from Sellwood Park very convenient.
- Understand that demand by motorboaters for additional transient docking opportunities and more destinations to enjoy has increased.

As a comprehensive approach, there is great value in both planning specifically for the short-term and more generally for the long-term. The changing issues and trends shaping river recreation and access require the City to remain flexible and open in its planning process. This document provides a working plan which will be detailed out as individual project planning takes place. The specifics of a proposed project – the how, when, and what – are still to be determined, but every proposed project will include opportunity for public and stakeholder review and comment.

## Recommendations – the Next 15 Years

### MEETING GAPS IN SERVICE, FACILITY IMPROVEMENTS & FUTURE NEEDS

Specific actions are proposed to meet City goals for river recreation in the next five to 15 years. The actions are intended to balance the service levels identified by user demand information described in this report. The proposed actions are intentional with regard to filling facility location gaps in the overall river recreation system.

#### Taking Care of What We Have: Projects Recommended to Improve Existing Facilities

This Strategy cannot stress strongly enough the need to take care of existing boating facilities on the Willamette. Priority should be placed on capital expenditure to repair or renovate existing facilities to maximize operating capacity, keeping them safe and secure for users of all ages and boating persuasions.

The recommended improvements for existing facilities are based on a systemwide analysis of City-owned facility condition, user demand, and service gaps.

- The City needs to protect and preserve its three motorized boat ramps because they are essential public safety and recreation access points. The goal is for a no-net-loss of this resource.
- Developing clear criteria will help determine how a new development will contribute to an increased service level for all users in the system while minimizing and mitigating environmental impacts.
- The City needs to continue to explore diverse funding sources to help maintain and renovate existing facilities.
- Future renovation and planning for new motorized facilities will include evaluation of boat trailer and car parking, restrooms and the feasibility of providing marine pump out service.

#### ***Proposed Projects within 5–15 Year Timeframe***

##### ***Willamette Park Dredging, Toe Ramp Repair, and Debris Boom***

The Willamette Park boat ramp facility needs to be dredged. The launch-and-retrieve operations are hindered by the sediment build-up, particularly in low water. There are some additional problems with drop-offs at the toe of the ramp and a need to repair the existing debris boom (which is contributing to the siltation). All permit work, design, and environmental testing to obtain a 10-year dredge permit is underway. Once the permit is in place, the challenge is to locate the funds to accomplish the dredging, repairs, and relocation of the silt. All this must be accomplished during the allowed in-water work window (August 15-October 31).

A Willamette Park improvement plan, scheduled to begin in 2012, will inform (but not determine) future improvements for the boating facility (both upland and in-water). When funding becomes available, a plan for boating facility improvements will result from collaboration among boaters, residents, the Oregon State Marine Board, regulating agencies, and other potential funders.

##### ***Swan Island Boat Ramp Boarding Float Replacement***

Swan Island is a very popular launch area for fishermen and provides critical overflow space for Cathedral Park. The two-lane boat ramp requires replacement of its boarding floats.

##### ***Cathedral Park Boat Ramp Facility Renovation and Master Plan Implementation***

The Cathedral Park boarding floats and transient dock are past the normal timeframe for replacement. Cathedral Park is the priority site recommended for capital investment in this study. Primarily used by

smaller, motorized boats, the site is also essential for public safety and research, and provides access for industrial marine services to Portland Harbor.

The 2009 *Cathedral Park Master Plan* proposed some very positive changes to both the boat ramp facility and the existing fishing dock as part of a major park renovation. A full boating facility renovation plan will need to be prepared using the guidance of the master plan.

Key in the master plan is separating the motorized, beach, and non-motorized uses in the park. The location of the boat ramp and parking lot remain unchanged. Access to the beach is expanded and the beach area would be renovated for public use. The current fishing dock would be replaced by a multi-use facility serving fishing, river viewing, and kayak launching.

A new restroom is proposed on the south end serving these uses. Ample parking for non-motorized boaters and park users is currently available. A more detailed analysis of the plan is available on the PP&R website under Cathedral Park Master Plan. <http://www.portlandonline.com/parks/index.cfm?a=226678&c=51821>

#### ***Madison Street Dock***

Portland Fire & Rescue is proceeding with plans to reconfigure the Madison Street dock to include facilities for fire and emergency services, while still providing public access.

