



**US Army Corps
Of Engineers (Portland District)**

Joint Permit Application Form

DATE STAMP



AGENCIES WILL ASSIGN NUMBERS

Corps Action ID Number

Oregon Department of State Lands No

SEND ONE SIGNED COPY OF YOUR APPLICATION TO EACH AGENCY

US Army Corps of Engineers:

District Engineer
ATTN: CENWP-OD-GPPO
Box 2946
Portland, OR 97208-2946
503-808-4373

AND

DSL - West of the Cascades:

State of Oregon
Department of State Lands
775 Summer Street, Suite 100
Salem, OR 97301-1279
503-378-3805

OR

DSL - East of the Cascades:

State of Oregon
Department of State Lands
1645 NE Forbes Road, Suite
112
Bend, Oregon 97701
541-388-6112

AND

Send DSL Application Fees to:

State of Oregon
Department of State Lands
PO Box 4395, Unit 18
Portland, OR 97208-4395

(Attach a copy of the first page of the application)

(1) APPLICANT INFORMATION

Name and Address	City of Milwaukie Attn: JoAnn Herrigel, Community Services Director 10722 SE Main Street Milwaukie, OR 97222	Business Phone # Home Phone # Fax # Email	503-786-7508 503-653-2444 herrigelj@ci.milwaukie.or.us
Authorized Agent Name and Address	David Evans and Associates, Inc. Attn: Jennifer Snyder Hoglund 2100 SW River Parkway Portland, OR 97201	Business Phone # Home Phone # Fax # Email	503-499-0372 503-223-2701 jasn@deainc.com
Check one Consultant	<input checked="" type="checkbox"/>		
Contractor	<input type="checkbox"/>		
Property Owner Name and Address If different from above ¹	Same as above	Business Phone # Home Phone # Fax # Email	

(2) PROJECT LOCATION

Street, Road or Other Descriptive Location	Legal Description (attach <i>tax lot map</i> *)			
Park is located near downtown Milwaukie, west of McLoughlin Blvd. along the Willamette River, bordered to the north by Johnson Creek (near SE Harrison St.) and to the south by the wastewater treatment facility just to the south of Kellogg Creek (near SE Washington St.).	Township	Range	Section	Quarter/Quarter
	1S 1S	1E 1E	35AA 35AD	NE/NE SE/NE
In or near (City or Town)	County	Tax Map #	Tax Lot # ²	
Milwaukie	Clackamas	11E35AA 11E35AD	2200, 2300, 2400, 2500, 2600, 2700, 2800, 4600, 4700, 4800, 4900, 5000 1000, 1001	
Wetland/Waterway (pick one)	River Mile (if known)	Latitude (in DD.DDDD format)	Longitude (in DD.DDDD format)	
Wilamette River Kellogg Creek	18.4 1	44.4425	-122.6431	
Directions to the site	On OR Highway 99E/McLoughlin Blvd in downtown Milwaukie, between SE Harrison St. and SE Washington St.			

¹ If applicant is not the property owner, permission to conduct the work must be attached.

² Attach a copy of all tax maps with the project area highlighted.

* *Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.*

(3) PROPOSED PROJECT INFORMATION

Type: Fill Excavation (removal) In-Water Structure Maintain/Repair an Existing Structure

Brief Description: **Redevelopment of Milwaukie Riverfront Park that involves significant improvements to riverbank stabilization and habitat conditions. The removal/fill balance below OHW is 498 cy of fill with bank recontouring/removal (below OHW) over an area 1.54 ac in size.**

Fill

Riprap Rock Gravel Organics Sand Silt Clay Other: Steel piles and rails, precast concrete panels

Wetlands	Permanent (cy)	Temporary (cy)			Total cubic yards for project (including outside OHW/wetlands)	NA
	NA	NA				
	Impact Area in Acres	Dimensions (feet)				
	NA	L'	W'	H'		
Waters below OHW	Permanent (cy)	Temporary (cy)			Total cubic yards for project (including outside OHW/wetlands)	9,087
	1,305	0				
	Impact Area in Acres	Dimensions (feet) VARIES				
	0.93	L'	W'	H'		

Removal

Riprap Rock Gravel Organics Sand Silt Clay Other: Concrete, rebar, asphalt, timber piles

Wetlands	Permanent (cy)	Temporary (cy)			Total cubic yards for project (including outside OHW/wetlands)	NA
	NA	NA				
	Impact Area in Acres	Dimensions (feet)				
	NA	L'	W'	H'		
Waters below OHW	Permanent (cy)	Temporary (cy)			Total cubic yards for project (including outside OHW/wetlands)	10,891
	816	0				
	Impact Area in Acres	Dimensions (feet) VARIES				
	1.54	L'	W'	H'		

Total acres of construction related ground disturbance (If 1 acre or more a 1200-C permit may be required from DEQ)

Is the disposal area upland? Yes No Impervious surface created? 0<1 acre 0>1 acre?

Are you aware of any state or federally listed species on the project site?

Are you aware of any Cultural/Historic Resources on the project site?

Is the project site within a national Wild & Scenic River?

Is the project site within a State Scenic State Scenic Waterway?*

Yes	No	If yes, please explain in the project description (in block 4)
X		
X	X	
	X	

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(4) PROPOSED PROJECT PURPOSE AND DESCRIPTION

Purpose and Need:

*Provide a description of the public, social, economic, or environmental benefits of the project along with any supporting formal actions of a public body (e.g. city or county government), as appropriate.**

Over the last ten years, the desire to develop a community amenity that will provide a catalyst to reinvigorate the community and more specifically downtown has driven the park planning process. In 1999 the City of Milwaukie began a process to develop a concept for the riverfront and downtown that would reflect the vision of its citizens and improve economic vitality of the downtown core. In 2000, the City of Milwaukie adopted into its comprehensive plan a Downtown and Riverfront Framework Plan. In May 2006, the Milwaukie City Council reviewed and endorsed the final concept plan for the Milwaukie Riverfront Park.

The purpose of the proposed project is to redevelop the existing Riverfront Park to improve the recreational opportunities; increase the structural and vegetative diversity along the waterways; create and enhance habitats that support native species while minimizing non-native species; protect and improve water quality in the Willamette River; provide stable riverbanks to protect existing and future urban development, infrastructure, significant natural resources, and public safety; provide safe, limited public access to the river in appropriate locations; and enhance the aesthetic qualities of the river's edge.

It is likely that budget constraints will prevent the construction of all elements of this permit application within the typical permit time frame. The City of Milwaukie requests permit duration six years to allow adequate time for full implementation of the proposed project.

Project Description

Please describe in detail the proposed removal and fill activities, including the following information:

- Volumes and acreages of all fill and removal activities in waterway or wetland separately
- Permanent and temporary impacts
- Types of materials (e.g., gravel, silt, clay, etc.)
- How the project will be accomplished (i.e., describe construction methods, equipment, site access)
- *Describe any changes that the project may make to the hydraulic and hydrologic characteristics (e.g., general direction of stream and surface water flow, estimated winter and summer flow volumes.) of the waters of the state, and an explanation of measures taken to avoid or minimize any adverse effects of those changes.*

Is any of the work already complete?

Yes

No

If yes, please describe the completed work.

In addition, for fish habitat or wetland restoration or enhancement activities, complete the information requested in supplemental Fish Habitat or Wetland Restoration and Enhancement form.

See attached JPA Addendum for the Project Description (federally listed species are addressed in detail in the BA).

Project Drawings

State the number of project drawing sheets included with this application:

A complete application must include a location map, site plan, cross-section drawings and recent aerial photo as follows and as applicable to the project:

- **Location map** (must be legible with street names)
 - Site plan including;
 - Entire project site and activity areas
 - Existing and proposed contours
 - Location of ordinary high water, wetland boundaries or other jurisdictional boundaries
 - Identification of temporary and permanent impact areas within waterways or wetlands
 - Map scale or dimensions and north arrow
 - Location of staging areas
 - Location of construction access
 - Location of cross section(s), as applicable
 - Location of mitigation area, if applicable
- **Cross section drawing(s)** including:
 - Existing and proposed elevations
 - Identification of temporary and permanent impact areas within waterways or wetlands
 - Ordinary high water and/or wetland boundary or other jurisdictional boundaries
 - Map scale or dimensions
- **Recent Aerial photo** (1:200, or if not available for your site, the highest resolution available)

Will any construction debris, runoff, etc., enter a wetland or waterway?

Yes

No

If yes, describe the type of discharge and show the discharge location on the site plan.

