

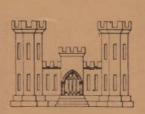
DESIGN MEMORANDUM NO. 7B, APPENDIX 1, COST ESTIMATES

## MASTER PLAN FOR DEVELOPMENT AND MANAGEMENT OF

## LOWER MONUMENTAL RESERVOIR

SNAKE RIVER, WASHINGTON

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U.S. ARMY ENGINEER DISTRICT, WALLA WALLA

54

CORPS OF ENGINEERS

1 2 AUG 1966



ADDRESS REPLY TO THE DISTRICT ENGINEER NOT TO INDIVIDUALS

#### DEPARTMENT OF THE ARMY WALLA WALLA DISTRICT, CORPS OF ENGINEERS

BLDG. 602, CITY-COUNTY AIRPORT WALLA WALLA, WASHINGTON 99362

NPWEN-PL

12 August 1966

SUBJECT: Design Memorandum No. 7B, Master Plan for Development and Management of Lower Monumental Reservoir, Appendix 1, Cost

Estimates

TO:

Division Engineer

North Pacific Division

- 1. Eight copies of Appendix 1, Cost Estimates, to Lower Monumental Reservoir Master Plan are submitted for concurrent review and approval with the main report, which was transmitted by letter to NPD, dated 6 May 1966, same subject.
- 2. Comparison with the current PB-3 is outlined in paragraph 1.02, and the schedule of initial development by fiscal years is given on page 5. Budget limitations followed in preparation of the current PB-2A will not permit initial development of facilities as scheduled herein. It is recommended that the Seattle District PB-2A be modified to include funds in the feature 14 Cost Account No. to allow fiscal year 1968 construction at all sites. The preimpoundment underwater work is vital in the development schedule, especially the sediment protection barrier at the primary area, Lyons Ferry.

1 Incl (8 cys)

FRANK D. MCELWEE Colonel, Corps of Engineers

District Engineer

appand.

#### LOWER MONUMENTAL DESIGN MEMORANDUM NO. 75

#### APPENDIX 1

#### COST ESTIMATES

#### 1.01. SCOPE.

This appendix to Lower Monumental master plan, Design Memorandum No. 7B, sets forth the estimates of cost for development of the public recreation facilities on the reservoir. It includes costs for both initial and future development as planned by the Corps of Engineers, and as might be accomplished by others. Page 5 illustrates the desirable development schedule of initial Corps' funds. Much of the proposed work must be accomplished prior to reservoir impoundment in November 1968 or a substantial increase in development costs will result. Development plans are shown in the main volume of the master plan, Plates 3 through 7. Price level is July 1966.

#### 1.02. COMPARISON WITH PREVIOUS COST ESTIMATES.

The latest approved project cost estimate (PB-3), effective 1 July 1966, cited the following:

Feature 14, Recreation Facilities	\$	850,000
Features 30 and 31 (applicable to recreation)		128,000
Total Federal Cost of Recreation Facilities	\$	978,000
Feature 08, Access Roads and Railroads (includes line item of Recreation Shoreline		
Access Roads)		64,900
Total Approved PD-3, Recreation Funds	\$1	,042,900

The total <u>Initial Corps' Development</u> shown in this estimate is as follows:

 Features 14 and 08, Recreation Costs
 \$ 895,000

 Features 30 and 31
 179,000

Total Initial Corps' Development

\$1,074,000

1/ Includes \$24,000 in distributive costs.

The amounts cited in this master plan for Features 30 and 31, E&D and S&A, are higher than those previously used in preparing the PB-3. The next PB-3 should be submitted using this cost estimate as the guiding document.

#### 1.03. INITIAL COST ODJECTIVE.

The initial Corps' costs presented herein are those involved in providing the development considered necessary and desirable to satisfy initial and immediate future (first three years) project access and use requirements. (See discussion of each site, Section 7 of main report).