#### ***Sellwood Riverfront Park – Dock Replacement***

The Sellwood dock is not highly used as a transient dock; currently it is popular for fishing and kayak launching. The future of the facility is somewhat dependent upon the planning and design outcomes for recreation uses at the Staff Jennings site and the concept for a potential non-motorized shore launch at the terminus of SE Spokane St. A planning process for the Staff Jennings site will take into account surrounding boater resources.

#### ***McCarthy Park – Non Motorized Access Path***

The design of this linear park on Swan Island included two paved pathways into the river. Both paths have suffered erosion and debris damage at the river's edge. With the toe of the path undercut, it's a challenge to launch a kayak or canoe, but the potential for doing so is apparent. The strategy recommends working with the Port of Portland, Swan Island, and interested boaters to repair and rebuild the southernmost toe of path at the water's edge. The first step is to do an engineering analysis of the problem and a review of permitting regulations, costs, and timeframe. If the path is not extended, it will be considered a maintenance and repair project.

### **PROJECTS RECOMMENDED TO MEET NEW RECREATION DEMANDS**

Meeting changing river recreation user profiles and building out a balanced and equitable system for all users requires planning and preparation to begin within five years. The initial priorities described below should be the subject of formal consideration, and eventually, where warranted, design and construction.

River recreation facility planning should be guided by the following:

- Funding resources are very limited for boating and river access improvements on the Willamette; money needs to be spent wisely and fairly.
- Planning for projects needs to consider timelines for the regulatory permitting process and be cautious about adding more structures to the river.

## Recommendations – the Next 15 Years

- The City needs to plan, design, and build facilities which fill gaps in service, documented by user demand, or which can serve the most users with the least impact.
- Future planning, design, and construction need to be consistent with current literature and agency guidance on environmentally-sensitive design, and appropriate location and size of proposed new facilities, especially regarding protection of species listed under the federal Endangered Species Act.

### FILLING SERVICE GAPS

The recommendations below are meant to address the identified gaps in existing boating facilities. As a group, they round out the current river recreation system to create a more comprehensive network of facilities, offering more opportunities for people to access the river at new locations either by motorized or non-motorized means. These new facilities will be supplemented by repairs and upgrades to existing facilities to maximize their use and the positive experiences of all boaters.

#### ***Proposed NEW Recreation Facilities in 5-15 Year Timeframe***

##### ***Ankeny Dock Replacement***

The proposed replacement of Ankeny Dock highlights the need for a public dock which can serve as a west side river gateway to Waterfront Park. The existing public dock is closed. The dock's current location is advantageous in its proximity to the new Saturday Market plaza. However, the existing dock location has design and accessibility challenges. The proposal here is to examine the potential use of the Salmon Springs dock area for a combined commercial and public dock. The lower sea wall access to the river may help reduce the amount of over-water structures required for ADA accessibility. The location is central to downtown cultural activities, shopping, and eateries, as well as transportation alternatives such as public transit and bike rental.

The lease agreement with tour company American Waterways (Portland Spirit) allows another use at Salmon Springs with their approval. The property arrangement must be negotiated and creating a workable concept will take financial resources that are currently unidentified.

The sea wall along the west side of downtown offers few opportunities to provide more boating access. Replacing Ankeny Dock is a priority; the work should begin with searching for the best location for a replacement dock.

##### ***SE Spokane Street Light Watercraft Node***

This new river recreation opportunity on the east side of the river is conceptually linked to construction of the new Sellwood Bridge. The terminus of SE Spokane Street was once an active ferry landing. Today the end of the right-of-way is unimproved rubble and weeds.

A new outfall is planned at the street's end. If construction timelines can be coordinated and funding located, it may be possible to redevelop the right-of-way (at the water's edge) as a gravel/sand non-motorized launch and landing site.

The bridge project may also potentially result in remnant land becoming available near the river for trailhead parking that could serve both Willamette River Water Trail and the Springwater Trail users.

