

Smith & Bybee Lakes Wildlife Area
Proposed Construction Phasing

Phase One

<i>Item</i>	<i>Cost Estimate</i>
Build new parking area	\$20,000-56,000
Entry Drive	\$16,800
Gates	\$ 6,000
Construct cove launch	\$ 5,000
Rubber mat	\$ 2,000
Build steps	\$ 1,280
Retaining walls	\$15,000
Subtotal	\$66,080-102,080
10% Contingency	\$ 6,500-10,000
Design	\$20,000
Permits	\$ 5,000
Total Phase One	\$97,580-137,080

Phase Two

<i>Item</i>	<i>Cost Estimate</i>
Build gateway entry	\$10,000
Entry Berms & landscape	\$65,000
Kiosk	\$ 5,000
Signage	\$ 2,000
Romtec Toilet	\$30,000
Paving Demolition	\$ 3,600
Subtotal	\$115,600
15% Contingency + infl.	\$ 15,000
Design	\$ 5,000
Permits	\$ 5,000
Total Phase Two	\$140,600

Phase Three

<i>Item</i>	<i>Cost Estimate</i>
Trailhead landscape	\$75,000
Fence	\$30,000
Paving overlay	\$10,000
Subtotal	\$115,000
20% Contingency + infl.	\$ 20,000
Design	\$ 5,000
Permits	\$ 5,000
Total Phase Two	\$145,000

Total Project **\$383,180-422,680**

I've added a 5% inflation factor for phase 2 and 10% for phase 3. This is likely excessive, but can be part of the contingency otherwise. Question: does Metro normally charge "overhead" on construction projects. In the Forest Service, each office (Washington, Portland, Gresham, Estacada) would tack on overhead costs on these sorts of projects. This ended up adding as much as 40% to the total cost! That is why I ask. It's the sort of thing that sneaks up on you

Smith Bybee Lakes Cost Estimate Assumptions

Entry Drive: new paved road over flat terrain, sand subsurface.

Landscape Restoration with native trees and shrubs massed within rough grass/wildflower matrix, minimal irrigation and some soil amendment.

Berms or Retaining Walls: Dry stone or recycled concrete. 2-3' high.

Timber Steps: PT 6x6 risers with packed gravel treads.

Double Romtec Toilet SST Aspen model. Includes delivery and installation.

Grading Launch Cove: carves out a curved shape out of straight 2/1 sand fill bank. Creates a 1000 ft² level beach. Places 20-30 boulders and log boom.

Gates: Timber clad, steel frame gate used in Columbia Gorge.

Rubber matting: same system as Simax Beach on Deschutes National Forest.

Directional signage: simple roadside signage directing users to and from trailhead.

Rail Fence: similar to Columbia Gorge painted guardrail, but much lighter construction (e.g. double 2x8 rails over 6x6 posts).

Kiosk: 10x10ft with roof over 2-3 panel information boards.

Gateway entry: allowance for sign, various items.

Landscaped berms

Entry area berms and landscape.

Includes soil, grading, and plants.

Permits: building, stormwater discharge, environmental.

Metro overhead: Does Metro charge overhead on CIP projects?

10% Contingency for items overlooked or underpriced.

10% Design: assumes design development, constructions package, bidding, and inspection.

Additional Costs

Item	Unit Cost	Quantity	Total Cost
Permits			???
Metro Overhead			???
10% Contingency			\$ 30,000
10% Design			\$ 30,000
Pavement demo	.20/ft2	18,000ft2	\$ 3,600
Pavement overlay	.50/ft2	20,000ft2	\$ 10,000
Final Estimate			\$358,680-396,680

