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**M E M O**

DATE: February 17, 2009  
TO: Planning Commissioners  
FROM: Sallie Edmunds, Bureau of Planning and Sustainability *SE*  
SUBJECT: River Plan / North Reach Acquisition and Restoration Cost Estimates

The purpose of this memo is to describe acquisition and restoration cost estimates for the restoration sites identified in the River Plan / North Reach. The estimated cost to acquire and restore the restoration sites is approximately \$165 to \$225 million. This estimated cost range is based on a variety of factors but does not include cost to cleanup contamination.

The figures below are estimates generally based on current and past data ranging from 2004 to 2008. The estimates illustrate one point in time and will change in the future depending on market values, inflation, and technology.

**Acquisition**

Acquisition cost estimates included in the attached table show area and cost information for restoration sites that are in private ownership. The acquisition areas are categorized into four acreage ranges: sites with less than two acres for acquisition, two to six acres, seven to 50 acres, or 51 to 120 acres.

Also included is a range of acquisition costs for each site. The price per square foot is expected to vary from \$3 to \$8 per square foot for typical industrial land in this area. This range is based on research conducted for the *2004 Industrial Districts Atlas* and discussions with industrial real estate brokers. It is important to note that acquisition costs can also vary by site location, size, sale negotiation, and other factors. The acquisition cost for Sauvie Island is based on an estimate of \$0.15 to \$0.55 per square foot for agricultural land from the Multnomah County Assessor and farm sales information for the area.

The estimated acquisition cost is \$35 to \$95 million.

**Restoration**

To determine restoration cost estimates, restoration treatments were assigned to each site by Bureau of Environmental Services and Bureau of Planning and Sustainability staff based on the project description. In total, 12 restoration treatment types were used.

Off-Channel Habitat	\$3 / square foot
Willamette Bank Restoration	\$1,500 / linear foot
Willamette Bank Enhancement	\$500 / linear foot
In-Channel Habitat	\$22.50 / square foot
Revegetation	\$1.15 / square foot
Berm Removal	\$1.85 / cubic foot
Removal of Structures	\$12 / square foot
Stream Daylighting	\$1,500 / linear foot
Tributary Enhancement	\$11 / square foot
Wetland Enhancement	\$0.20 / square foot
Stormwater Swale	\$50 / square foot
Floodplain Restoration	\$3 / square foot

A 75 percent contingency cost was added to the estimated restoration cost due to the low level of certainty of what the work will actually entail. This is the practice used by the City in the Capital Improvement Project process.

A management fee multiplier of 100 percent was applied to the restoration cost estimate to cover elements of project design such as: project management; alternatives analysis report; engineering design; existing conditions, wetlands, and ordinary high water (OHW) boundary surveys; wetland delineation, OHW determination field work and reports; hydraulic and hydrologic report and modeling; archaeological survey and reporting; geotechnical site analysis and report; hydrology data collection (groundwater, stream flow data, etc.); sediment and water quality sampling and reporting (including Phase 1 report); permitting; construction outreach; and post construction such as as-built survey, long-term monitoring, and long-term maintenance.

Since these estimates assume a clean site, sites that are highly contaminated will either cost significantly more or won't be restored until cleanup has occurred.

Restoration costs include:

Restoration	\$ 47 million
Contingency	\$ 36 million
Management Fee	\$ 47 million
<b>Total Restoration</b>	<b>\$130 million</b>

#### Summary of Overall Costs

	<b>Low</b>	<b>High</b>
Total Acquisition	\$35 million	\$95 million
Total Restoration	\$130 million	\$130 million
<b>Total Acquisition/Restoration</b>	<b>\$165 million</b>	<b>\$225 million</b>

Attachment: Table 1. Estimated Acquisition and Restoration Costs for River Plan / North Reach sites.