Finally, the concept offers the opportunity for a positive collaboration between Portland Bureau of Transportation, Bureau of Environmental Services (BES), Portland Parks & Recreation, and others to create a public recreation site that restores habitat and provides non motorized boating access.

***South Waterfront District – Public Dock***

A dock has always been envisioned in the South Waterfront District. The challenge is to locate it carefully with respect to environmental conditions, resident concerns, and proximity to public access and parking.

Boaters of all types have expressed an interest in visiting the district by boat – to shop, eat, walk, and picnic. Residents and paddlers have expressed an interest in a low freeboard dock for easy access to Ross Island and the quiet shoreline of southwest Portland.

Early planning work for locating a dock has begun and can expand once funds are identified for permitting, design, and future construction. The search for the best location will be district-wide. In the end, a dock will be a valuable asset to the overall river recreation system, providing water access for non-motorized users and shore access for any type of visiting boater.

***Former Staff Jennings Site***

Certainly one of the most exciting recreation opportunities which may result from building a new Sellwood Bridge is the potential transfer of the former Staff Jennings property and dock facility to the City from Multnomah County. The plans for a future the upland park site, beach launch, and transient dock access are only conceptual, but they fit solidly into the larger system vision.

The old ferry landing at the right-of-way terminus is currently an unmaintained boat ramp that formerly served Staff Jennings. The ramp will be removed and a gravel/sand landing area is proposed for non-motorized boaters. The upland area at the site would become a passive recreation site for picnicking. People will arrive by foot, bike, kayak, or motorboat, but not by car. The outer dock facility may be retained as a transient public dock. In addition, there will be bank and habitat restoration opportunities. Some land may be reserved for stormwater treatment.

The planning process may begin as early as 2012 and improvements will follow depending upon the timing of the property transfer and available funding.

***Waterfront Bowl Beach Access***

The Portland Triathlon and the Big Float events have raised the profile of swimming in the Willamette River. 2011 saw the completion of the Big Pipe project which will greatly improve the river's water quality. Currently, there is growing interest in providing beach access along the Willamette – specifically for swimming. The bowl area in Waterfront Park has been identified as a potential site. Proposed enhancement of the bowl site as a beach access would need to be consistent with the intent of the Waterfront Park Master Plan.

The strategy recommends that a holistic evaluation of public beach and shore access along the Willamette be undertaken. Providing future safe swimming opportunities along the Willamette will need to protect existing event and boater uses at river parks.

## Recommendations – the Next 15 Years

### LONGER-TERM CONSIDERATIONS

While this Strategy seeks to focus City attention on its river recreation needs over the next five to 15 years, no discussion of the Willamette would be complete without some acknowledgement of the river over a longer planning horizon.

We know from ongoing work and past experience that river recreation opportunities will arise from unanticipated events, as well as from the continually evolving desires of Portlanders. As Portland advances its river recreation objectives over the next decade, a number of other potentials warrant a keen eye, especially as other planning processes proceed or initiate.

- ***Central City 2035 and River Plan***  
The City's River Plan will continue to identify changes needed in Portland's Greenway Plan, as the Central City 2035 process engages the public to assure vibrant interface with the river.
- ***Superfund***  
As the clean-up of the Portland Harbor superfund site kicks in, and clean-up and habitat restoration get underway, there may be discrete opportunities to integrate these projects with river access improvements.
- ***The North Reach***  
As the economy recovers and the area undergoes growth, the City should look for opportunities to create new river access points, for example, near Linnton.
- ***Rose Quarter***  
As planning for the Rose Quarter continues, the feasibility of improved river connections may become much clearer.
- ***West Hayden Island***  
The planning process has identified the potential for passive shoreline recreation opportunities in the natural area reserve owned by the Port of Portland. The process is in very early stages, but could provide future benefit to river recreation users.



Great blue heron

# Funding Challenges

One of the most important lessons of the last five years is the need for the city to diversify its funding sources for maintaining and developing water recreation facilities along the Willamette. In 2011, Portland Parks & Recreation completed an asset inventory of the dock facilities it owns and, unfortunately, found that several facilities are past their replacement life.