Cost Estimate for Smith and Bybee Lakes Trailhead

Costs Common to Each Alternative

Item	Unit Cost	Quantity	Total Cost
Entry drive	\$2/SF	8400SF	\$ 16,800
Landscape Restoration	\$.75/SF	100,000SF	\$ 75,000 ↓ Kral, volunteers
Retaining Walls	\$25/SF	600SF	\$ 15,000
Timber Steps	\$80/EA	16	\$ 1,280
Double Romtec Toilet	\$\$30,000/EA	1	\$ 30,000
Grading Launch Cove	All	1	\$ 5,000
Gates	\$3000/EA	2	\$ 6,000
Rubber matting	All	500SF	\$ 2,000
Directional signage	All		\$ 2,000
Subtotal			\$153,080
Alternative 1			
Paved Area	\$2/SF	24,000SF	\$48,000
Alternative 2			
Paved Area	\$2/SF	10,000	\$20,000
Alternative 3		A1+4	36K
Paved Area	\$2/SF	28,000SF	\$56,000
Demolition	\$.20/SF	10,000	\$ 2,000
Subtotal Range			\$173,080-211,080
Options			
Rail Fence	\$20/LF	1500LF	\$30,000 8,000 - 24K
Kiosk	\$50/SF	100SF	\$5000
Gateway Entry	All		\$10,000
Landscape berms	All		\$-65,000 28,000 - 45K
Subtotal Range			\$285,080-323,080

**Smith and Bybee Lakes
\$300,000 Project Funding**

Years		2000	2001	2002	2003	2004	2005	Total Operating Impact
Spend down all in one year								
Principal		\$300,000						
Proj. Rev minus Exp.		\$ 23,999	\$ 18,205	\$ 11,782	\$ 4,683	\$ (3,147)	\$ -	
Net Principal		\$276,001	\$ (18,205)	\$ (11,782)	\$ (4,683)	\$ 3,147	\$ -	
Interest	0.055	\$ 15,180	15,499	15,852	16,242	16,673	16,500	\$ 95,946

Spend \$100,000 a year

Principal		\$ 100,000	\$ 100,000	\$ 100,000				
Proj. Rev minus Exp.		\$ 23,999	\$ 18,205	\$ 11,782	\$ 4,683	\$ (3,147)	\$ -	
Net Principal		\$ 76,001	\$ 81,795	\$ 88,218	\$ (4,683)	\$ 3,147	\$ -	
Interest	0.055	4,180	8,679	12,859	13,273	13,446	13,446	\$ 65,883

Spend \$50,000 a year

Principal		\$ 50,000	\$ 50,000	\$ 50,000	\$50,000	\$50,000	\$50,000	
Proj. Rev minus Exp.		\$ 23,999	\$ 18,205	\$ 11,782	\$ 4,683	\$ (3,147)	\$ -	
Net Principal		\$ 26,001	\$ 31,795	\$ 38,218	\$45,317	\$53,147	\$50,000	
Interest	0.055	\$ 1,430	\$ 3,179	\$ 5,281	\$ 7,773	\$10,696	\$13,446	\$ 41,805

This analysis assumes that the principal amount minus expected surplus draws down fund balance.

This analysis assumes that the interest rate remains stable and 5.5%

SMITH & BYBEE LAKES TRUST FUND (761)

