

# Tri-City Water Pollution Control Plant

SITE MASTER PLAN

PREPARED BY



**CH2MHILL**

**GREENWORKS**

**Miller|Hull**

August 2002



# Acknowledgements

The Tri-City Service District (TCSD) staff and their consultant team would like to acknowledge the Tri-City Advanced Facility Planning Citizen Task Force (CTF) members.

#### **Representing Gladstone**

Wade Byers (CTF chair)  
Ray Jaren

#### **Representing West Linn**

Lynne Chicoine  
Michael McFarland

#### **Representing Oregon City**

Derrick Beneville  
Doug Neeley

These CTF members volunteered their time to discuss many issues at numerous evening meetings over the course of this project. Without their invaluable guidance and input the completion of this work would not have been possible.

We would also like to acknowledge the following individuals for their efforts associated with this project:

**Sharon Zimmerman**/Oregon City Associate Engineer and Project Manager of the Oregon City Riverfront Master Plan

**Jerry Herrmann**, President of Earth Crusaders Program



# City of GLADSTONE

August 7, 2002

Board of Commissioners' Office  
Clackamas County  
906 Main St.  
Oregon City, OR 97045

RE: Endorsement of Tri-City WPCP Site Master Plan

Dear County Commissioners:

It is with great pleasure that the Citizen Task Force (CTF) unanimously endorses this Tri-City Water Pollution Control Plant (WPCP) Site Master Plan. We have worked closely with your staff over the last couple years to develop guiding principles for this project and to ensure that your staff has generated a plan that meets these principles. We believe that this plan:

- Cost effectively provides wastewater services to the Tri-City Service District ratepayers,
- Incorporates numerous community benefits such as providing recreational and meeting areas that are related to providing wastewater treatment capacity,
- Enhances the site by reintroducing native environments such as wetlands and forested areas,
- Provides an example for others in the County for protecting and enhancing water resources, and
- Highlights the rich history of the site through a trail system with interpretive elements intended to inform the public.

As citizens of the District, we urge continual citizen involvement in the implementation of this plan.

Sincerely,



Wade Byers  
Chair of Tri-City Citizen Task Force  
and Mayor of Gladstone

**City Hall**  
525 Portland Avenue  
Gladstone, OR 97027  
(503) 656-5223  
FAX: 650-8938  
E-Mail: glad@spiritone.com

**Municipal Court**  
525 Portland Avenue  
Gladstone, OR 97027  
(503) 656-5224

**Police Department**  
535 Portland Avenue  
Gladstone, OR 97027  
(503) 656-4253

**Fire Department**  
535 Portland Avenue  
Gladstone, OR 97027  
(503) 656-4253

**Public Library**  
135 E. Dartmouth  
Gladstone, OR 97027  
(503) 656-2411  
FAX: 655-2438  
E-Mail: qlref@lincc.lib.or.us