Repairing public boating facilities is expensive and securing funds is challenging, especially during difficult economic times. The City has sought to partner with other public organizations to repair and improve recreational facilities enjoyed by public throughout the region. Historically, the Oregon State Marine Board (OSMB) has been the premier partnering agency for local governments to turn to. However, efforts to partner with OSMB on facility repairs have been challenging. OSMB is facing diminishing resources, but no less demand. There is stiff competition for OSMB grants, and even if awarded, grant conditions can get “out of synch” with recreation demand, especially with regard to serving diverse boating uses. The timeline of permitting processes for in-water work requires a great deal of upfront money and staff support that is difficult to schedule in a capital improvement planning process.

The short answer is to create a separate replacement/renovation plan for existing facilities and advocate for additional City funding. The longer-term answer is to create a financial plan for this system of facilities and, wherever possible, link ongoing maintenance costs to a revenue stream that plans for timely repair and replacement.

Willamette Park has access to parking revenue resources that can be managed to support the facility. But no other facility has a dedicated revenue stream. This needs to be evaluated. Should all users pay to support these facilities?

Lastly, there is the challenge of diversifying funding partnerships to reflect the broader spectrum of users. OSMB and motorized boaters have provided past investments. However, the continued popularity of recreational boating activity and the growing population of paddlers and rowers on the Willamette suggest a need to identify sources that will support facilities for those activities.

As always, public-private partnerships, such as the Portland Boathouse and its highly-used public dock, suggest there may be viable opportunities to provide more river recreation facilities through shared costs and joint-use agreements. Leveraging funding for the highest return needs to be a refrain among advocates who want increased and improved river access.



RiverPlace Marina

# Immediate Next Steps

The Strategy opens the door for a number of opportunities to address issues that warrant further examination and resolution. Below are three categories which carry on and refine the work of the Strategy.

## RIVER POLICY AND COMMUNITY ENGAGEMENT

### Establish Advisory Committee

*Initiate recruitment for a standing advisory committee on river recreation.*

- Staff a gathering of diverse river experts to explore options for moving elements of the Strategy forward.

### Enhance Waterway Enforcement

*Convene marine law enforcement organizations to identify:*

- Means of resolving on-river conflict, including through new education programs, patrolling, partnerships with credentialed citizens or boating groups (Sea Scouts, enhancing Coast Guard Auxiliary).
- Effective approaches to providing security at recreational facilities and addressing issues of vagrant boats.
- Remedies to address funding problems affecting the integrity and effectiveness of on-river enforcement.

### Evaluate and Improve Education and Recreation Programming

*Cooperatively evaluate the role and reach of river programming and river education with regard to present and future recreation on the Willamette in the Portland area:*

- Convene organizations and interests that provide boats or boating instruction to evaluate how well existing partnerships may be meeting Portlanders' growing river interests.
- Increase understanding of the Willamette as a working river.
- Convene river educators in the region to sharpen collective understanding of the inter-relationship between river recreation and the public's awareness of river ecology, river history, and the river's role in shaping the city.
- Improve availability of river-related information to the public through enhanced signage, electronic media, or other means to increase understanding of the river environment and how to enjoy the river while protecting its resources and other users.
- Identify opportunities to improve river user awareness of the importance of safety, including safe boating on a working river.

### Develop Survey and Baseline Data

- Establish, fund, and monitor a consistent survey and data collection program that identifies river recreational trends, user preferences, and waterway issues.
- Conduct a detailed study of the impact on, and potentials of river recreation to contribute to, Portland's economy.
- Identify and increase public understanding of the economic value of river recreation.

## Immediate Next Steps

### BEST MANAGEMENT PRACTICES FOR DESIGNING AND LOCATING FACILITIES

#### Refine and Test Dock Siting and Design Criteria

*Work with local, state, regional, tribal, and federal agencies; nonprofits; and the public to:*

- Continue discussions and test the latest thinking on the best management practices (BMPs) of dock siting, design, and operation which advance Portland's river health goals.
- Identify how BMPs and the regulatory processes of the City, state, and federal governments can be linked.

### ASSET MANAGEMENT AND FUNDING PARTNERSHIPS

#### Produce an Asset Management Plan for Existing Facilities

- Move forward to the next level of asset planning using technical information combined with realistic project scopes and cost estimates in an effort to bring the existing system elements back to high standards.