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	Audited	Audited	Audited	Audited	Audited	Audited	Audited	Audited	Est. Actuals	Projections				
	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98		1999-00	2000-01	2001-02	2002-03	2003-04
RESOURCES														
BEGINNING FUND BALANCE	\$0	\$1,975,589	\$1,987,040	\$1,632,599	\$3,274,654	\$3,296,794	\$3,427,259	\$3,526,454	\$3,569,551	\$3,584,111	\$3,608,110	\$3,626,315	\$3,638,098	\$3,642,781
REVENUES														
Grants	\$0				\$35,523	\$10,477	\$0	\$0	\$10,000	\$0	\$0	\$0	\$0	\$0
Enterprise Revenues	0	0	0	0	0	0	4,931	151	350	361	372	383	394	406
Intergovernmental Revenue	1,967,348	0	0	1,750,619	0	0	0	0	0	0	0	0	0	0
Donations and Bequests	0	0	0	20,000	0	0	0	0	0	0	0	0	0	0
Interest	11,990	113,204	76,800	94,204	166,719	201,387	202,758	205,091	196,325	197,126	198,446	199,447	200,095	200,353
Transfers In	15,049	4,526	15,045	11,789	11,568	10,326	1,445	4,897	10,000	10,000	10,000	10,000	10,000	10,000
Other		18,954	83	1,478		5,237	2,671	299	0	0	0	0	0	0
TOTAL CURRENT REVENUES	\$1,994,387	\$136,684	\$91,928	\$1,878,090	\$213,810	\$227,427	\$211,805	\$210,438	\$216,675	\$207,487	\$208,818	\$209,830	\$210,489	\$210,759
TOTAL RESOURCES	\$1,994,387	\$2,112,273	\$2,078,968	\$3,510,689	\$3,488,464	\$3,524,221	\$3,639,064	\$3,736,892	\$3,786,226	\$3,791,598	\$3,816,928	\$3,836,145	\$3,848,587	\$3,853,540
EXPENDITURES														
Full-Time Equivalents (FTE)	1.05	1.05	1.05	1.05	1.05	1.05	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Personal Services	\$15,743	\$53,345	\$56,665	\$66,487	\$81,230	\$56,746	\$74,436	\$79,470	\$91,454	\$96,027	\$100,828	\$105,869	\$111,162	\$116,720
Materials and Services	1,460	66,888	71,415	153,871	74,788	29,421	24,297	54,602	54,000	50,000	51,500	53,045	54,636	56,275
Capital Outlay	1,595	0	313,289	15,508	35,652	0	2,700	1,344	20,000	0	0	0	0	0
Transfers Out		5,000	5,000	169		10,795	11,177	31,925	36,661	37,461	38,285	39,134	40,008	40,911
TOTAL EXPENDITURES	\$18,798	\$125,233	\$446,369	\$236,035	\$191,670	\$96,962	\$112,610	\$167,341	\$202,115	\$183,488	\$190,613	\$198,048	\$205,806	\$213,906
Revenues less Expenditures	1,975,589	11,451	(354,441)	1,642,055	22,140	130,465	99,195	43,097	14,560	23,999	18,205	11,782	4,683	(3,147)
ENDING FUND BALANCE	\$1,975,589	\$1,987,040	\$1,632,599	\$3,274,654	\$3,296,794	\$3,427,259	\$3,526,454	\$3,569,551	\$3,584,111	\$3,608,110	\$3,626,315	\$3,638,098	\$3,642,781	\$3,639,634

ATTACHMENT A

SCOPE OF WORK

TASK 1 – PRELIMINARY EVALUATION OF FLOW CONTROL METHODS

1.1. Coordination with Metro and Team Members

The Contractor shall coordinate the Task 1 work with Metro and design team members.

1.2. Evaluate Methods for Reducing North Slough Velocity

The Contractor shall evaluate potential methods for reducing the flow velocity in the North Slough, based on the assumption that the existing dam on the North Slough would be removed or modified. The methods evaluated shall include the following:

- a. Wing walls.
- b. Weirs or similar barriers.
- c. Channel widened or deepened by dredging.
- d. Replace the existing dam with a gated structure capable of controlling flow rates, *AND CONTROL FLOW RATES BY SEASONAL GATE MANAGEMENT*
- e. Construct an alternate entrance (breach) into Smith and Bybee Lakes from the Columbia Slough.
- f. Construct a new dam structure near the mouth of the North Slough, and create breaches into the lake through the northern shoreline of the North Slough.
- g. *Wetland benches*

The Contractor shall assess the advantages and disadvantages for each of the potential methods listed above.

1.3. Conceptual Cost Estimates

Based on the results of the previous tasks, the Contractor (with Metro participation) shall select the two most viable methods. The Contractor shall then provide conceptual cost estimates for these two methods.

1.4. Permitting Issues

The Contractor shall identify the likely permits required for the two most viable flow control methods.

1.5. Technical Report

The Contractor shall provide Metro with a brief report which summarizes the evaluation of methods, conceptual cost estimates, and permitting issues discussed above. Three copies of the report shall be provided.

1.6. Meetings

The Contractor shall attend a meeting with Metro to present the results of the Task 1 evaluation to the Smith and Bybee Lakes Committee.

TASK 2 – FLOW CONTROL MODELING

2.1. Coordination with Metro and Team Members

The Contractor shall coordinate the Task 2 work with Metro and design team members.

2.2. Slough Hydraulics Model

The Contractor shall model the performance of one conceptual velocity control method selected by Metro. The model shall be based on the existing two-dimensional model developed by Portland State University for the Columbia and North Sloughs and Smith and Bybee Lakes.