**Senior Center**  
1050 Portland Avenue  
Gladstone, OR 97027  
(503) 655-7701  
FAX: 650-4840

**City Shop**  
18595 Portland Avenue  
Gladstone, OR 97027  
(503) 656-7957  
FAX: 722-9078

# Tri-City Water Pollution Control Plant

## SITE MASTER PLAN

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**CH2MHILL**

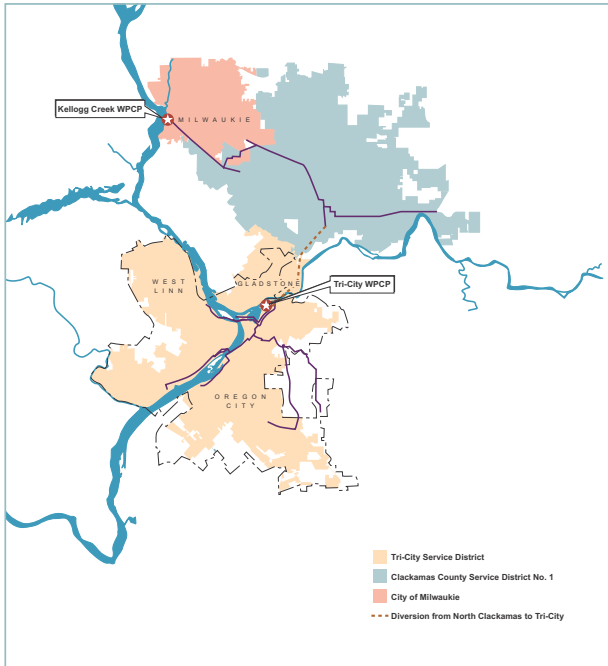
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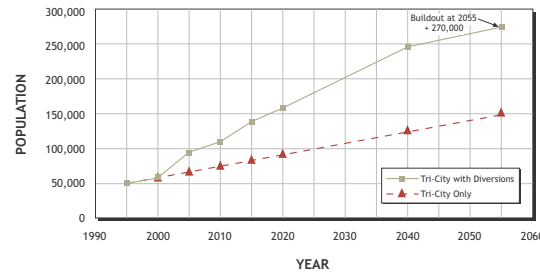
August 2002



# On a Mission to Continue Protecting Public Health and Improving Water Quality



The Tri-City Water Pollution Control Plant (WPCP) provides wastewater services for Gladstone, Oregon City, and West Linn. The adopted Sewerage Master Plan considered alternatives for serving projected growth in North Clackamas and recommended expanding the Tri-City WPCP because it made the best use of existing facilities and minimizes the facilities needed in anticipation of growth.



Service Area	Population Projections		
	1998	2020	Buildout
Tri-City Service District	55,000	90,000	150,000
North Clackamas Diversion		67,000	120,000
<b>Total</b>	<b>55,000</b>	<b>157,000</b>	<b>270,000</b>



Building on the recommendations of the Sewerage Master Plan, the next step was to develop the specifics of improving and expanding the Tri-City site.