#### Develop New Partnership Base to Fund Existing and New Facilities

- Formulate a partnership-based plan to leverage funding necessary to maintain, renew, and develop public recreational facilities on the Willamette in the Portland area.



Cathedral Park

# Appendix A

Through adopted policies, resolutions, budgets, and multiple park master plans, Portland City Council has repeatedly called for increasing the connection between Portlanders and the Willamette. Docks are a critical element of Portland's river connection circuitry. Given present and developing recreational demand – including from the post-Big Pipe recognition of the Willamette as a safe and inviting waterbody – there is a clear and present need to provide for new and improved public river recreation facilities, including docks.

## OVERVIEW AND PROBLEM STATEMENT

Over roughly the last decade, building or expanding recreational docks and other boating facilities on the Willamette has become increasingly difficult. Because these facilities are built on riverbanks and extend over the riverbed, they require permits from the state and federal agencies that own or oversee these lands – namely, the Oregon Department of State Lands (DSL) and the U.S. Army Corps of Engineers (Corps).

In safeguarding the resources placed in their care under the law, these regulatory agencies are applying increasing scrutiny to activities that can affect the salmon and steelhead that live in the Willamette and are listed under the federal Endangered Species Act. This Act prohibits harm to these fish directly (e.g., by injuring them) or indirectly (e.g., by degrading habitat they need).

To determine effects on these species, DSL and the Corps must consult with agencies that manage fish and wildlife and protect the environment, including the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Environmental Protection Agency, Oregon Department of Fish and Wildlife, and Oregon Department of Environmental Quality.

Based on studies of salmon behavior, these consulting agencies are concerned that docks and other over-water structures pose risks to threatened fish, including:

- Providing habitat for fish (such as bass) that prey on salmon, especially juveniles.
- Degrading riverbank, riparian, and shallow-water habitat environments.
- Introducing wood-preserving chemicals into the water.
- Encouraging human activities that disturb or stress salmon (such as noise or motion, or the release of petroleum products).

In the process of following the law to address these risks, permitting became both time-consuming and the outcomes more uncertain. Applicants are presented with new, varying, and often not well-understood requirements for project purpose and design. Agencies, already stretched thin, face challenges translating risks identified in research into clear protections and preferred practices. In addition, for reviewing agencies, each dock proposal came on its own, without context or connection to an overall plan. Whether a particular dock proposal would be the last one requested for years, or the first of dozens, was unknown – making it very difficult to weigh and allocate risks to threatened species.

The result has been a substantial degree of confusion and frustration for applicants and agencies alike. A number of public recreational dock projects have been delayed or discontinued because of permitting difficulties (e.g., Ankeny Dock redevelopment and South Waterfront dock construction). Rather than building on a mutually-shared understanding of policy objectives, institutional requirements, and sound

## Appendix A

design methods, each application for docks seems to start from square one and follow difficult and sometimes contentious pathways that are either unproductive or lead to less-desired outcomes.

This Strategy seeks to address the primary issues surrounding dock permitting by providing a comprehensive context for dock siting based on the City's recreational needs and policies (answering 'the why'), developing principles to guide dock siting ('the where'), and establishing guidelines on dock design and operation ('the how'). It is hoped that this new framework will be embraced by the City and its state and federal regulatory agency partners.

### THE CITY OF PORTLAND'S APPROACH TO RECREATIONAL DOCKS

#### Dock Planning: Integration, Coordination, Communication

To assure dock construction and maintenance occurs with the informed guidance of regulatory authorities, the City needs to integrate and coordinate its dock and facilities planning, and communicate its priorities clearly, transparently, and as early as possible to other local, state, and federal agencies. This Strategy provides an initial framework to provide for this context and for improving planning and communication.