Estimated project start date:

March 2009

Estimated project completion date:

November 2015

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(5) PROJECT IMPACTS AND ALTERNATIVES

Alternatives Analysis:

Describe alternative sites and project designs that were considered to avoid or minimize impacts to the waterway or wetland. (Include alternative design(s) with less impact and reasons why the alternative(s) were not chosen. Reference OAR 141-085-0025 (3(j)) and 141-085-0029 (4through 6) for more information).*

See attached JPA Addendum for the Alternatives Analysis.

Measures to Minimize Impacts

Describe what measures you will use (before and after construction) to minimize impacts to the waterway or wetland. These may include but are not limited to the following:

- For projects with ground disturbance include an erosion control plan or description of other best management practices (BMP's) as appropriate. (For more information on erosion control practices see DEQ's Oregon Sediment and Erosion Control Manual)*
- *For work in waterways where fish or flowing water are likely to be present, discuss how the work area will be isolated from the flowing water.*
- *If native migratory fish are present (or were historically present) and you are installing, replacing or abandoning a culvert or other potential obstruction to fish passage, complete and attach a statement of how the Fish Passage Requirements, set by the Oregon Department of Fish and Wildlife will be met.*

See attached JPA Addendum for the Measures to Minimize Impacts.

Description of resources in project area

Ocean

Estuary

River

Lake

Stream

Freshwater Wetland

Describe the existing **physical and biological characteristics** of the wetland/waterway site by area and type of resource
(Use separate sheets and photos, if necessary).

For wetlands, include, as applicable:

- *Cowardin and Hydrogeomorphic(HGM) wetland class(s)**
- *Dominant plant species by layer (herb, shrub, tree)**
- Whether the wetland is freshwater or tidal
- *Assessment of the functional attributes of the wetland to be impacted**
- Identify any vernal pools, bogs, fens, mature forested wetland, seasonal mudflats, or native wet prairies in or near the project area.)

For waterways, include a description of, as applicable:

- *Channel and bank conditions**
- *Type and condition of riparian vegetation**
- *Channel morphology (i.e., structure and shape)**
- *Stream substrate**
- Fish and wildlife (type, abundance, period of use, significance of site)
- *General hydrological conditions (e.g. stream flow, seasonal fluctuations)**

See attached JPA Addendum for the Descriptions of the Resources in the Project Area.

*Describe the existing navigation, fishing and recreational use of the waterway or wetland.**

Current river traffic in the Willamette River adjacent to the Milwaukie Riverfront Park is mostly recreational kayakers, rowers, personal watercraft and powerboats. Some commercial barge traffic on the Willamette River travels upriver as far as the Ross Island lagoon (aggregate industry) and Oregon City (paper industry). Commercial traffic also includes tour boats and site-seeing vessels. Salmon fishing occurs primarily in the deeper waters although some bass fishing occurs closer to shore near in-water structures.

The existing Riverfront Park boat ramp is heavily used and the proposed project will replace and relocate the deteriorated boat ramp with a structurally sound and safe facility, improving the recreational use.

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Site Restoration/Rehabilitation

- For temporary disturbance of soils and/or vegetation in waterways, wetlands or riparian areas, please discuss how you will restore the site after construction including any monitoring, if necessary*

Habitat improvements have been incorporated into the project as part of the park redevelopment. Non-native vegetation is being removed and replaced with diverse native trees and shrubs along Kellogg Creek and the Willamette River. Planting a larger area with native species will replace the few riparian trees that need to be removed during construction; the project establishes a total of approximately 1.89 acres of native vegetation in the shallow water, riparian, and upland areas impacted by the park's construction (refer to Figures 9A – 9E in Appendix A and the Preliminary Plant List in Appendix B).

Bioengineered bank stabilization methods have been incorporated where feasible; the root wad and log crib stabilization measures will provide cover for juvenile fish when these features are inundated. Deleterious materials including concrete, asphalt, rebar, and timber pilings will be removed over an approximately 18,700 square foot area along the Willamette River and Kellogg Creek and which will result in improved habitat conditions.

Mitigation

Describe the reasonably expected adverse effects of the development of this project and how the effects will be mitigated.*

- For permanent impact to wetlands, complete and attach a Compensatory Wetland Mitigation (CWM) Plan. (See OAR 141-085-0121 to OAR 141-085-0176 for plan requirements)*
- For permanent impact to waterways or riparian areas, complete and attach a Compensatory Mitigation (CM) plan (See OAR 141-085-0115 for plan requirements)*
- For permanent impact to estuarine wetlands, you must submit an Estuarine Resource Replacement Plan. (See OAR 141-085-0240 to OAR 141-085-0257 for plan requirements)*

No additional mitigation is being proposed for this project. Temporary construction impacts are the only reasonably expected adverse effects from this project. The project removes approximately 0.43 acres of deleterious materials including old wooden piles from the waterways and restoration activities will result in more diverse and functional riparian vegetation communities. Noted above, the project establishes a total of approximately 1.89 acres of native vegetation in the shallow water, riparian, and upland areas impacted by the park's construction.

Mitigation Location Information (Fill out only when mitigation is proposed or required)

Proposed mitigation (Check all that apply):	<input type="checkbox"/>	Onsite Mitigation	Type of mitigation:	<input type="checkbox"/>	Wetland Mitigation
	<input type="checkbox"/>	Offsite Mitigation		<input type="checkbox"/>	Mitigation for impacts to other waters
	<input type="checkbox"/>	Mitigation Bank		<input type="checkbox"/>	Mitigation for impacts to navigation, fishing, or recreation
	<input type="checkbox"/>	Payment to Provide			
Street, Road or Other Descriptive Location			Legal Description (attach tax lot map*)		
			Quarter/Quarter	Section	Township
					Range
In or near (City or Town)	County	Tax Map #	Tax Lot # ³		
Wetland/Waterway (pick one)	River Mile (if known)	Latitude (in DD.DDDD format)	Longitude (in DD.DDDD format)		
Name of waterway/watershed/HUC		Name of mitigation bank (if applicable)			

³ Attach a copy of all tax maps with the project area highlighted.

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(6) ADDITIONAL INFORMATION

Adjoining Property Owners and Their Address and Phone Numbers (*if more than 5, attach printed labels**)

On the north across Johnson Creek:

Sharon and Gary Klein
10795 SE Riverway Lane
Milwaukie, Oregon 97222
503-654-1256

On the east:

Oregon Department of Transportation
Matthew Garrett, Director
355 Capitol St. N.E.
Salem, OR 97301-3871
Phone: (888) 275-6368

On the south:

Clackamas County
Kellogg Creek Sewage Treatment Plant
11525 SE McLoughlin Blvd.
Milwaukie, Oregon 97222
503-794-8050

Has the proposed activity or any related activity received the attention of the Corps of Engineers or the Department of State Lands in the past, e.g., wetland delineation, violation, permit, lease request, etc.?

Yes No

If yes, what identification number(s) were assigned by the respective agencies:

Corps #	200500059 (minor repairs to boat ramp)	State of Oregon # 33853-SP	Waterway Lease #ML 9532 CANCELLED 5/31/08 Waterway Lease #ML 9392 AMENDED 2008
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Has a wetland delineation been completed for this site?

Yes No

*If yes by whom?**

Has the wetland delineation been approved by DSL or the COE?

Yes No

*If yes, attach a concurrence letter. **

Background research and a wetland determination were performed by DEA which found no wetlands in the project area, nor any site characteristics that would support a wetland or wetland conditions.

(7) CITY/COUNTY PLANNING DEPARTMENT AFFIDAVIT
 (TO BE COMPLETED BY LOCAL PLANNING OFFICIAL) *

I have reviewed the project outlined in this application and have determined that:

- This project is not regulated by the comprehensive plan and land use regulations.
- This project is consistent with the comprehensive plan and land use regulations.
- This project will be consistent with the comprehensive plan and land use regulations when the following local approval(s) are obtained.
 - Conditional Use Approval
 - Development Permit
 - Other : See comments section below

This project is not consistent with the comprehensive plan. Consistency requires a

- Plan Amendment
- Zone Change
- Other

An application has has not been filed for local approvals checked above.

Local planning official name (print)	Signature	Title	City / County	Date
Katie Mangle	<i>Katherine Mangle</i>	Planning Director	Milwaukie	5/30/08

Comments:

Required land use approvals: Design Review, Transportation Plan Review, Willamette Greenway review, Water Quality Resource review

(8) COASTAL ZONE CERTIFICATION *

If the proposed activity described in your permit application is within the Oregon coastal zone, the following certification is required before your application can be processed. A public notice will be issued with the certification statement, which will be forwarded to the Oregon Department of Land Conservation and Development for its concurrence or objection. For additional information on the Oregon Coastal Zone Management Program, contact the department at 635 Capitol Street NE, Suite 150, Salem, Oregon 97301 or call 503-373-0050.