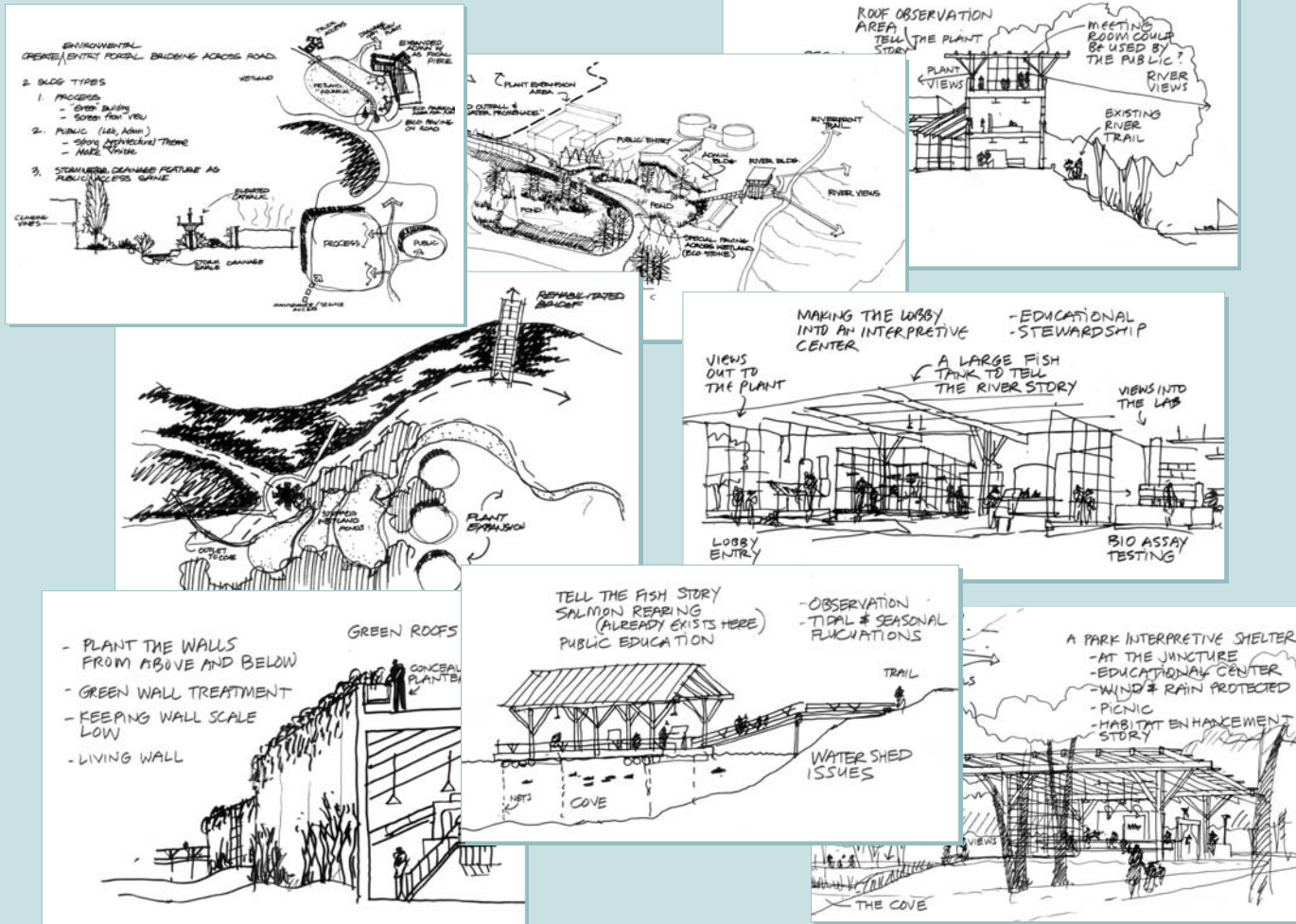


# Citizen Task Force Developed Guiding Principles

## Citizen Task Force

In 1998 WES established a Citizen Task Force (CTF) composed of representatives from Gladstone, Oregon City, and West Linn to guide development of improvements and expansions at the Tri-City WPCP. The CTF created the following planning and design principles:

- 1 Relate to and create a sense of community and place:
  - Be sensitive to the historic character and settlement pattern
  - Create a functional linkage to other opportunities within the community:
    - Schools
    - Recreation (soccer)
    - Social, cultural, and historic facilities and destinations
    - Trails
- 2 Emphasize the District's mission, water quality, and riparian ecological responsibilities by complementing and enhancing the area's natural features:
  - Provide water quality and fish habitat information, education and interpretation
  - Integrate nature into the designed space
  - Consider Sustainable development concepts and design principles
  - Use native vegetation
- 3 Provide a facility with an architectural design vocabulary that is pleasing and low profile. The facility should provide a variety of distinguishing spaces within, such as water features, gardens, open spaces, and small-scale interpretive features:
  - Basic materials, colors, windows, roof forms and details should be compatible with this design principle
  - Consider opportunities for interpretation that could be expanded in subsequent phases
- 4 Demonstrate a continuous commitment to the environment and the community by maintaining the quality of the natural and built environment:
  - Maintenance standards
  - Dedicated open space
  - Historic/cultural preservation and interpretation



# Site History—A Key Focus of the CTF

Site history was reviewed in the context of how geology, heritage, architecture could be incorporated into features of future facilities and landscapes.

THE TRI-CITY AREA HAS SEEN MANY CHANGES over the last 200 years. These changes—cultural and environmental—define our heritage, and provide a perspective for making decisions about future plans for the area.

## Native Americans

Originally, the area was populated by several Native American tribes. In April 1806, for example, Meriwether Lewis and William Clark were told at their camp on Sauvie Island that eleven villages flourished in the Clackamas River area.

On both sides of the river, near the present-day Tri-City WPCP, the Clackamas tribe lived in two villages. Other tribes living in the area included the Clowewalla, Cashhooks, Kalapuya, and Mollala. Many tribes gathered seasonally at the Willamette River Falls to catch salmon.