#### 1.04. STATE AND LOCAL PARTICIPATION.

The extent of state and local participation has not been clearly determined to date. As discussed in the main report, paragraph 5.03, COORDINATION WITH RECREATION AGENCIES, the only possibility for participation in the near future will be with the State of Washington in the operation, maintenance and future development of Lyons Ferry Park. The recently enacted Federal Water Project Recreation Act sets forth the attitude of Congress regarding state and local responsibility. In implementing and applying this policy to Lower Monumental project, it is assumed that the Corps will accomplish the initial development with future expansion and development involving substantial participation

by state or local recreation agencies. (See Messageform dated 5 November 1965, NPDEN-PL TWAQQ, to NPW, concerning this policy as applied to Lower Monumental).

#### 1.05. OPERATION AND MAINTENANCE COSTS.

Reservoir management and Corps of Engineers' recreational maintenance will be performed as discussed in Section 8 of the master plan. It is estimated that during the early years of project operation, the reservoir management costs will be about \$50,000 annually. This amount includes about \$15,000 for equipment, \$25,000 for recreation management and operation, and \$10,000 for other reservoir management functions, such as mosquito control, shoreline maintenance, erosion control, debris cleanup, and similar activities.

#### 1.06. COMPLIANCE WITH P.L. 89-72 (Federal Water Project Recreation Act)

The Department of the Army letter of Implementation dated 5 August 1965, paragraph 4b, states as follows, "In general, each primary area proposed for development during project construction should be developed initially to a level of at least 2/3 of its ultimate potential." This cost estimate is in compliance with the above policy. The initial development program includes only one primary area, Lyons Ferry. With respect to the other future work where cost-sharing is not indicated (see the Development Cost Summary, P.4), the work is planned for completion prior to 1980; however, if the development is not needed by that date, the plans will be modified and the cost estimate restudied with a view to require local participation.

#### 1.07 RECOMMENDATIONS.

As a part of the Master Plan for Development and Management of Lower Monumental Reservoir, it is recommended that this recreation program and cost estimate be approved.

# MASTER PLAN, DESIGN MEMORANDUM NO. 7B LOWER MONUMENTAL RESERVOIR

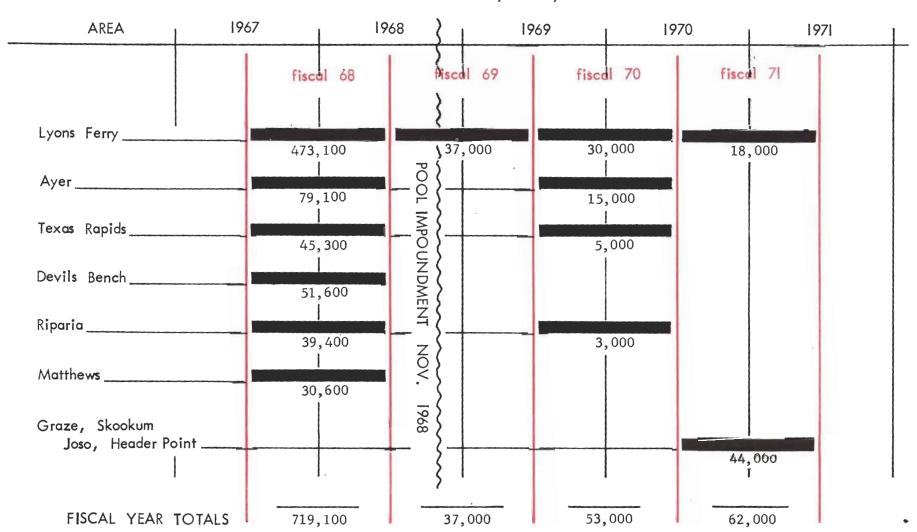
#### APPENDIX 1, COST ESTIMATES

#### DEVELOPMENT COST SUMMARY

Area		Initial Do	evelopment Non-Corps	<u>Future l</u> <u>Corps</u>	Non-Corps
Lyons Ferry	\$	558,100	\$66,700	\$102,200	\$126,400
Ayer		94,100	-	107,300	118,800
Texas Rapids		50,300	-	50,500	62,000
Devils Bench		51,600	-	48,300	-
Riparia		42,400	-	2,300	2,500
Matthews		30,600	-	13,000	•
Turner Bay		-	-	43,300	75,500
Graze, Skookum, Joso Header Point		44,000	-	15,400	-
Tucannon		-	-	20,600	20,600
Cost of Facilities	\$	871,000	\$66,700	\$402,900	\$405,800
Called Distributive Costs	\$	871,000 24,000 <u>1</u> /	\$67,000	\$403,000	\$406,000
Total Feature 14 E&D and S&A 20%	\$	895,000	\$67,000	\$403,000	\$406,000
Features 30 and 31		179,000	13,000	81,000	81,000
Grand Total	\$1	,074,000	\$80,000	\$484,000	\$487,000

<sup>1/</sup> Amount taken from latest detailed project schedule (PB-2a) dated 1 July 1966.