#### Making the Best Use of What We Have: A Conservative Approach

In the spirit of 'reduce, reuse, recycle,' the City should adopt a conservative approach to public dock siting that is fiscally prudent and environmentally sound by:

- Making sure existing facilities are well-utilized before seeking additional facilities. This may involve not only timing construction to match demand as it develops, but also fully exploring alternatives that may entail moving existing City facilities to more accessible locations, and/or changing the way they are managed in order to better serve the public.
- Assuring docks are designed to accommodate uses in high demand.
- Decommissioning and/or removing over-water structures where appropriate, including where the risk to the environment exceeds any benefit now accruing to the public, where little public use is now occurring, or where costs of future maintenance may warrant present removal.
- Sizing structures to minimize area and locating to avoid sensitive zones, especially with regard to shallow water habitat.

#### Recreational Dock Design: The 'Greener,' the Better

There is a growing body of work cataloging best practices for building 'green' (more environmentally-friendly) docks and in-water structures.<sup>1</sup> When new public docks are needed, or existing docks require maintenance, the City will put a premium on green methods, employing a rigorous approach to design, construction, and operation that minimizes environmental impacts.

The exact mix of design elements, materials, and management conditions will vary with the location and purpose of each facility. Also, local, state, and federal regulations may require specific design requirements and operating conditions on a case-by-case basis. However, the following guidelines are a general rule to assure public recreational docks and facilities will avoid or have minimal effects on aquatic resources and the near-shore environment.

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<sup>1</sup> SLOPES IV, NMFS – when available; GREEN shorelines. City of Seattle; Oregon Department of Fish and Wildlife Residential Dock Guidelines; State of Washington Shoreline Master Program Guidelines; Greening Your Shoreline. King County Department of Natural Resources and Parks, Washington; Minimizing Effects of Over-Water Docks on Federally Listed Fish Stocks in McNary Reservoir: A Literature Review for Criteria, U.S. Army Corps of Engineers

***Purpose and Need***

The need for building, expanding, or maintaining a dock or similar structure must be clearly justified. Citing policies, plans, or studies that support a proposed action would offer the strongest demonstration that need has been carefully evaluated, including through the examination of management alternatives.

***Avoiding and Minimizing Natural Resource Impacts***

- Alternative sites, methods, and configurations should be examined to determine their feasibility for avoiding or minimizing impacts to aquatic resources while still meeting recreational needs.
- Siting
  - o Avoid impacts to shallow-water habitat by placement of docks further from shore.
  - o Avoid fragmentation of upland and riparian habitat by placing docks and related access infrastructure away from high-value habitat areas.
- Design
  - o Facilities should be limited to the minimum size and configuration needed to meet recreational objectives, consistent with public health and safety.
  - o Facilities should be designed to minimize impacts to aquatic resources and the near-shore environment by:
    - Providing for light transmission through surfaces to illuminate the underwater environment (transparent panels, grating).
    - Minimizing amount of facility area over shallow water habitat.
    - Minimizing the number of pilings.
    - Preventing grounding-out of docks during low water periods.
    - Avoiding the use of pesticide-treated wood, especially below the waterline.
    - Managing stormwater and runoff, including from associated shore facilities (parking areas, paths), both during and after construction.
    - Preventing ramps or other structural elements from bottoming-out during low water periods.
    - Preventing fish-eating birds from perching on structures.
    - Addressing impacts generated by dock-based recreational activities (noise, lighting, wave action).
- Mitigation
 

Where impacts cannot be avoided, actions that offset impacts should be identified and implemented (removing other over-water structures or derelict pilings, revegetating riverbanks, restoring shallow-water habitat).

**Public Education**

Because docks are the gateway to the Willamette for the City's growing population, they represent a key communication opportunity to foster river appreciation, active stewardship, and safe recreation. The City should develop integrated information programming (interpretive kiosks, signage, web, social media) to:

- Raise public awareness about the river, including its history, health, ecology, and role in Portland's livability.

## Appendix A

- Provide information on threatened and endangered species, with particular emphasis on river behaviors that protect species and maintain waterway health, such as:
  - o How to prevent the spread of aquatic invasive species.
  - o How to minimize release of petroleum products into the river during fueling, or from bilges and gas tanks.
  - o Appropriate waste disposal strategies (planning use of restrooms, on-board disposal systems and pump-out facilities, litter collection).
  - o Proper fish-cleaning procedures.
  - o On-river environmental etiquette for reducing disturbance to river-dependent species (noise, speed, approach distances)
  - o Water and boating safety.