In the early 1800s, fur traders regularly met with Native Americans at the confluence of the Clackamas and Willamette Rivers. The Clackamas tribe at this time was estimated to number 1,000. In 1830, an epidemic—possibly influenza or malaria—killed many Native Americans in the lower Columbia River area. Two decades later, in 1851, for example, the Superintendent of Indian Affairs of Oregon counted 19 men, 29 women, and 40 children left in the Clackamas tribe. In 1856 all the remaining native peoples in the Oregon City area were removed by military force to the Grande Ronde reservation.

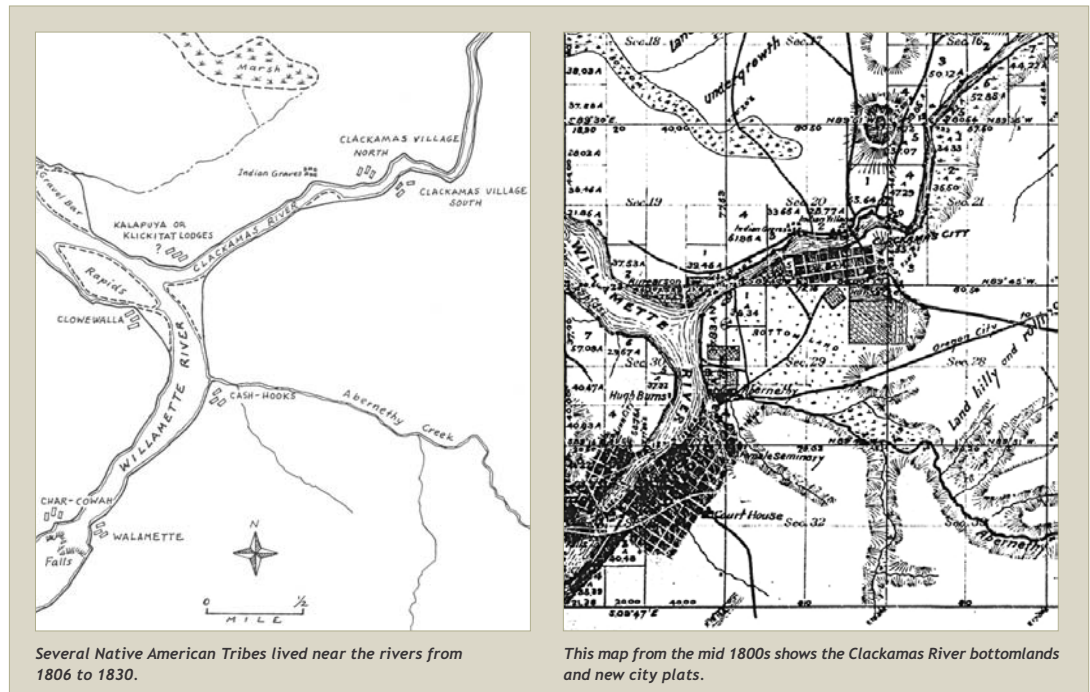
## Settlers

The first wagon train brought settlers to the area in 1843. Riding one of those wagons was Charles Pickett from Virginia, who by 1846 advertised to sell his land claim in the first issue of the *Oregon Spectator*. The town



Willamette Falls was a major gathering place for Native Americans.

"Willamette Falls" by Joseph Drayton, 1841 (OrHI 46193)  
Courtesy of Oregon Historical Society



Several Native American Tribes lived near the rivers from 1806 to 1830.

This map from the mid 1800s shows the Clackamas River bottomlands and new city plats.

Source: Clackamas County Surveyors Office

site he sold was located on the land that currently contains the WPCP. Named Clackamas City, the town eventually included a blacksmith and a school. In time a sawmill was built in the community, but during Christmas of 1849, the town was flooded and destroyed.

Also riding in that first wagon train were Hiram and Susan Straight whose land claim overlapped that of Charles Pickett. When Pickett departed for California, the Straights

took it over and farmed the land, selling off parcels to finance the building of a Classic Revival style house. The house is still standing today. The Straight Pioneer Cemetery is located nearby.

Arriving in 1846 by the Barlow Road, the Hunsaker family settled on land just southeast of the Clackamas City plat. This area was eventually developed into a large apple orchard called Fruit Hill Farm. In 1853, the Hunsaker's built a toll bridge across the

Clackamas River and then sold it in 1854 to the ferryman, Fendel Cason, who opposed its construction. In 1855, a herd of cattle caused it to collapse.