Cost of facilities in dollars by fiscal year



5

TOTAL COST OF FACILITIES \_\_\_\_\$ 871,000

DETAILED COST SHEETS

## MASTER PLAN, DESIGN MEMORANDUM NO. 7B DEVELOPMENT AND MANAGEMENT OF LOWER MONUMENTAL RESERVOIR

#### APPENDIX 1, COST ESTIMATES

Prive Level July 1966

LYONS FERRY		• •	Initia	al De <b>ve</b> lor	oment	Future Development			
Item	Unit	Unit <u>Price</u>	Quantity	Corps N	Non-Corps	Quant it	y Corps	Non-Corps	
Roads, Paved	Mi.	\$30,000.00	1.5	\$ 45,000	<b>\$</b> -	0.6	\$ 9,000	\$ 9,000	
Parking Area, Paved	s.y.	3.50	9,000.0	31,500	-	4,200.0	7,350	7,350	
Camping Stalls, Paved	s.y.	3.00	2,000.0	6,000	<b>-</b> :	2,000.0	3,000	3,000	
Sediment Protected Barrier and Other Earthwork	L.S.	-	-	130,000	-	-	10,000	10,000	
Boat Launching Ramps and Railroad Tie Crib Landing Docks	Ea.	8,000.00	2.0	16,000	-	2.0	8,000	8,000	
Sea Wall	L.S.	-	-	35,000	-	-	-	-	
Comfort Stations, Flush	Ea.	20,000.00	2.0	40,000	-	1.0	10,000	10,000	
Water and Electrical Supply	L.S.	-	-	50,000		-	-	-	

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LYONS	FERRY	(Cont'	d)

		Unit	Initial	Develop	ment	Future Development			
Item	Unit	Price	Quantity	Corps	Non-Corps	Quantit	y Corps	Non-Corps	
Picnic Shelters	Ea.	\$1,500.00	7.0	\$10,500	\$ -	4.0	\$3,000	\$3,000	
Picnic Units	Ea.	100.00	20.0	2,000	-	40.0	2,000	2,000	
Camping Units	Ea.	100.00	30.0	3,000	-	30.0	1,500	1,500	
Planting Lawn Dryland Grass	Acre	1,000.00	3.8	3,800	-	2.0	1,000	1,000	
Stabilization Trees and Shrubs	Acre Ea.	500.00 10.00	13.0 503.0	6,500 5,030		11.0 337.0	2,750 1,685	2,750 1,685	
Viewpoint	L.S.	-	-	10,000	_	-	-	-	
Foot Trails	L.F.	4.00	25,200.0	52,800	48,000	-	•	•	
Log Boom	L.S.	-	-	2,000	-	-	-	-	
Shoreline Improvement	L.S.	-	-	18,000	-	-	4,000	4,000	
Signs Historic or Informa-							:		
tion Marker	Ea.	300,00	6.0	1,800		3.0	450	450	
Entrance (Large)	Ea.	1,100.00	1.0	1,100		-	•	•	
Directional	Ea.	50.00	6.0	300	-	6.0	150	150	
Preservation of Old									
Lyons Ferry	L.S.	-	-	10,000	5,000	-	-	-	

## LYONS FERRY (Cont'd)

<u>Item</u>	Unit	Unit <u>Price</u>	<u>Initial</u> Quantity	Developme Corps	ent Non-Corps		re Develop ty Corps	ment Non-Corps
Interpretive Work at Indian Cemetary and		\$		\$	\$		\$	\$
Marmes Rock Shelter	L.S.	-	-	5,000	5,000	-	-	5,000
Caretaker's Residence	L.S.	-	-	-	-	-	-	16,000
Museum and Interpretive								
Center	L.S.	-	-			-	25,000	25,000
Sub-Total				\$485,330	\$58,000		\$ 88,885	\$109,885
Contingencies 15%	•			72,800	8,700		13,335	16,483
Total Feature 14 Called				\$558,130 \$558,100			\$102,220 \$102,200	\$126,368 \$126,400