**Table 1. Estimated Acquisition and Restoration Costs for River Plan / North Reach Sites**

		Acquisition <sup>1</sup>		Restoration <sup>2</sup>	Acquisition and Restoration <sup>3</sup>
Site	Acquisition Acres Range	Acquisition Cost Range		Total Restoration Cost Estimate	Total Acquisition + Restoration Range
		in millions		in millions	in millions
1	Kelley Point Park	City-owned		\$6	\$6
2	South Rivergate Corridor	51 to 120	\$13 - \$34	\$5	\$18 - \$39
3	Crown Cork/Baltimore Woods	2 to 6	\$0.7 - \$2	\$1	\$2 - \$3
4	Mar Com Property	2 to 6	\$0.1 - \$0.3	\$0.2	\$0.3 - \$0.5
5	Willamette Cove	Metro-owned		\$10	\$10
6	Triangle Park Property	7 to 50	\$1 - \$3	\$38	\$39 - \$41
7	Mock's Crest	City-owned		\$6	\$6
8	Swan Island Lagoon	City-owned		\$2	\$2
9	Sauvie Island Properties	51 to 120	\$0.8 - \$3	\$2	\$3 - \$5
10	Harborton Wetlands	51 to 120	\$12 - \$32	\$5	\$17 - \$37
11	Owens Corning	7 to 50	\$1 - \$4	\$3	\$4 - \$7
12	Linnton Beach	2 to 6	\$0.6 - \$2	\$2	\$3 - \$4
13	Linnton Plywood Stream Mouth	< 2	\$0.08 - \$0.2	\$1	\$1
14	Transloader International	< 2	\$0.1 - \$0.3	\$0.6	\$0.7 - \$0.9
15	Doane Creek	7 to 50	\$2 - \$7	\$9	\$11 - \$16
16	Saltzman Creek	2 to 6	\$0.4 - \$1	\$5	\$5 - \$6
17	Balch Cove	2 to 6	\$0.1 - \$0.3	\$5	\$5
18	Terminal 1 Cove	2 to 6	\$0.4 - \$1	\$24	\$24 - \$25
19	Swan Island Beaches	7 to 50	\$3 - \$7	\$3	\$6 - \$10
20	Columbia Slough Confluence	City-owned			Complete
21	Cathedral Park	City-owned		\$1	\$1
	<b>Total</b>		<b>\$35 - \$95</b>	<b>\$130</b>	<b>\$165 - \$225</b>

**Notes:**

1 Acquisition costs are expected to vary by site within an estimated range of \$3 to \$8 per square foot for typical industrial land in this area. The average market land value per square foot estimated by Multnomah County Assessment and Taxation Division in Spring 2004 was \$3.90 in Rivergate, \$4.07 in Swan Island/Lower Albina, and \$4.99 in the Northwest Industrial District (see *2004 Industrial Districts Atlas*). In comparison, discussions with industrial real estate brokers indicated that typical industrial land values had risen to around \$7 to \$8 per square foot by 2008 for clean, buildable land in Portland, reflecting increasing land values over the economic upswing years from 2004 to 2008. Acquisition costs can also vary by site location, size, sale negotiation, and other factors.

Acquisition costs for Sauvie Island include a range of \$0.15 to \$0.55 per square foot for agricultural land. This range is based on data from the Multnomah County Assessor and farm sales information for the area.

2 Restoration cost estimates were derived from the area of the site requiring restoration times the median unit cost of the identified restoration treatment. Unit cost ranges were determined through interviews with industry professionals in 2008 and Bureau of Environmental Services staff estimates in 2009. In several cases, unit costs were determined based on comparable costs of other local projects or by using the low end of the range instead of the median. Unit costs only include the cost of construction. The following unit costs were used to estimate the restoration costs:

Off-Channel Habitat	\$3/sf
Willamette Bank Restoration	\$1,500/lf
Willamette Bank Enhancement	\$500/lf
In-Channel Habitat	\$22.50/sf
Revegetation	\$1.15/sf
Berm Removal	\$1.85/ft <sup>3</sup>
Removal of Structures	\$12/sf
Stream Daylighting	\$1,500/lf
Tributary Enhancement	\$11/sf
Wetland Enhancement	\$0.20/sf
Stormwater Swale	\$50/sf
Floodplain Restoration	\$3/sf

The total restoration cost estimate includes the restoration cost estimates, 100 percent management fee multiplier, and a 75 percent contingency.

The management fee multiplier represents the elements of project design that require funding in addition to construction costs. These elements include: project management; alternatives analysis report; engineering design; existing conditions, wetlands, and ordinary high water (OHW) boundary surveys; wetland delineation, OHW determination field work and reports; hydraulic and hydrologic report and modeling; archaeological survey and reporting; geotechnical site analysis and report; hydrology data collection (groundwater, stream flow data, etc.); sediment and water quality sampling and reporting (including Phase 1 report); permitting; construction outreach; and post construction such as as-built survey, long-term monitoring, and long-term maintenance.

A 75 percent contingency cost was added to the restoration cost due to the low level of certainty of what the work will actually entail. The City's Capital Improvement Project implementation procedures (August 2006) provides a rating index for estimating "confidence levels" and associated contingency percentages for project design. When the project scope is a conceptual "vision" and project costs are an "educated guesstimate," total project contingencies range up to or exceed 50 percent.

- 3 The total acquisition and restoration range includes the low estimate of the acquisition costs plus the total restoration cost estimate and the high estimate of the acquisition cost range plus the total restoration cost estimate.