The settlers logged Douglas firs and hemlocks growing on the bluffs of the Clackamas River. In those days, several white oak groves stood near the river and south on the fringe of the hills.





A 1981 aerial illustrates the industrial uses of the site.

### Industry and Commercial Development

The publisher of the Oregonian newspaper, H.L. Pittock, built a paper mill in the area of the former Clackamas City, which had been platted by the Straights as a new community called Park Place. The paper mill began operating in 1868 using riparian trees from the Clackamas River for pulp. This industry stimulated the building of a railroad station and increased economic activity in the area. By the late 1800s, Park Place grew to a population of 100. After the mill closed in 1885, a furniture factory operated in the same location for a short while. Over the years, Park Place developed into a small garden community. In 1940, the inhabitants of Park Place numbered 650.

In 1964, Jack Parker began excavating a gravel quarry in the Clackamas River bottomlands. Eventually, this area became Clackamette Cove. The quarry was operated by Dakota Minerals from 1975 to 1986, and by Willamette Western from 1987 to its closure in 1993. East of the cove, Rossman Landfill received municipal waste from 1960 to 1969. Afterwards, it was used for the manufacture of asphalt and concrete and as a log loading area. Since 1986, the site has been unused. The Tri-City WPCP, which is located northeast of the cove, and north of the former landfill, began operations in 1986. Clackamette Cove now features a salmon rearing facility.

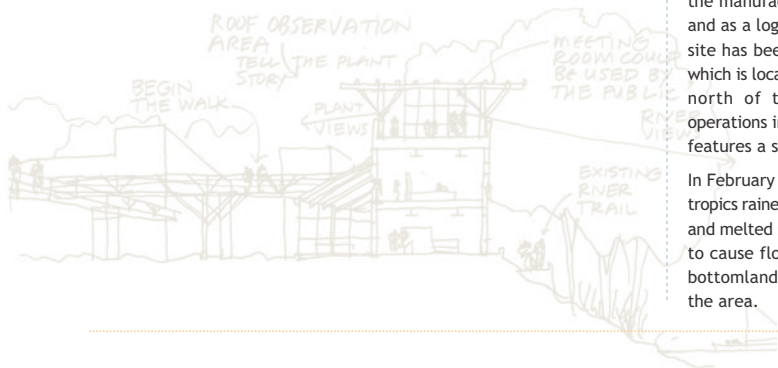
In February 1996, warm weather from the tropics rained in the Willamette River valley and melted snow in the Cascade Mountains to cause flooding in the Clackamas River bottomlands redefining flood criteria for the area.



Although most of the industrial activity had ceased by the early 1990s, the impact of these activities is still apparent.



A majority of the site was inundated during the flood of February 1996.





# Transforming the Existing Site...

## Treatment Facilities in a Flood Plain Forest

Based on the CTF design principles, WES and the Tri-City WPCP expansion planning team created a new concept for the site. This concept, which seeks to restore some of the natural and historical character of the area, is called "Forest in the Flood Plain."

The idea is to plant native trees and shrubs throughout the adjoining sites and integrate the treatment facility by planting trees and shrubs around and through the process areas. Vegetation will be used to partially screen process units from view. Moreover, the Tri-City WPCP site layout will be altered to incorporate a natural stormwater drainage area that features biofiltration swales and wetland treatment areas. This approach will improve the attractiveness of the area and serve as a community showcase for stormwater management.

The Forest in the Flood Plain concept addresses Oregon City land use regulations that require a 200-foot buffer from the 2-year high water mark of the Clackamas River and also require a balanced cut and fill approach so that the land within the 100-year floodplain is not filled in. It also provides the County with a location for public interpretation and wetland habitat creation in response to National Marine

Fisheries Service (NMFS) and Oregon Department of Fish and Wildlife (ODFW) goals of improving habitat for salmonid species. Even more practically, this type of layout will protect the facility from potential flood damage.