CERTIFICATION STATEMENT

I certify that, to the best of my knowledge and belief, the proposed activity described in this application complies with the approved Oregon Coastal Zone Management Program and will be completed in a manner consistent with the program.

Print /Type Name	Title
Applicant Signature	Date

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(9) SIGNATURES FOR JOINT APPLICATION

Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and, to the best of my knowledge and belief, this information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. By signing this application I consent to allow Corps or Dept. of State Lands staff to enter into the above-described property to inspect the project location and to determine compliance with an authorization, if granted. I hereby authorize the person identified in the authorized agent block below to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

I understand that the granting of other permits by local, county, state or federal agencies does not release me from the requirement of obtaining the permits requested before commencing the project. *I understand that payment of the required state processing fee does not guarantee permit issuance. The fee for the state application must accompany the application for completeness.*

Amount enclosed	\$745
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Print /Type Name	Title	Print /Type Name	Title
JoAnn Herrigel	Community Services Director	Jennifer Snyder Hoglund	Associate
Applicant Signature	Date	Authorized Agent Signature	Date
<i>JoAnn Herrigel</i>	12/4/08	<i>Jennifer Snyder Hoglund</i>	12/9/08

Landowner signatures: For projects and/or mitigation work proposed on land not owned by the applicant, including state-owned submerged and submersible lands, please provide signatures below. A signature by the Department of State Lands for activities proposed on state-owned submerged/submersible lands only grants the applicant consent to apply for authorization to conduct removal/fill activities on such lands. This signature for activities on state-owned submerged and submersible lands grants no other authority, express or implied.

Print /Type Name	Title	Print /Type Name	Title
Property Owner Signature	Date	Mitigation Property Owner Signature	Date

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Milwaukie Riverfront Park Joint Permit Application Addendum

(4) Proposed Project Purpose and Description:

PROJECT DESCRIPTION

An agency pre-application conference and site visit for the proposed project was held on July 16, 2008. Attendees included representatives from the Department of Environmental Quality, National Marine Fisheries Service, U.S. Army Corps of Engineers, Department of State Lands, and staff from the City of Milwaukie and David Evans and Associates.

The Milwaukie Riverfront Park Project was initiated in 1998 as part of the Milwaukie Downtown Framework Plan. The impetus for the project is to create a regional riverfront park including substantial improvements to riparian habitat for fish, wildlife and native plant communities in an urbanized and highly altered area. It is also included in the City of Milwaukie's Comprehensive Plan, with a goal to reclaim the Willamette River as "Milwaukie's Livingroom" and promote the river as an environmental, economic, and urban asset. The property and surrounding area is a mix of retail/commercial and light-industrial use and a state highway (OR99E) and is zoned as Open Space. Project boundaries include Johnson Creek on the north, the Kellogg Creek Sewage Treatment Plant on the south, and the Willamette River on west and OR99E/McLoughlin Blvd on the east. Kellogg Creek bisects the site just north of the sewage treatment plant.

The site consists of several parcels totaling approximately 6.5 acres that form the Milwaukie Riverfront Park owned by the City of Milwaukie. The project site is located in Milwaukie, Oregon (T01S, R01E, Sec 35, W.M.) (Figure 1, Appendix A) and includes a portion of Willamette River and its banks between Johnson and Kellogg creeks, in addition to a small parcel south of Kellogg Creek. The project is located in the Lower Willamette River sub-basin (HUC 17090012).

The project area is situated on a formerly retail and industrial site with various uses including open space, a boat launch ramp, restroom building and parking lot. The project area has been divided into four reaches based primarily on the characteristics of the existing riverbank and proposed uses. Reach 1 begins upstream, at the northern boundary of the Kellogg Creek Sewage Treatment Plant property, and Reach 4 ends downstream, at the confluence of the Willamette River and Johnson Creek (refer to Figures 4 – 5G, Appendix A).

Project impacts are expected to be largely temporary and related to construction activities such as earthwork and installation of piles. Suspended sediment/turbidity may temporarily affect water quality during the installation of bio-engineered material designed to provide slope stability. Conservation measures described in the biological assessment will be used to minimize project impacts. Erosion control measures, including sediment curtains, will be in place during work performed below OHW.

The section immediately below is an overall description of the project with a breakdown of the proposed park components, and the following section provides a project activities breakdown via four reaches of the park along the Willamette River.

Proposed Project

The proposed project would redevelop Milwaukie Riverfront Park to have multiple uses including large grassy areas, a children’s play area, picnic facilities, restrooms, benches for viewing the river, natural vegetative areas with trails, a boat ramp replacement and parking, and transient boat dock. The park lands will be situated on three tiers. Site elevation decreases from a height of 42 feet at McLoughlin Blvd, to approximately 30 feet at mid-level, culminating at approximately 10 feet at the river’s edge. Key challenges include contouring the land to accommodate these many uses as well as working around the PGE power line that runs the length of the existing park area.

Redevelopment of the park will result in unavoidable permanent impacts to approximately 1.54 acres of waters below the ordinary high water (OHW) elevation with a total of 2,121 cubic yards of material fill **and** removal (see Table 1, below). The OHW of 18.4 feet NVGD 29 for this site was provided by Jim Goudswaard, Jurisdictional Determination Specialist for the U.S. Army Corps of Engineers, in August 2006, and demonstrated in the field via a change in vegetation (presence versus absence), character/ texture of the soils, and presence of litter and debris.

Table 1. Fill/Removal below OHW of Jurisdictional Waterway

Project Component	Volume below OHW	Area of impact below OHW
Removal of existing boat ramp	- 333 cy	- 8,990 ft ²
Construction of new boat ramp and dock	+ 373 cy	+ 3,735 ft ²
Construction of new transient dock	+ 295 cy	+ 4,671 ft ²
Recontouring bank	- 448 cy	- 39,404 ft ²
Bio-engineered bank protection	+ 369 cy	+ 28,435 ft ²
Landscape rock cluster bank protection	+ 268 cy	+ 3,630 ft ²
Removal of deleterious material and existing piles	- 35 cy	- 18,771 ft ^{2*}
Total Fill	+1,305 cy	+ 40,471 ft ² (0.93 ac)
Total Removal	- 816 cy	- 67,165 ft ² (1.54 ac)
Total Change for the Project	+498 cy	- 26,694 ft ² (0.61 ac)

The park development will occur in phases as funding becomes available, from 2009 to approximately 2015. The proposed park plan includes the following fundamental features and critical elements (refer to Figures 6 – 7F, Appendix A):

Phase I

- Utility relocations – The PGE poles and City water pipeline will be relocated closer to McLoughlin Blvd. behind the sidewalk that runs parallel to the west side of the highway.

Phase II

- Trails and scenic overlook – The north end of the park adjacent to Johnson Creek will introduce trails and scenic overlook connections to the Willamette River and an informal amphitheater proposed for construction in Phase III.

- Southern plaza – The plaza will be located south of Kellogg Creek and provide a gathering place to overlook the Willamette River. It is located at the top of a thirty foot high sheet pile wall formerly used as a log dump. Portions of the plaza will cantilever over the river at the top of the sheet pile wall up to 10 feet. Adjacent to the plaza and pavilion a new parking area will be constructed where an informal parking area is currently located.
- Trail connections on the north end and south end of the park – These connections will allow access to regional recreational facilities by bikers and pedestrians.

Phase III

- A public plaza – This will provide a critical interface with downtown Milwaukie and will include a water feature, children’s play area, and an outdoor theatre space.
- An informal amphitheater – This informal, grass amphitheater will hold approximately 150 people for community events. Stone seat steps will descend from the amphitheater to the waters edge extending below OHW.
- A reconfigured boat ramp and boarding dock – These two features will replace existing facilities that are deteriorated and functionally obsolete. The new configuration will better utilize the parks open space and simplify access. Improvements will also include a small restroom structure as required by the Oregon State Marine Board.
- Boat trailer and automobile parking – Access and parking will be provided adjacent to the boat ramp.
- Enhanced riverfront bank restoration and native plantings – The park design will include the removal of deleterious material along the banks of the Willamette River and Kellogg Creek. Native vegetation will be planted along Johnson and Kellogg creeks and along the Willamette River.
- A park entryway – The park’s main entry will be relocated to the portion of the site located south of Kellogg Creek. The two existing entryways will be removed.
- A pedestrian bridge over Kellogg Creek – The pedestrian bridge will connect the southern plaza to the boat ramp and the remainder of the park to the north of Kellogg Creek.

Phase IV

- A floating dock connected to the shore by an aluminum gangway – The dock will provide access to the City of Milwaukie for recreational boaters visiting the area.
- The restroom building located in the large public plaza would be constructed.

See Figures 4 – 10F, Appendix A for the Milwaukie Riverfront Park existing condition and proposed site plans, cross sections, and planting and grading plans.