2.3. Technical Report

The Contractor shall provide Metro with a brief report which summarizes the results of the computer modeling. Three copies of the report shall be provided.

2.4. Meetings

The Contractor shall attend a meeting with Metro to present the results of the computer model to the Smith and Bybee Lakes Committee.

ATTACHMENT B

Projected Hours for Tasks 1 and 2

TABLE 1

Task 1 - Preliminary Evaluation of Velocity Control Methods

Work Items	Cornforth Consultants, Inc.						Ogden Beeman & Associates			Fishman Environ.
	Prin.	Assoc. Engr.	Engr.	Tech.	Draft.	Secre.	Prin.	Proj. Mgr.	Engr. I	Senior Ecol.
1.1. Project Coordination		6		2		4				
1.2. Eval. Methods to Reduce Velocity	2	16		4				26	34	11
1.3. Conceptual Cost Estimates		8	24					6	2	
1.4. Permitting Issues		4				1				4
1.5. Technical Report	2	12	22	4	16	8		6	2	1
1.6. Meeting		6		4	6	2		6	8	3
Total Hours	4	52	46	14	22	15		44	46	19
1999 Hourly Rates	\$130	\$115	\$70	\$55	\$60	\$45	\$125	\$90	\$51	\$108
Labor Costs	\$520	\$5,980	\$3,220	\$770	\$1,320	\$675		\$3,960	\$2,346	\$2,052
Reimbursables						\$3,400			\$530	\$200
Markup on Subconsultants (10%)						—			\$684	\$225
SUBTOTAL						\$15,885			\$7,520	\$2,477

Task Total = \$25,882

TABLE 2
Task 2 - Velocity Control Modeling

Work Items	Cornforth Consultants, Inc.						Ogden Beeman & Associates			Fishman Environ.
	Prin.	Assoc. Engr.	Engr.	Tech.	Draft.	Secre.	Prin.	Proj. Mgr.	Engr. I	Senior Ecol.
2.1. Project Coordination		6		2		4				
2.2. Slough Hydraulics Modeling	1	6						8	30	
2.3. Technical Report	1	4				2	2	8	16	
2.4. Meeting		6		3		1		8	10	3
Total Hours	2	22		5		7	2	24	56	3
1999 Hourly Rates	\$130	\$115	\$70	\$55	\$60	\$45	\$125	\$90	\$51	\$108
Labor Costs	\$260	\$2,530		\$275		\$315	\$250	\$2,160	\$2,856	\$324
Reimbursables						\$270			\$2,870	\$50
Markup on Subconsultants (10%)						—			\$814	\$37
SUBTOTAL						\$3,650			\$8,950	\$411

Task Total = \$13,011



METRO

Date: August 12, 1999

To: Smith and Bybee Lakes Management Committee Members

From: Emily Roth *Eme*

RE: Facilities Plan and N. Marine Dr. Widening Project

Forget the paperwork reduction act!!!

Enclosed are:

1. DRAFT Facility Plan
2. 50% Drawings for N. Marine Dr. widening project
3. Memo from Nancy Hendrickson concerning stormwater and a recommendation to the committee.
4. DRAFT letter to Stacy Bluhm from the Management Committee concerning N. Marine Dr. Project.

Please review all the material before the next management committee meeting, which is Tuesday, August 24 starting at 5:30 p.m. at Metro in room 270.

We had originally planned to spend the entire meeting on the Facility Plan, but Metro has asked the Management Committee make a formal recommendation to them on the N. Marine Dr. stormwater treatment design. As stated in Nancy's memo, the committee will discuss her recommendation first and then start discussion of the facility plan.

I will be out of town until Monday, August 23. However, if you have comment on the stormwater recommendation, facility plan and/or the draft letter to Ms. Blumh, please send them to me electronically at: rothe@metro.dst.or.us or through the mail. I will put comments together in time for the meeting on Tuesday. There should also be plenty of time for discussion at the meeting. If you have questions about the stormwater recommendation, please call Nancy at 823-6001. Dean Apostol can answer questions on the facility plan. He can be reached at 661-6152 or by email at wordland@mail.aracnet.com.

The Agenda and last meeting's notes will be sent under separate cover.

See you on Tuesday, August 24 at 5:30pm.