Re-establishing a Forest in the Flood Plain will improve wildlife habitat and create a park-like natural recreation area for hiking and bird watching. The trees and vegetation will help enhance flood management and water quality in the area by slowing down and filtering stormwater runoff, and by providing shade to cool the shores of Clackamette Cove.

The strip of land that separates Clackamette Cove from the Clackamas River is gradually eroding. If a breach develops in this area, there is some concern that the resulting hydrology would eventually redistribute sediments and rocks and potentially disturb important aquatic habitats within the cove. As part of the Forest in the Flood Plain approach, this streambank will be stabilized to preserve the existing landforms, which are conducive to the development of salmon rearing conditions and establishment of new wetland areas.



Existing Tri-City WPCP Site

## ... to Reintroduce the Past Heritage While Protecting Human Health and Improving Water Quality



Simulation of Proposed Tri-City WPCP Site Concept—Renewed Forest in the Floodplain

### Site Development

The areas to the west and south of the treatment facilities will be developed in compliance with the Oregon City Water Front Master Plan (WFMP), which designates the land use as open space and recreational facilities. Some of the elements of the WFMP were incorporated into this site master plan. For example, anticipated features include a pedestrian trail along the shore of Clackamette Cove, a floating dock in the cove to view the salmon rearing process, an amphitheater, and several ball fields.

The site will be developed to meet Tri-City WPCP's growth needs while providing complementary educational and recreational amenities. To help establish support for the overall project, the CTF recommended implementing environmental enhancements and recreational facilities during early phases of the site development. WES's vision is to create the most significant open space in urban Clackamas County.

In preparation for development of the area, the Tri-City Service District (TCSD) acquired the former Rossman Landfill property south of the Tri-City WPCP from the bankruptcy court. The district and DEQ reached an agreement as part of DEQ's Brownfield Cleanup program that provides for \$2 million of site remediation to address hazardous substance releases (gasoline spills) and solid waste disposal at the property. This prospective purchaser's agreement limits any activity at the site that will contribute to the exacerbation of existing contamination. The features of the proposed site master plan are compatible with this provision.

As directed by the CTF, public amenities at the site will be designed so as to minimize vandalism and keep maintenance easy. Duplication of amenities provided at other local facilities was avoided. Consequently, the plan features two soccer fields, one baseball field, with parking, and a shoreline amphitheater.





Figure ES-1  
**Environmental Enhancements and Community Facilities**  
 TRI-CITY WPCP

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## ...features important to the CTF.

### Floodplain Forest Enhancement

Wherever possible, reintroduce historical floodplain trees, such as ash, willow, and cedar. This will help improve water quality and fish & wildlife habitat in the river and cove and create public education opportunities.

### Interpretive Trail System

Construct trails, overlooks, boardwalks, signage to inform the public of rich site history, including:

- Native American use of site and environs.
- Early 19th century settlement and relevance to Oregon's early history.
- Natural history: geology, biology, and ecology.
- Environmental management techniques.

### Plant Operations Overlook

- Viewpoint of wastewater treatment facilities with educational component to illustrate treatment plant process.
- Viewpoint of site stormwater management features and reintroduction of floodplain plant communities.

### Floating Dock Education Structure

- A demonstration site for Oregon Department of Fish & Wildlife's current fish pens in Clackamette Cove.

### Amphitheater

- Create public meeting space in concert with waterfront features.

### Biofilters for "Green Solutions"

- Sustainable approach to odorous air treatment.

### "Green Street" Boulevard

- Traffic lanes, bike lanes, and sidewalks.
- Landscaping.
- Road runoff treatment.
- Median biofiltration swales.
- New alignment south of landfill site for stabilization objectives.

### Shared Parking

- Access to treatment plant and recreational facilities. Impervious surface reduction using Eco-paving.

### Public Recreation Area

- Ball fields for community use.
- Bleachers and concessions stands.

### Effluent Reuse Demonstration Project

- Create natural wetland plant communities at site entry using treated plant effluent to demonstrate effluent water quality and natural Clackamas River floodplain. Reuse site will serve as source of water for onsite irrigation.