Staging Areas and Access

The contractor will be responsible for securing a staging area. The Contractor may elect to store equipment and materials off site at a different location for security reasons. Hazardous material containment booms and spill containment booms will be provided on site to facilitate the cleanup of hazardous material spills. After the project is completed, staging areas will be returned to pre-project grade and seeded if the ground is disturbed.

If possible, areas for non-workshift storage of equipment and vehicles, other than track-mounted vehicles and cranes will be located at least 150 feet away from the regulated work area. Areas for storing fuels and other potentially hazardous materials and areas for refueling and servicing construction equipment and vehicles will also be located at least 150 feet from the regulated work area, if feasible. Due to the proximity of the Willamette River, Kellogg Creek and Johnson Creek, in addition to the need to maintain access to sections of the park, sufficient space may not be available to establish a staging area for storing hazardous materials and non-work shift vehicles 150 feet away from ordinary high water (OHW). If this is the case, full containment of potential contaminants will be provided to prevent soil and water contamination, as appropriate.

In-Water Work Window and Construction Timing

The in-water work period for this section of Willamette River is July 1 to October 31. During the agency scoping visit NMFS indicated construction activities below OHW were no longer permitted during the December 1 to January 31 in-window water work period. The in-water work period for Kellogg Creek is July 1 to September 30. There is no in-water work proposed in Johnson Creek. The in-water area for the park is identified as occurring below the OHW elevation of 18.4 feet for the Willamette River and Kellogg Creek.

The in-water work associated with this project includes removal of the existing boat ramp, construction of the new boat ramp and associated boarding dock, construction of the transient dock, recontouring and stabilizing the banks of the Willamette River, the placement of informal stepping stones to allow public access to the Willamette River's edge, and removal of deleterious material from the Willamette River and Kellogg Creek.

Existing Boat Ramp Removal

The existing two lane boat ramp is located near the middle of the park. The ramp has been significantly undermined and deteriorated and is not safe to use during low water conditions. A functioning boat ramp is needed at the park, and the proposed new ramp (discussed below) will be constructed in coordination with the removal of the existing ramp. The existing ramp will be removed during the in-water work window during low water conditions to minimize the need for construction equipment to enter the river. The ramp will be isolated from the active flowing channel with a turbidity curtain or other Engineer-approved measures to prevent debris and sediment from leaving the project site. Construction equipment will be located below OHW elevation but will not enter the water. The bank will be re-contoured to match upstream and downstream grades, stabilized, and planted with native vegetation.

New Boat Ramp and Boarding Float Construction

In 2000, the City adopted the Milwaukie Downtown and Riverfront Plan into their Comprehensive Plan. The Riverfront Plan, as adopted, did not include a boat ramp for the Riverfront Park. The theory was that an alternative location for the existing Jefferson Street boat ramp would be identified by a City Council-appointed ramp location group. When the group failed to identify a suitable location, City staff began working with the Riverfront Board and boating advocates to determine whether and how a new boat ramp could be integrated in the Riverfront Park design. In 2005 the Riverfront Board conducted a direct mail survey of all City residents requesting design input regarding preferred park elements. The survey received a 10 percent response and 75 percent of the respondents identified a boat ramp and associated parking as desired integral parts of the Riverfront Park design.

The Riverfront Board and staff developed the current park design specifically to integrate the ramp while maximizing the uninterrupted open space in a fairly small available area. The current layout minimizes the conflict between vehicles and pedestrians and uses the existing site contours as efficiently as possible.

A new boat ramp is proposed to be constructed south of the existing ramp near Kellogg Creek. The boat ramp will be approximately 165 feet long by 26 feet wide and eight inches thick. The boat ramp is designed based on a single lane ramp and meets current Oregon State Marine Board standards. The section of the ramp below OHW elevation will be constructed with pre-cast concrete planks for driving surface. The section of the ramp above OHW elevation will be poured in place concrete. Construction below OHW will include slope grading, with 1-1/2 inch gravel base and steel rails placed on grade to support planks. Grading will be limited to slope modifications necessary to establish a flush and level ramp. The precast concrete planks will be placed on the rails and will interlock with each other. A perimeter of riprap will be placed around the ramp to prevent scour and undercutting of ramp surface. This rock will be approximately 4 ft wide and 4 ft deep and flush with ramp surface.

A plastic 'wood' boarding float will be placed on top of the ramp and secured with piling. The boarding float will provide safe access for boats using the ramp and will be permanent. The boarding float will be constructed of wood surrounding and encapsulating foam. The decking will be plastic 'wood.' The dock will be 6 feet wide and approximately 160 feet long.

The float will be secured with 8 16-inch steel pile driven into the ground. The pile will have a conical pile cap to prevent birds from perching on top.

Transient Dock Construction

Redevelopment of the park includes a transient dock for boaters to access the city and its amenities. During the design development process, Milwaukie citizens and boaters from the area expressed great interest in providing boat tie-up facilities for transient boaters as well as boat launching facilities. The transient dock would be used by those who launched boats elsewhere along the river but want to use Milwaukie's Riverfront Park for recreation or to park their boats while they walk to downtown Milwaukie to eat or shop. A transient dock would serve to minimize conflicts between those launching boats and those tying up their boats, and is proposed to be located to the south of Kellogg Creek. An additional consideration for this facility was acknowledged when the City was approached by the owner of the Sternwheeler Rose (a 80-foot long paddlewheel recreational cruise vessel), investigating the opportunity to locate the boat's moorage near Milwaukie's Riverfront Park. The transient dock would be located in

deeper water to minimize impacts and oriented to avoid debris accumulation and eliminate the need for a debris boom.

The transient dock will be 12 ft wide and 250 ft long and located in 20 ft deep water. The dock will be constructed of two types of walking surfaces: timber decking (treated with riparian-compatible preserving agents) or concrete encapsulated foam and enframed panels of metal grating to provide light transmission to minimize potential habitat for predatory fish. The dock will be secured to the bed of the river with steel piling. Piling will be 24-inch diameter and driven into the bottom using vibratory methods. The top of the pile will be closed with a conical pile cap. A maximum of 15 piling will be required to secure the dock.

Access to the dock will be provided by an elevated gangway. The gangway will be fabricated from aluminum to minimize future maintenance and avoid the need for painting over the water. The gangway will be 6 feet wide by 100 feet long. The decking for the gangway will include grating to provide light transmission to minimize impacts. An abutment or attachment will be provided above OHW for the gangway and will not require in-water work.

New Pedestrian Bridge Construction

A pedestrian bridge is proposed to provide a direct connection between parking and other park facilities on the south side of Kellogg Creek with the park facilities to the north of Kellogg Creek. The initial motivation for this connection was to facilitate movement of boaters who launch their boats via the boat ramp located north of Kellogg Creek then relocate and park their vehicles and trailers in the southern parking facility. The pedestrian bridge provides a short, more direct route to the boat ramp to minimize the time the boaters are separated from their potentially unoccupied and vulnerable launched boats. The proposed pedestrian bridge will span Kellogg Creek and will not be located below OHW. The vertical profile will be slightly higher than the 100-year flood elevation to minimize flooding and to ensure a “no rise” in the 100-year flood elevation. Construction of the new bridge will be accomplished during one construction season.

Channel and slope stabilization

Channel and slope stabilization work will be involved in this project. The riverbank slope below OHW will be laid back slightly during grading, increasing flood volume capacity. Approximately 448 cubic yards of material will be removed below OHW elevation. Bank armoring and stabilization will include installing large boulders at key scour edges and protrusions at risk of erosion, including the former and proposed boat ramp areas and drainage points for the proposed swales. The boulders will be in-filled with river cobble varying in size from 2 to 6 inches. A weathered outcrop of exposed bedrock will be left intact among the plantings as a site amenity. Vegetated log crib walls will provide bank stabilization along the leeward banks, where pedestrian access is proposed. Soft gabion walls planted with native shrubs and forbs will protect the swales from erosion under inundation and enhance aesthetics. Large wood will be installed within the swales to create habitat. Soil engineering will include installation of coir matting in concert with re-vegetation to protect the engineered soil from erosion while planting becomes established and a matrix of roots binds the slope (see Proposed Site Plans Figures 6 – 7F, Proposed Planting Plans Figures 9A – 9E, and the Preliminary Plant List in Appendix B).

Currently, concrete, rebar, chain link fencing, wood piles, and other debris are found along the banks of the Willamette River and Kellogg Creek. This deleterious material will be removed as part of this project. It is anticipated that approximately 35 cubic yards (318 cubic feet of piles and 611 cubic feet of miscellaneous deleterious materials) will be removed below OHW.