A \$2777	
AYER	

712.		II 24	Initial	Develor	ment	Future Development			
<u>Item</u>	<u>Unit</u>	Unit <u>Price</u>	Quantity	Corps	Non-Corps	Quantity	Corps	Non-Corps	
Roads, Gravel	Mi.	\$22,000.00	0.3	\$ 6,600	\$ -	0.7	\$ 7,700	\$ 7,700	
Roads, Paving	Mi.	10,000.00	-	<b>.</b>	-	1.0	5,000	5,000	
Parking Area Gravel Paving	S.Y. S.Y.	2.50 1.00		15,000	- -	15,000.0 21,000.0	18,750 10,500	18,750 10,500	
Shoreline Protection and Earthwork	L.S.	-	-	25,000	<b>.</b>	-	2,000	2,000	
Boat Underpass (Completed with Rail Relocation Work)	lroad -	-	-	-	-	-	-	-	
Boat Launching Ramp ar Railroad Tie Crib									
Landing Docks	Ea.	8,000.00	2.0	16,000	-	2.0	8,000	8,000	
Sea Wall	L.S.	-	-	15,000	-	-	-	-	
Comfort Stations Flush Pit	Ea. Ea.	20,000.00	- 2.0	- 800	-	2.0	20,000	20,000	
Water, Electrical Supply	L.S.	-		-	-	-	8,000	8,000	
Picnic Shelters	Ea.	1,500.00	1.0	1,500	-	_	~	_	

AYER (Cont'd)						_		
		Unit	<u>Initial</u>	L Develop	ment	Futur	e Develop	ment
<u>Item</u>	<u>Unit</u>	Price	Quantity	Corps	Non-Corps	Quantity	Corps	Non-Corps
Picnic Units	Ea.	\$ 100.0	0 6.0	\$ 600	<b>\$</b> -	20.0	\$ 1,000	\$ 1,000
Planting								
Lawn	Acre	1,000.0	0 -	-	-	4.0	2,000	2,000
Trees	Ea.	10.0	0 53.0	530	-	70.0	350	350
Signs								
Entrance (Small)	Ea.	650.0	0 1.0	650	-	-	-	-
Directional	Ea.	50.0	0 3.0	150	-	-	-	-
Preparation for Concession								
Development	L.S.	-	-	-	-	-	10,000	-
Concession and Relat	eđ							
Facilities	L.S.	-	-	<del>-</del>		-		20,000
Sub-Total				\$81,830	\$ <b>-</b>		\$ 93,300	\$103,300
Contingencies 1	.5%			12,275			13,995	15,495
Total Feature 1	4			\$94,105	\$ -		\$107,295	\$118,795
<b>Cal</b> led				\$94,100			\$107,300	\$118,800

TEXAS RAPIDS								
		Unit	Initial	Future	Future Development			
Item	Unit		Quantity	Corps N	on-Corps	Quantity	Corps	Non-Corps
Roads								
Gravel	Mi.	\$22,000.00	0.2	\$4,400	\$ <b>-</b>	0.5	\$ 5,500	\$ 5,500
Paving	Mi.	10,000.00	-	-	-	0.7	3,500	
Parking Area								
Gravel	S.Y.	2.50	3,300.0	8,250	-	4,200.0	5,250	5,250
Paving	S.Y.	1.00	-	-	-	7,500.0	3,750	3,750
Boat Launching Ramps & RR Tie Crib								
Landing Docks	Ea.	8,000.00	1.0	8,000	-	3.0	12,000	12,000
Sea Wall	L.S.	-	-	5,500	-	-	-	-
Comfort Chation								
Comfort Station Vault	Ea.	7,000.00	1.0	7,000	_	_		_
Flush	Ea.	20,000.00		7,000	_	1.0	10,000	10,000
rusn	Da.	20,000.00				1.0	10,000	10,000
Water, Electrical								
Supply	L.S.	-	-	-	-	-	-	10,000
Picnic Shelters	Ea.	1,500.00	2.0	3,000	_	2.0	1,500	1,500
71. 1. A								
Picnic Area Stabilization	L.S.	-	-	1,000	-	_	_	-
	_,,,			-,				
Picnic Units	Ea.	100.00	4.0	400	-	20.0	1,000	1,000
Planting								
Lawn	Acre	1,000.00	-	-	-	2.0	1,000	1,000
Trees	Ea.	10.00		450	-	80.0	400	