### Interpretive Lobby

- At entrance to the administrative and operations building, create overview of Water Environment Services mission and Clackamas River watershed issues for visitors.

### Stormwater Natural Treatment

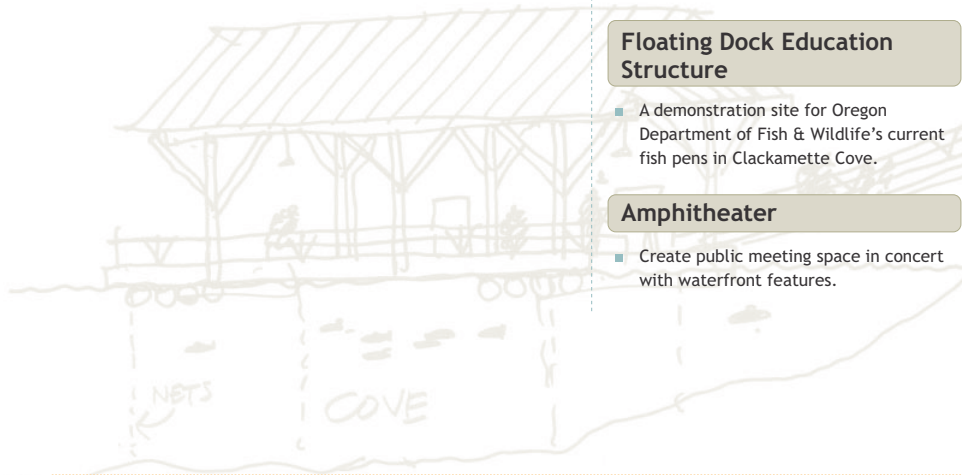
- Innovative stormwater collection and treatment facilities that demonstrate biofiltration swales and wetland treatment areas.

### Constructed Wetlands

- Reintroduce wetland plants native to the Clackamas River floodplain. Provide habitat for waterfowl. Integrate with interpretive trail system.

### Streambank Stabilization

- Stabilize streambank to preserve the existing landforms, which are conducive to the development of salmon rearing conditions and establishment of new wetland areas.