Utility Relocation

PGE power lines and a water line are currently located in the northern half of the project area. The PGE poles and waterline would be relocated closer to McLoughlin Blvd behind the sidewalk. Both of these utility relocations are within existing developed park land and away from the top of bank. None of these utilities require work below OHW and would not result in the loss of riparian vegetation.

Stormwater Collection and Treatment: Water Quality Treatment

ODOT was responsible for development of the storm water management system for the McLoughlin Blvd Improvement project in 2005. Stormwater runoff from McLoughlin Blvd is treated in two proprietary treatment manholes to meet that project's permit conditions prior to discharging to Kellogg Creek. Since the park restoration will not impact McLoughlin Blvd and no runoff from this roadway enters the project area, no additional treatment is proposed with this project. The Stormwater Report prepared for this project is provided as Appendix E.

The majority of the existing impervious areas will be removed for the new layout of parking and sidewalks. The total pre-development site impervious area is approximately 103,960 square-feet (2.4 acres). An impervious area of 95,756 square-feet (2.2 acres) will be removed. An impervious area of 8,204 square-feet (0.2 acres) of sidewalk will remain. For the most part there is no existing storm system. Stormwater from the impervious surfaces flows down the river bank to the Willamette River. However, there are two existing catch basins that collect part of the driveway stormwater runoff. These catch basins will be removed during construction since the park's vehicular access will be relocated.

The site improvements will add 122,821 square feet (2.8 acres) of impervious area to the existing 8,204 square feet (0.2 acres) that will remain. The parking area south of Kellogg Creek, which is approximately 56,292 square feet (1.3 acres), will be constructed using pervious pavement technology. Although this technology will allow some infiltration to occur, the water quality treatment facilities have been designed as if this area were impervious. Based on this approach, the total impervious area for the site post-development will be 131,025 square feet (3.0 acres). The project will create a net increase of 27,065 square feet (0.6 acres) of impervious area. For discussion of stormwater the site has been divided into three key areas. These areas are the north and south parking (intersected by Kellogg Creek connected by an existing vehicle bridge and the proposed pedestrian bridge) and the north pedestrian plaza.

The proposed water quality facilities meet the design standards of the current City of Portland Stormwater Management Manual (SWMM). SWMM specifies that pollution reduction is required for all impervious areas created by development projects with the exception of roof areas. SWMM regulations require water quality facilities to treat stormwater runoff generated by 0.83-inches of rainfall over a 24 hour period when using the SBUH hydrograph-based analysis method.

Stormwater runoff in the south parking area will be treated and detained in three connected facilities; one vegetated swale and two wet detention ponds. The swale is connected to an adjacent wet pond. This pond

collects and treats runoff through infiltration. This pond is connected to a larger pond, which also collects and treats runoff from the south parking area. For the water quality event the larger pond does not release any water, which means all water quality event runoff from the south parking area is stored and slowly infiltrated.

Stormwater runoff in the north parking area will be treated and detained in two separate facilities; one vegetated swale and one flow-through planter. The vegetated swale is 157-feet long and has a one foot bottom width, one foot depth, and 3L:1V side slopes. The swale also acts as an infiltration basin and provides dead storage volume that holds the water quality storm event and all runoff is infiltrated. The flow-through planter stores all the flows, which are slowly infiltrated.

The proposed pedestrian plaza area includes the restrooms, water features, planters, and amphitheater. These areas have two water quality features for stormwater treatment. A small wet pond is proposed on the south side of the plaza and a filter strip is proposed on the far north side of the plaza. A large percentage of the plaza is graded to sheet flow stormwater runoff into adjacent planters or grassy areas. These areas were not modeled for water quality purposes.

Stormwater Collection and Treatment: Water Quantity Treatment

Since infiltration rates in this area are not high enough to infiltrate the 2-, 5-, 10-, and 25-year storm event, it is necessary to provide a detention system in order to meet the pre-development discharge rate requirements. The proposed small pond/large pond facility provides detention for the south parking area runoff and the proposed swale provides detention for the north parking area. These facilities are designed to provide detention during the 100-year storm event. The water quality features for the pedestrian plaza are too small to provide any detention. Table 2 is a summary of the north and south parking flows that are detained and their summation. The total detained flow meets the requirements.

Table 2. Pre- and Post-Development Flow and Detention Requirements and Proposed Detention Summary

Recurrence Interval (years)	Pre-Development Flow (cfs)	Post-Development Flow (cfs)	Required Flow Reduction (cfs)	Total Flow Reduction (cf)
2	1.31	1.50	0.19	0.52
5	1.52	1.74	0.22	0.48
10	1.67	1.91	0.24	0.42
25	1.93	2.21	0.28	0.30
100	2.29	2.62	NA	NA

Hydraulic and Hydrologic Characteristics

The new boat ramp location will have minimal impact on general direction of surface water flow as the relative scale of the impact to the channel cross section is small. The new improvements will generally be flush with existing contours. The piling and dock will also have minimal hydraulic impact; however the dock will likely collect more debris than the predevelopment conditions. The new dock will have significantly less impact to the area than when it was used as a log handling and transport facility. The

dock is configured in a way to reduce debris collection and promote smooth flow and debris shedding along its edge.

The transient dock will integrate measures to minimize impact including grating and use of low maintenance materials including galvanized steel, concrete and aluminum. The dock is located upstream of the entrance to Kellogg Creek to avoid impact to migratory salmonids bound for the Creek.

Known Cultural/Historical Resources

A cultural resource survey conducted by Archaeological Investigations Northwest, Inc. (AINW) identified four historic-period resources in the project area and is provided as Appendix C. However, AINW recommends that three of these resources are not eligible for listing in the National Register of Historic Places (NRHP). The fourth resource, the Kellogg Lake Outlet Structure (a concrete culvert with weir and fish ladder), was previously determined to be eligible. This feature will not be impacted as a component of the proposed project. Archaeological monitoring during ground disturbing activities is recommended since there is a high probability for the discovery of subsurface archaeological resources.

A summary of the historical uses of the site is provided in the AINW survey. Most recently, however, the site was used for a marina warehouse built sometime between 1946 and 1956 (removed in 2000) and the Brix Maritime Company was operating the log dump or slide on the Milwaukie waterfront in the 1960's. The Kellogg Creek Sewerage Treatment Facility replaced the Brix Maritime Company south of the current park land in 1974 and several buildings along the west side of the SE McLoughlin Boulevard were removed in 2006.

Project Activities via Reach

Refer to Figures 6A – 10F, Appendix A:

Reach 1 is located between the Kellogg Creek Water Treatment Plant and Kellogg Creek. Structural improvements planned for this section include a viewing overlook south of Kellogg Creek, to be integrated into the existing sheet pile wall, approximately thirty feet above ordinary high water. From this overlook, a 100-foot long gangplank will lead to a double transient dock located on the River, south of the confluence with Kellogg Creek. The dock will be constructed of concrete-encapsulated foam, in accordance with City of Portland standards. Additionally, the dock design will include panels of aluminum grating to allow light penetration to discourage predatory fish from inhabiting waters below the dock, and will be located in waters more than 20 feet deep.

Modifications to the bank of Kellogg Creek will consist of deleterious material cleanup, bank stabilization, and vegetation enhancement. Invasive plants and debris will be removed from the riverbank and shoreline areas and larger pieces of concrete rubble will be broken up or removed. Approximately 75 decaying wooden piles will be removed from the creek bed at the confluence of the creek and the Willamette River. Rounded rock armor will be used in some areas to stabilize the banks. Vegetation will be planted on the banks to create a variety of native plant communities. Approximately 0.05 acres of re-naturalized and revegetated riverbank below OHW and 0.1 acres above OHW, including 0.03 acres of upland habitat will be established in Reach 1. A list of native vegetative species for each habitat type is presented in the preliminary plant list provided as Appendix B.

Reach 2 is located between Kellogg Creek and midway between Washington and Jefferson Streets. This reach will include a boat launch ramp and associated dock located north of the confluence with Kellogg Creek. The ramp will be constructed of pre-fabricated concrete slabs and steel rails below OHW and cast in place, permeable concrete above OHW. Measuring 20 feet wide and 160 feet long, sloped at 2H:1V, the ramp will extend to elevation -3 feet, in addition to a 4-foot wide and deep gravel reinforcement surrounding the toe of the ramp. Rounded boulders salvaged from site cleanup will be embedded in the bank along the ramp and flaring outward to prevent erosion or undercutting. Regrading will occur along the bank in this reach to achieve 4.5H:1V. Revegetation enhancement will include emergent and riparian communities. Approximately 0.41 acres of re-naturalized and revegetated riverbank below OHW and 0.24 acres above OHW will be established in Reach 2.