## TEXAS RAPIDS (Cont'd)

		Unit	Initi	al Deve	lopment	Futur	e Developme	ent
<u>Item</u>	Unit	Price	Quantity	Corps	Non-Corps	Quantity	Corps 1	Non-Corps
Shoreline Improvement	L.S.	\$ •	-	\$ 5,00	0 \$ -	-	\$ -	\$ -
Signs Entrance (Small) Directional	Ea. Ea.	650.00 50.00	1.0 1.0	6.5		2.0	<u>-</u> 50	<u>-</u> 50
Sub-Total Contingencies 15	%			\$43,700 6,55	•		\$43,950 6,593	\$53,950 8,093
Total Feature 14 Called				\$50,25 \$50,30	•		\$50,543 \$50,500	\$62,043 \$62,000

### DEVILS BENCH

			<u>Initial</u>	Develop	ment	Future Development			
Item	<u>Unit</u>	Unit <u>Pric</u> e	Quantity	Corps	Non-Corps	Quantity	Corps	Non-Corps	
Roads, Paved	Mi.	\$30,000.00	0.2	\$ 6,000	\$ -	-	\$ -	\$ -	
Parking Area, Paved	S.Y.	3.50	3,500.0	12,250	-	3,000.0	10,500	-	
Boat Launching Ramps & RR Tie Crib Land- ing Docks	Ea.	8,000.00	2.0	16,000	-	2.0	16,000	-	
Sea Wall	L.S.	-	-	10,000	-	-	-	-	
Water Supply	L.S.	-	-	-	-	-	5,000	-	
Picnic Units	Ea.	100.00	-	-	-	15.0	1,500	-	
Planting, Lawn, Trees and Shrubs	L.S.	-	-	-	-	-	9,000	-	
Signs Entrance (Small)	Ea.	650.00	1.0	650	-	-			
Sub-Total Contingencies 15	%			\$44,900 6,735	\$ - 		\$42,000 6,300	\$ -	
Total Feature 14 Called				\$51,635 \$51,600	\$ -		\$48,300 \$48,300	\$ -	

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<u>Item</u>	<u>Unit</u>	Unit <u>Price</u>	Quantity	Corps	Non-Corps	Quantity	Corps No	n-Corps	
Roads Gravel Paving	Mi. Mi.	\$22,000.00 10,000.00	0.1	\$ 2,200	\$ - -	- 0.1	\$ <b>-</b>	\$ 500	
Parking Area Gravel Paving	S.Y.	2.50 1.00	2,000.0	5,000 -	-	2,000.0	- 1,000	1,000	
Earthwork	L.S.	-	-	10,000	-	-	-	-	
Boat Launching Ramps and RR Tie Crib Landing Docks	Ea.	8,000.00	1.0	8,000	-	-	-	-	
Sea Wall	L.S.	-	-	5,000	-	-	-	-	
Comfort Station, Pit	Ea.	400.00	2.0	800	-	-	-	-	
Picnic Shelters	Ea.	1,500.00	1.0	1,500	-	-	-	-	
Picnic Units	Ea.	100.00	2.0	200	-	10.0	500	500	
Tree Planting	Ea.	10.00	50.0	500	-	15.0	-	150	
Shoreline Improvement	L.S.	-	-	3,000	-	-	-	-	
Entrance Signs, Small	Ea.	650.00	1.0	650		-	_		
Sub-Total Contingencies 15	%			\$36,850 5,528			\$2,000 300	\$2,150 323	
Total Feature 14 Called				\$42,378 \$42,400			\$2,300 \$2,300	\$2,473 \$2,500	