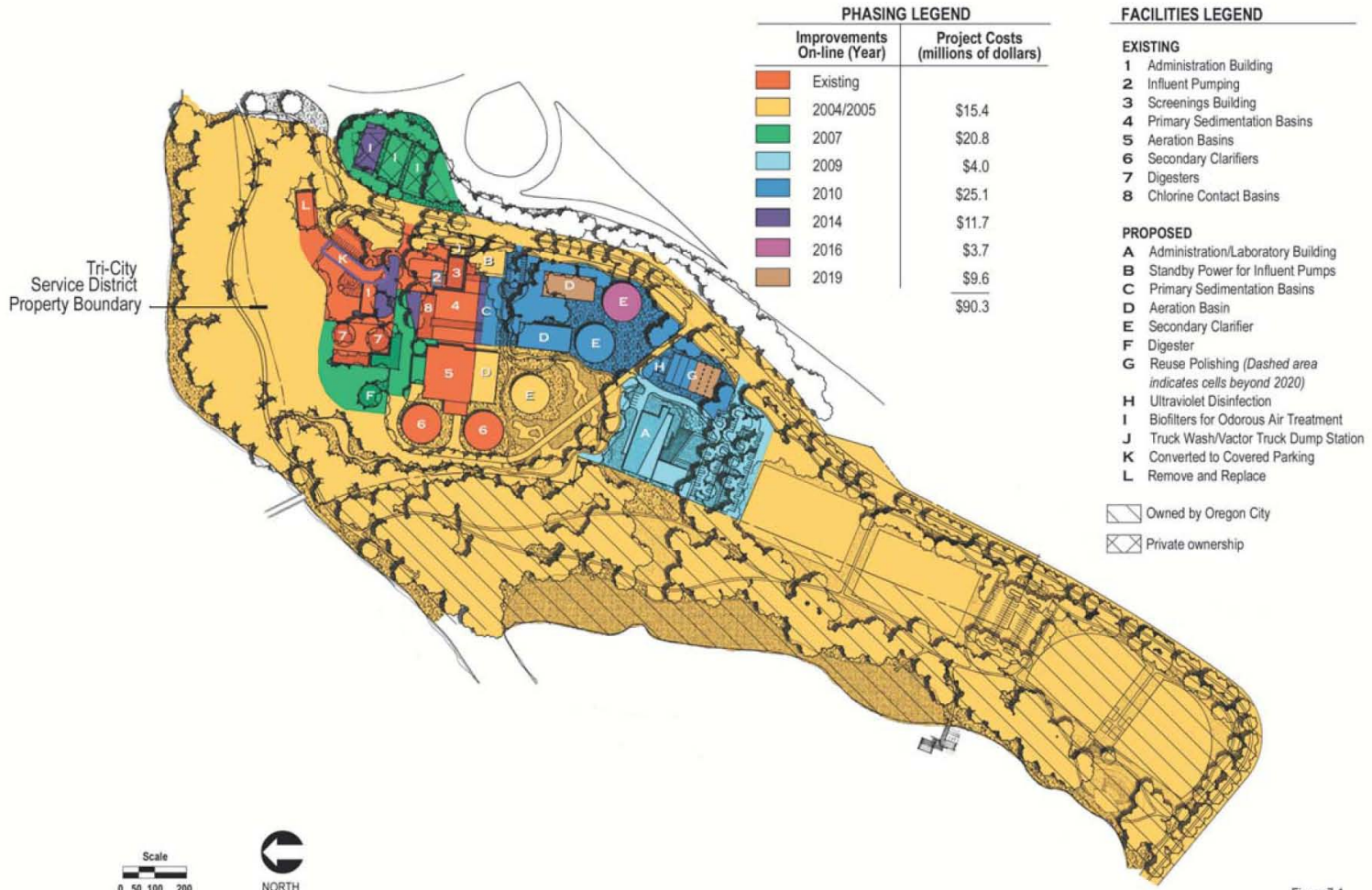


Figure 7-1  
Phasing Plan  
TRI-CITY WPCP

# Partnering with Oregon City is essential to implementing this conceptual site master plan.

TO IMPLEMENT THIS SITE MASTER PLAN significant coordination and cooperation between the stakeholders will be essential. The District's planning efforts, culminating with this Site Master Plan, define the wastewater facility needs within the District's property. The community facilities that are presented are conceptual in nature and have been identified through discussion with the CTF. A portion of these facilities are located on property owned by the District while the remainder on land owned by Oregon City. Working together the District and Oregon City can further define the actual community facilities that will provide the most benefit to the community.

To date the District and Oregon City have worked together to ensure that ongoing planning efforts are compatible. In January 2001, Oregon City embarked on a land use master planning effort that included riverfront from Blue Heron Paper along the Willamette River to High Rocks on the Clackamas River. One of the underlying goals of Oregon City's planning effort was enhance the linkage between the downtown area and the water front. The resulting Waterfront Master Plan (WFMP) as adopted by Oregon City Council in the Fall of 2001 concluded

that the land directly west and south of the Tri-City WPCP be designated as public open space. This site master plan respects the goals of the City's waterfront master plan. We have created this plan to be consistent with the waterfront master plan so that our facilities fit into the community's vision of this wonderful place.

The community facilities improvements include a range of needs from streets and pathways

and ball fields to sanitary landfill capping and riverbank stabilization. The Treatment Facility expansion project will be required to build some of these improvements as part of the development approval. Funding for other community facilities like the amphitheater will need to be identified. The partnership between the City and the District, along with other funding sources will be essential to bringing all the elements of this plan alive.

Preliminary Cost Allocation (millions of dollars)	Tri-City Service District	Oregon City	Unassigned
Public Improvements	\$5.2	\$2.1	\$4.5
Wastewater Treatment Facilities			
Ongoing	\$6.5	--	--
Future	\$85.1	--	--

*Additional discussion between the District and Oregon City will be required to finalize this preliminary cost sharing proposed by the CTF.*