Reach 3 is located midway between Washington and Jefferson Streets to midway between Monroe and Jackson Streets. Bank modifications will include substantial deleterious material/debris removal, regrading, and installation of bioengineered bank stabilization measures. Pedestrian access to the river's edge will also be provided within this reach via a series of informal rock steps embedded in the bank, a portion of which will extend below OHW. A large amount of concrete slabs and metal debris will be removed from the existing bank and shoreline, then regrading will establish a 3H: 1V slope. A series of terraced log cribwalls including rootwads will be incorporated into the bank, providing fish habitat during various flow conditions. An existing seasonally exposed beach, located on the lee side (upstream) of the existing boat ramp, will be enhanced for juvenile salmon habitat by the addition of round gravel cobble. The bank will be extensively revegetated with emergent and riparian community plantings, including tree plantings to recruitment potential future large woody debris. Approximately 0.3 acres of re-naturalized and revegetated riverbank below OHW and 0.30 acres above OHW, including 0.1 acres of upland habitat, will be established in Reach 3.

Reach 4 is located midway between Monroe and Jackson Streets to Harrison Street. Key features include invasive plant removal, some re-grading, and vegetation enhancements including emergent and riparian communities and tree planting for recruitment of potential large woody debris. The bank restoration work near Johnson Creek is based on developing a naturally functioning shoreline and riparian area. The design is based on a seven year establishment cycle, with soil compaction and plantings reaching maturity in seven years. The natural coir stabilization fabric will also be near its useful life at seven years. The riverbank will then rely on the plantings for stability. During summer low water, wave energy will be absorbed by the proposed lower root wad/boulders and round gravel surface. During brief spring high water periods the bio-engineered measures will be exposed to waves. This will cause minor localized scour and undermining. It is anticipated that the larger trees and vegetation will begin to fall down the bank slope and provide additional protection from waves and current. The material in the bioengineered bank will be composed of soil and round rock. This round rock will provide a shallower more stable slope. Depending on when the trees fall onto the bank, it may be necessary to anchor them in place so they continue to provide necessary wave protection. To control further retreat of the bank larger boulders will be placed behind the bioengineering and combined with the root-wads. This system will establish a limit of erosion if the bioengineering experiences a major flow/flood event before root systems are firmly established.

The banks of Johnson Creek near the confluence have recently benefited from substantial improvements by the Johnson Creek Watershed Council, including invasive removal and native plantings. Cleanup

efforts related to this project will be limited to the top of Johnson Creek's banks to minimize potential impacts to work already completed.

In addition to re-naturalizing the shoreline, separate pedestrian and bike trails will span the length of the greenway above OHW. The trails will be separated by upland vegetation and bioswales and will connect at several locations. One major and one minor viewing terrace, in conjunction with the trails, will be constructed above OHW. Approximately 0.09 acres of re-naturalized and revegetated riverbank below OHW and 0.4 acres above OHW, including 0.35 acres of upland habitat, will be established in Reach 4.

Beneficial effects from the project include habitat improvements in riparian and shallow water areas. The river bank will be re-graded, stabilized, and replanted with native vegetation to prevent erosion and potential sedimentation/contamination of salmon habitat. Grading will create a shoreline that features areas of gradual elevation change containing distinct terraces and emergent vegetation. These emergent areas will provide juvenile salmonids access to shallow water habitats and a greater diversity of available aquatic and terrestrial food sources. Invasive plants and metal debris will be removed from the riverbank and shoreline areas; larger pieces of concrete rubble will be broken up and removed or recycled onsite. Vegetation will be planted on the bank to create a variety of native plant communities that will eventually provide shade, potential woody debris reserves, allochthonous nutrient contributions to the river, and insect (salmonid prey) and songbird habitat. It is expected that these habitat improvements will also benefit small wildlife species and migratory songbirds by offering cover and food resources. These actions will cumulatively provide a net benefit by establishing a total of approximately 1.89 acres of native vegetation in the shallow water, riparian, and upland areas impacted by the park's construction.

(5) Project Impacts and Alternatives:

ALTERNATIVES ANALYSIS

This alternatives analysis evaluates options for implementation of the Milwaukie Riverfront Park, a component of the Milwaukie Downtown Framework Plan. This plan was developed through years of public, local and regional government involvement through a Riverfront Park Board. There were many opportunities for the public to provide feedback.

No alternative sites were evaluated for the Milwaukie Riverfront Park. The site is determined by the assembly of land purchased by the City of Milwaukie, a donated parcel and land owned by the city. The plan presented here was developed by working with the existing site parameters and the previously prepared Milwaukie Downtown Framework Plan (1998), which provided much of the vision and direction.

A No-Action Alternative is discussed in order to present the implications of not implementing a park plan. A first design iteration developed for the City of Milwaukie in 2006 based on the concepts of the 1998 Milwaukie Downtown Framework plan is presented as well as a modified design that represents changes based on geotechnical, engineering, habitat design, detailed site inspections and characterizations, and community and agency input.

The City of Milwaukie is committed to implementing a Riverfront Park that achieves the goals of the 1998 Framework Plan, including habitat improvements for fish and wildlife, public access and uses, separate pedestrian and bicycle pathways, public safety, visual access to the Willamette River, access to

the river for light watercraft, and riverbank stability. The No-Action Alternative does not achieve any of these goals. The two action alternatives result in benefits for all of these stated goals. Overall, this project is considered by the City of Milwaukie to have net positive effects for fish and wildlife, and human uses of the Willamette River greenway area.

The three alternatives evaluated are summarized below:

Alternative A - No Action

No work below ordinary high water (OHW) elevation; no changes made to the existing riverbank and shallow water habitat area.

Alternative B - First Design Iteration Developed for Milwaukie Downtown Framework Plan in 1998.

Alternative C - Modified Design (preferred alternative)

The modified designs in this alternative were based on geotechnical and engineering evaluation, agency input, habitat design, detailed site inspections and characterizations, and community input. Implementation of the modified Master Plan design will provide increased bank stability, improved habitat, and limited and directed public access facilities.

Selection of the preferred alternative (Alternative C) was based on the assessment of a variety of factors including stability of the river bank, functional value of riverbank habitat, public safety and benefit, and cost of implementation. This included the consideration of removing existing deleterious materials.

Discussion of Alternatives

Alternatives were evaluated to determine the practicable option that would best avoid and minimize effects to waters of the U.S. and waters of the state including water resources and navigation, fishing, and public recreation uses. Criteria for determining the feasibility of the alternatives were habitat benefits; benefits to bank stability; in-water impacts and in-water structures; public safety; impacts to navigation, fishing, and public recreation; and cost effectiveness.

Alternative A – No Action

The No-Action Alternative would not require activities to modify riverbank habitat or remove existing deleterious materials and degraded in-water structures including old piles. The No-Action Alternative does nothing to stabilize the riverbank or improve riparian or shallow water habitat conditions. Humans will be attracted to the river's edge and will find ways to get close to the water regardless of the steepness of the slopes or materials that make up the riverbank. The No-Action alternative does nothing to provide for public safety concerns related to the presence of large concrete slabs, metal pieces including rebar, steep eroded slopes, and a degraded boat ramp. This alternative does not meet City of Milwaukie goals to reconnect the downtown core with the Willamette River, does not implement statewide goal 5 (Willamette River Greenway), does not provide a critically needed link to the regional trail systems, and does not manage or limit river access by users.

Alternative B - First Design Iteration

The first design iteration in 1998 met the primary goals of the Downtown Framework Plan including providing points of access for viewing and accessing the Willamette River and renaturalizing riverbank habitat. As noted, the primary objective of the City is to create a link from the downtown core to an improved riverfront. These improvements included a significant connection into downtown Milwaukie via a one block below grade crossing between Jefferson Street and Monroe Street, the establishment of large flat open spaces for active recreation, a community plaza, trails and bike paths with linkages to the regional trail system, scenic overlooks, a children's play area, a performance space, and a restroom building. As part of this plan a complete restoration of the riverbank along the Willamette River, Kellogg Creek and Johnson Creek was proposed. The area at the overlook south of Kellogg Creek was proposed as a flexible space that could potentially accommodate a small restaurant or pavilion, and removal of the degraded boat ramp and parking lot.

The key elements of Alternative B included removal of concrete and metal debris, regrading for bank stabilization and habitat benefit, and enhancing bank vegetation. It also included the establishment of open space along the river, connections to the downtown core, development of a community gathering space, children's play area, and removal of the boat ramp and parking lot.

Due to cost implications of the below grade crossing and the absence of a community-desired boat ramp replacement, Alternative B was deemed unfeasible. *Because this option was determined to be unviable from a cost perspective, it is not considered further in the alternatives analysis.*

Alternative C - Modified Design Iteration

Alternative C is similar to Alternative B but incorporates several important features that address community concerns. Through community outreach and input from the Oregon Marine Board the City determined that a new boat ramp with associated floating dock and a small parking area should be included to replace and improve the function and circulation associated with the existing degraded and unsafe boat ramp and parking lot.