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And Andread of Particular and Andread	 Unit				pment	Future Development		
Item	Unit	Price	Quantity	Corps	Non-Corps	Quantity	Corps	Non-Corps
Roads Gravel (Improvement of Existing Road) Paving		\$ - 10,000.00	-	\$10,000 -	\$ - -	- C.9	\$ <b>-</b> 9,000	\$ -
Parking Area Gravel Paving	S.Y. S.Y.	2.50 1.00	2,300.0	5,750	- -	2,300.0	2,300	-
Boat Launching Ramps and RR Tie Crib Landing Docks	Ea.	8,000.00	1.0	8,000	-	-	-	-
Protective Groin	L.S.	-	-	2,000	-	-	-	-
Comfort Station, Pit	Ea.	400.00	2.0	800	-	-	-	-
Directional Signs	Ea.	50.00	1.0	50		-		
Sub-Total Contingencies 15	%			\$26,600 3,990	\$ - -		\$11,300 1,695	
Total Feature 14 Called				\$30,590 \$30,600	\$ -		\$12,995 \$13,000	

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TURNER BAY			Initial	. Develo	pment	Futur	e Developm	nent
		Unit				***************************************		
<u>Item</u>	Unit	Price	Quantity	Corps	Non-Corps	Quantity	Corps N	on-Corps
Roads, Paved	Mi.	\$30,000.0	0 -	\$ -	\$ -	0.2	\$ 3,000	\$ 3,000
Parking Areas, Paved	S.Y.	3.5	0 -	-	-	2,000.0	3,500	3,500
Boat Launching Ramps and RR Tie Crib Landing Docks	Ea.	8,000.0	0 -	-	-	1.0	4,000	4,000
Sea Wall	L.S.	-	-	-	-	-	2,000	-
Water, Electric Supply	L.S.	-	-	-	-	-	5,000	5,000
Tree Planting	Ea.	10.0	0 -	-	-	30.0	150	150
Preparation for Concession Development	L.S.	_	-	_	-	-	20,000	-
Concession and Relate	.d							
Facilities	L.S.	-	-		*	-		50,000
Sub-Total Contingencies 15	5%			\$ - 	\$ -		\$37,650 5,648	\$6 <b>5,</b> 650 9,848
Total Feature 14 Called				\$ -	\$ -		\$43,298 \$43,300	

GRAZE, SKOOKUM, JOSO,	HEADER	POINT						
	<u>Initia</u>	1 Devel	opment	Future Development				
Item	Unit	Unit <u>Price</u>	Quantity	Corps	Non-Corps	Quantity	Corps	Non-Corps
Boat Landing Dock	Ea.	\$1,500.00	3.0	\$ 4,500	O \$ -	1.0	\$ 1,500	\$ -
Comfort Stations, Pit	Ea.	400.00	6.0	2,400	) -	2.0	800	-
Picnic Shelters	Ea.	1,500.00	6.0	9,000	) -	1.0	1,500	-
Picnic Units	Ea.	100.00	18.0	1,800	) -	21.0	2,100	-
Tree Planting	Ea.	10.00	60.0	600	) -	45.0	450	-
Shoreline Improvemen	t L.S.	-	-	20,000		-	7,000	
Sub-Total Contingencies 1	5%			\$38,300 5,745	•		\$13,350 2,003	\$ - -
Total Feature 1 Called	4			\$44,045 \$44,000	•		\$15,353 \$15,400	\$ -

### TUCANMON

			Unit	<u>Initial</u>	Develo	pment	Future	Developm	ent
	<u>Item</u>	Unit	Price	Quantity	Corps	Non-Corps	Quantity	Corps	Non-Corps
	Roads, Gravel	Mi.	\$22,000.00	-	\$ -	\$ -	1.0	\$11,000	\$11,000
	Parking Area, Gravel	s.y.	2.50	-	-	-	2,000.0	2,500	2,500
	Boat Launching Ramp and RR Tie Crib Landing Docks	Ea.	8,000.00	-	-	-	1.0	4,000	4,000
	Comfort Stations, Pit	Ea.	400.00	-	_	_	2.0	400	400
5	Directional Signs	Ea.	50.00	-			1.0	25	25
	Sub-Total Contingencies 15	%			\$ - -	\$ -		\$17,925 2,689	\$17,925 
	Total Feature 14 Called				\$ -	\$ -		\$20,614 \$20,600	\$20,614 \$20,600