Further key differences include addition of a transient boat dock to minimize watercraft use conflict and facilitate longer-term moorage, reestablishment of the park entrance to the south of Kellogg Creek, the development of a public plaza and water quality features, and elimination of the below grade crossing between Jefferson Street and Monroe Street.

Alternatives Comparison

A comparison of the two alternatives considers the following criteria: habitat benefits; benefits to bank stability; in-water impacts and in-water structures; public safety; impacts to navigation, fishing and public recreation; and cost effectiveness.

Habitat Benefits

Alternative A would provide no habitat benefits beyond existing conditions.

Alternative C improves the quality of fish habitat along the banks of the Willamette River, Johnson Creek and Kellogg Creek by removing deleterious material, integration of bio-engineered bank stabilization measures and replanting the area with native vegetation.

Alternative C proposes the redevelopment of the existing boat ramp and parking area with a reduced footprint utilizing pervious concrete paving and integrating bioswales to capture remaining stormwater runoff. The integration of these features and the use of the pervious paving are intended to minimize human impacts in the immediate vicinity of the boat ramp and the area north of the ramp (where a large portion of habitat improvements are proposed). Moving the proposed boat ramp to the southern portion of the park will also reduce habitat fragmentation and human activity impacts to the proposed habitat area between Johnson Creek and the boat ramp.

Benefits to Bank Stability

The No-Action Alternative (Alternative A) provides no improvement to existing bank stability. This approach is not suitable because the majority of the riverbank within the park area is eroding and contains a significant volume of deleterious materials which is undercut and becoming further destabilized. Alternative C would result in improved riverbank stability by removing concrete and other deleterious materials and re-grading and stabilizing over-steepened toes and lower bank areas affected by current and wave action, and removing loose sections of concrete.

In-Water Impacts and In-Water Structures

No in-water construction impacts would occur with the No-Action Alternative (Alternative A). However, degradation and “unraveling” of the existing boat ramp pavement would continue, resulting in additional in-water impacts.

In-water impacts associated with the Alternative C proposed light watercraft boat ramp and boarding dock, and transient boat dock will be largely temporary and related to construction activities. A no wake zone adjacent to the boat ramp and transient dock further limits impacts during peak usage of the facilities. The boat ramp and transient dock structures have been designed to minimize habitat for fish species that prey on juvenile salmonids; sections of steel grating on the gangway floor will maximize light penetration to waters below. The transient dock will also be located in deep water (a minimum of 20 feet below OLW) and will be subject to considerable flow velocities. Predatory species typically prefer shallow water areas that contain structural protection from high flow velocities. The boarding float will be constructed of wood surrounding and encapsulating foam. The decking will be plastic wood with sections of steel grating.

Alternative C would generate minor in-water impacts from installation of steel pilings to support the proposed dock structures, proposes removal of surface concrete and deleterious materials along the entire bank, and would result in temporary in-water construction impacts associated with excavation of the toe trenches needed to place material to stabilize the regraded bank slopes.

Public Safety

One goal of the Milwaukie Riverfront Park redevelopment is to provide areas for people to congregate, and access and enjoy views of the Willamette River. Existing riverbank conditions pose potential public

safety risks to people who physically explore the steep slopes that are embedded with concrete and metal deleterious materials and attempt to get closer to the river after leaving the relative safety of the bike and pedestrian pathways. Where soil is exposed, the resultant desire trails create bare, erosion prone banks, which is a management challenge for the City. These areas are subject to high water flows and will continue to erode and steepen over time. Alternative C improves public safety by providing clear access and specific areas for people to view the river up close rather than establishing trails through physically dangerous areas. Public activity will be channeled to the boat dock, elevated overlook plaza at the southern end of the park via a pedestrian walkway, amphitheater, and the pedestrian trail and surface overlook near the northern end of the park.

Alternative C further improves public safety by replacing the functionally and structurally deficient boat ramp, and providing a transient boat dock to minimize watercraft use conflict.

Impacts to Navigation, Fishing, and Public Recreation

Alternative A would have no additional impacts to navigation, fishing, and public recreation. Alternative C would improve public recreation through the creation of an easily accessed, significantly functional, and aesthetically pleasing public multi-use park facility that provides direct access to several waterways. Alternative C would have some minimal effects on navigation in the Willamette River due to the replacement of the boat ramp and addition of a floating dock, and the inclusion of a transient boat dock. These same in-water features would likely improve fishing opportunities due to the increased access to the Willamette River by watercraft users. Locating the transient dock over relatively deep, high velocity water will minimize the likelihood of the dock providing habitat for fish species that prey on juvenile salmonids. Shading is also expected to have less effect in deeper water (>20 feet) habitats due to the existing low light conditions at depth.

Cost Effectiveness

From a cost standpoint, the No-Action Alternative (Alternative A) would be the most effective alternative since it would involve no earthwork below the top of bank; however, it would not meet the goals of the Willamette Greenway Plan, nor the Downtown and Riverfront Plan to provide improvements to habitat for fish and wildlife, public access and uses, public safety, visual access to the Willamette River, and riverbank stability.

Selection of Preferred Alternative

The No-Action (Alternative A) meets only two of the six selection criteria by providing the least amount of in-water/in-structure impacts and being the least cost alternative.

The modified design iteration (Alternative C) clearly meets four of the six selection criteria (by improving fish and wildlife habitat benefits; bank stability; public safety; and navigation, fishing, and public recreation).

The habitat benefits associated with Alternative C, including the bioengineered bank stability measures, widespread native vegetation plantings, and allowance for large interrupted and connected areas of re-naturalized bank habitat is the primary criterion making it the preferred alternative. As key access points,

the boat ramp and boarding dock would direct and limit people to safe, appropriate places to view or use the river, minimizing undirected human activity that causes damage and risk.

MEASURES TO MINIMIZE IMPACTS

Conservation measures have been incorporated into the project design to minimize and avoid impacts to listed species and their habitat. These measures address in-water work, fish salvage and fish screen criteria, erosion control, containment of construction materials, handling of hazardous materials, and disturbance of riparian vegetation. The project proposes bioengineered methods instead of riprap where possible to stabilize the banks along the park. These are detailed further in the project's Biological Assessment, provided as Appendix F.

CONSERVATION MEASURES

The following mitigation and conservation measures are proposed to avoid, mitigate, or offset the adverse impacts of the proposed project on listed species, critical habitat, and EFH.

Erosion and Pollution Control Measures

- The contractor will adhere to permit conditions of NPDES 1200-C permit for the discharge of stormwater from construction sites. This permit is issued by DEQ under the authority delegated by the U.S. Environmental Protection Agency.
- An erosion and sediment control plan (ESCP) will be developed and implemented, in accordance with the conditions of the NPDES 1200-C permit. The ESCP may include, but is not limited to, the use of turbidity curtains, silt fences, temporary and permanent ground covers, and siltation ponds to protect water quality, with particular attention to safeguarding adjacent waterways (refer to Figures 10A – 10F, Appendix A).
- Erosion and sediment control measures will be implemented prior to ground disturbing activities, and shall remain in place until the project area is stabilized.
- Limit turbidity increase to 10 percent above background reading, as measured 100 ft downstream from the project.
- A pollution control plan will be developed and implemented, which includes limitations on chemical and fuel storage areas, as well as spill containment plans. Spill containment equipment must be stored on site, and the contractor must have the crew trained in its proper use. This plan shall satisfy all pertinent requirements of Federal, State, and Local laws and regulations.
- Construction equipment operating within 30 feet of any stream will contain appropriate spill containment measures, such as diapers.
- All construction equipment will be inspected and cleaned prior to operating within 150 feet of any stream. All construction equipment will be checked for fluid leaks and external oil, grease, dirt and caked mud will be removed. Untreated wash and rinse water will not be discharged into any stream. Temporary impoundments will be established to catch water from equipment cleansing, at least 150

feet from any stream and in a location that does not contribute untreated wastewater to any flowing stream.

- Non-work shift storage of equipment and vehicles, other than track-mounted vehicles and cranes, will occur at least 150 feet away from any stream.
- If feasible, storage areas for fuels and other potentially hazardous materials and areas for refueling and servicing construction equipment and vehicles will be located at least 150 feet from any stream. If staging areas are located within 150 feet of any stream, full containment of potential contaminants will be provided to prevent soil and water contamination, as appropriate.
- Adequate containment measures will be implemented to prevent pollutants or construction and demolition materials from entering any stream.
- Maintain hazardous material containment booms and spill containment booms on site to facilitate the cleanup of hazardous material spills.
- If flooding of the work area is expected to occur within 24 hours, evacuate areas used for staging, access roads, or storage and remove materials, equipment, and fuel.

Habitat and Fish Impact Avoidance and Minimization Measures

- For the purpose of this project, the regulated work area (also defined as the in-water work area or ordinary high water elevation,) is defined as the area at or below the following elevation of 18.4 feet, as shown on the plans
- Construction below regulated work area will occur during the ODFW in-water work period, which extends from July 1 to October 31 in the Willamette River. The in-water work period for Kellogg Creek is July 1 to September 30. There is no in-water work proposed in Johnson Creek. An extension of the in-water work period requires approval by the Engineer, ODFW, NMFS, ODSL, and USACE. Maintain passage for adult and juvenile fish for the duration of the project.
- Placement or removal of embankment material within the regulated work area is restricted to the in-water work period.
- Impacts will be minimized through the use of appropriate construction techniques including work area isolation, turbidity monitoring, and other environmental protection controls. Where feasible, work would be conducted from upland areas to limit temporary impacts to waterways.
- Install isolation barriers or other Engineer approved containment method, to isolate in-water work areas from the aquatic environment. Installation and removal are restricted to the ODFW in-water work window. Isolation barriers are required for the removal of the existing boat ramp and construction of the new boat ramp.
- Notify the Engineer at least ten working days prior to completion of containment/isolation device construction. Provide qualified biologist access to the containment/isolation devices to remove fish trapped within the devices before beginning work within the containment/isolation devices.

Entrapped fish will be removed in accordance with NMFS guidelines identified in the biological opinion.

- Contaminated or sediment-laden water from the project or water contained within a containment/isolation device will not be discharged directly into any waterway until satisfactorily treated (e.g., by bioswale, filter, settlement pond, pumping to a vegetated upland location, bio-bag or dirt-bag).
- Monitor turbidity during construction per DEQ section 401 permit requirements.
- Blasting is prohibited in any waterway.
- Screen water pump intakes according to the NMFS Juvenile Fish Screen Criteria for Pump Intakes (1997). [Note: this is online at <http://swr.ucsd.edu/hcd/fishscrn.htm>]
- Minimize alteration or disturbance of stream banks and existing riparian vegetation. Replant all areas temporarily disturbed by construction activities, as shown on the plans.
- Reinitiate ESA and EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect listed species, critical habitat or EFH, or if new information becomes available that affects the basis for NMFS conservation recommendations.
- Implement the following conservation measures where steel piles are driven within the wetted channel:
 - When using impact drivers to install a piling, use the smallest driver and the minimum force necessary. Use a drop hammer or hydraulic impact hammer when feasible and set the drop height to the minimum necessary to drive the piling.
 - If currents are 1.7 miles per hour or less, surround the piling being driven with an unconfined bubble curtain for the full depth of the water column.
 - If currents are greater than 1.7 miles per hour, surround the piling being driven with a confined bubble curtain (e.g., a bubble ring surrounded by a fabric or metal sleeve) for the full depth of the water column. An additional bubble ring will be added for each 35 feet of water depth.

DESCRIPTION OF RESOURCES IN PROJECT AREA

The Milwaukie Riverfront Park area typifies degraded conditions often found along large floodplain rivers flowing through heavily urbanized landscapes. The existing bank habitat is covered by a wide range of debris including demolition debris such as broken concrete and asphalt chunks, twisted metal and scrap iron, and wooden piles. Shallow water habitat is highly simplified and the beach habitat is limited and littered with debris. The substrate consists of gravel and cobbles with a high percentage of fines. Refer to the site photographs provided as Appendix C.

The project is located in a reach of the Willamette River referred to as the Milwaukie Bay, which is a large pool formation.

The Willamette River, Kellogg Creek, and Johnson Creek near the project provides rearing and migration habitat for Lower Columbia River chinook and steelhead, Upper Willamette River chinook and steelhead, and Lower Columbia River coho. These waterways are identified as water quality limited streams for a number of parameters, including dissolved oxygen, flow modification, fecal coliform, dieldrin and DDT, biological criteria, and mercury, among other criteria (ODEQ 2006). Additionally, summer water temperatures can exceed the threshold for salmonids, which may limit use of the area for rearing. There is no suitable spawning habitat within the project area.

Due to the disturbed nature of the project site, there is no suitable habitat for any federally listed plant and wildlife species. The bald eagle was removed from the list of federally threatened and endangered species. However, this species is protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The closest known bald eagle nest is over 1,500 feet from the project area and the project will not disturb any potential nesting bald eagles.

An on-site investigation of vegetated corridors within the project area resulted in the identification of three vegetated communities including:

- Community A – a black cottonwood forest with Armenian blackberry and English ivy in the understory largely along a narrow margin of Kellogg Creek and the Willamette River;
- Community B – a maintained grass area interior to the site dominated by Kentucky bluegrass and weeds; and
- Community C – a big-leaf maple mixed forested area with an understory of Armenian blackberry along the northern portion of the site.

Black cottonwood (*Populus balsamifera*) trees of various ages line the shore of the Willamette River within the project site, while larger mature cottonwood and mid-mature big-leaf maple (*Acer macrophyllum*) (over 100 feet tall) grow on slopes above the waterways. Armenian blackberry (*Rubus armeniacus*) and/or English ivy (*Hedera helix*) dominate the understory of all forested areas. Non-forested areas are comprised of maintained grass, pavement, or commercial structures. The maintained grass areas are dominated by Kentucky bluegrass (*Poa pratensis*) and numerous weedy species. Surrounding areas that are not part of the greenway have been converted to commercial and public uses.

Reach 1 is located between the Kellogg Creek Water Treatment Plant and Kellogg Creek. This section integrates an existing sheet pile-walled area approximately thirty feet above ordinary high water, surfaced with gravel and degraded asphalt. Kellogg Creek below has low to steep eroded banks incorporating deleterious material including metal reinforcing bar debris and concrete rubble, varying in size from very large chunks to fractured bits. The creek flows over 1-4 inch round river cobble mixed with broken concrete chunks. Approximately 75 decaying wooden piles remain in this area near the confluence with the Willamette River. Existing vegetation includes very narrow margins of degraded Black cottonwood forest and Himalayan blackberry thickets. The south bank is steeply sloped (1.5H:1V) while the north bank slopes more gradually (3H:1V) but provides uninhibited access which has resulted in bare compacted earth banks.

Reach 2 is located between Kellogg Creek and midway between Washington and Jefferson Streets. A natural bedrock outcrop exists between the Willamette River and the boat trailer parking lot. Slopes are

gradual during low water in Reach 2 (approximately 6.5H:1V) which allows free access to the river edge, thus the shore ranges from a thin layer of small round river cobble to bare compacted mudflats. These areas are frequented by visitors intending to feed the Canada geese that are also commonly seen. Vegetation within this section includes a very narrow margin of degraded Black cottonwood forest along the upland edge, with areas of maintained lawn.

Reach 3 is located midway between Washington and Jefferson Streets to midway between Monroe and Jackson Streets. The banks within this reach incorporate substantial amounts of deleterious material including broken concrete chunks and metal debris. The existing asphalt boat ramp is extremely degraded and potentially hazardous, ending abruptly below low water level. Several large slabs of asphalt have broken off the ramp and are lying on the bank. Bank conditions in Reach 3 slope steeply (approximately 1.5H:1V) to Elevation 14, where the slopes become more gradual to receive tidal inundation. Large concrete debris roughly piled and covered with Himalayan blackberry and small willows make up the steep slope. A seasonally exposed narrow beach is located on the lee side (upstream) of the existing boat ramp. When exposed, the area is covered with a moderate layer of round river cobble with fines.

Vegetation within this section includes a narrow margin of degraded Black cottonwood scrub forest along the bank (typically greater than 25 percent), with upland areas of maintained lawn and a small pocket of big-leaf maple mixed forest.

Reach 4 is located midway between Monroe and Jackson Streets to Harrison Street. Slopes of the Willamette River in Reach 4 are similar to that of Reach 3. Steep slopes built up with broken concrete slabs are covered with blackberry before giving way to gradually sloped, tidally and seasonally inundated river edge. A large cobbled jetty, inundated except during low water, makes up the confluence with Johnson Creek. Vegetation within this section includes a short stretch of a narrow margin of Black cottonwood scrub forest along a very steep bank that transforms into big-leaf maple mixed forest along the Johnson Creek bank. Lawn is the upland vegetation.

The banks of Johnson Creek near the confluence have recently benefited from substantial improvements by the Johnson Creek Watershed Council, including invasive removal and native plantings. Cleanup efforts related to this project will be limited to the top of Johnson Creek's banks to minimize potential impacts to work already completed.