



DESIGN MEMORANDUM NO. 7B

**MASTER PLAN FOR DEVELOPMENT AND MANAGEMENT OF
LOWER MONUMENTAL RESERVOIR**

SNAKE RIVER, WASHINGTON

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U.S. ARMY ENGINEER DISTRICT, WALLA WALLA

CORPS OF ENGINEERS

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6 MAY 1964



DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS

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

ADDRESS REPLY TO
THE DISTRICT ENGINEER
NOT TO INDIVIDUALS

NPWEN-PL

6 May 1966


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

TO: Division Engineer
North Pacific Division

1. In accordance with EM 1130-2-302, the Master Plan for Development and Management of Lower Monumental Reservoir has been prepared and is submitted for review and approval.

2. Appendix 1, Cost Estimate, will be forwarded to your office prior to 30 June 1966.

1 Incl (8 cys)
as


FRANK D. McELWEE
Colonel, Corps of Engineers
District Engineer

TC
557
.W3
L72
no. 7B
c.1

U.S. GOVERNMENT
40-68-C

C O P Y

NPDPL-RB/NPDEN-TE (6 May 66) 1st Ind
SUBJECT: Design Memorandum No. 7B, Master Plan for Development and
Management of Lower Monumental Reservoir

North Pacific Division, Portland, Oregon

2 September 1966

TO: Chief of Engineers, ATTN: ENGCW-OM

1. The Master Plan for Lower Monumental Reservoir, Design Memorandum No. 7B, and Appendix 1 thereto are forwarded with recommendation for approval subject to the following comments.

2. Design Memorandum No. 7B - Main Report.

a. Page 2-3, para. 2.04. Revise third sentence to read:
"A tolerance of up to 0.5 foot above or below this operating range may occasionally be used. If the river discharge should exceed approximately 680,000 cfs, which is 166 percent of the maximum flood of record, elevation 540 will be exceeded even with all spillway gates open." This paragraph should also be supplemented with a chart of reservoir profiles similar to that used for the John Day Project.

b. Page 3-7, para 3.06. The shoreline distance shown as 89 miles should read 73 miles, as listed as pertinent data on page 2-6.

c. Page 5-4, para 5.04. This paragraph, together with paragraph 9.02 and Exhibits B through H, indicates a conflict in land utilization between the fish and wildlife service and industrial interests. Interim use of the area in question is unacceptable to the Fish and Wildlife Service. It is understood, however, that this agency is currently considering the preparation of a special report which will outline their views of the mitigative measures required for the Lower Snake River as a whole, rather than on a project by project basis. Pending receipt of the Fish and Wildlife study, it is recommended that the proposed classification of the area in question be deferred.

d. Section 6.

(1) The inclusion of the separate land-use categories which are not utilized on the Land Use Map, Plate 2, is not required.

(2) Page 6-6, para 6.03. Add the word "print" after the word "red" in the first sentence.

(3) Page 6-7, para 6.05. Totals for the columns entitled "Initial" and "Future" under the heading of "Priority One, Public Recreation" should be revised to read 1,180 and 392 respectively.

C O P Y

NPDP-L-RB/NPDEN-TE (5 May 66) 1st Ind 2 September 1966
SUBJECT: Design Memorandum No. 7E, Master Plan for Development and
Management of Lower Monumental Reservoir

e. Section 7 - Recreation Development Plan.

(1) Page 7-1, para 7.02a. While the Lyons Ferry area represents the only opportunity for major site development, its optimum use is considerably dependent upon completion of State Highway 11B and the proposed bridge crossing. The feature design memorandum covering construction at this site should present all the aspects of access to the site, including the phasing of site development with highway and bridge completion.

(2) Page 7-5, para 7.02h. Pending observation of initial use at other developed and undeveloped shoreline areas, it is recommended that the Graze, Skookum and Joso sites be deferred to the future program.

(3) General. In view of the isolated nature of the project and the existence of other reservoir projects which are accessible to population centers within the Use Zones shown on Plate I, initial development should proceed on a gradual basis. This will permit surveillance of shoreline erosion conditions, sedimentation and public user preferences. It will be necessary that general construction funds are available to accomplish the underwater pre-impoundment work, as discussed in paragraph 3 below. All proposed recreation facility development should be fully covered in feature design memoranda.

3. Appendix 1, Cost Estimates.

a. The currently approved PB-2a for the project is based upon pool impoundment by December 1969, one year later than is shown by graphic presentation on page 5. The pool impoundment date of November 1968 has not been approved; however, the project has the capability of providing power on the line by December 1968, provided additional funding is made available by Congress. If this occurs the following minimum amounts are determined to be necessary to cover Feature 14 pre-impoundment work in Fiscal Year 1968.

- | | |
|---|-----------|
| (1) <u>Lyons Ferry</u> - sediment barrier and other earthwork, boat launching ramp and RR tie cribbing, seawall | \$101,000 |
| (2) <u>Ayer</u> - shoreline protection work, boat launching ramp, sea wall | 41,000 |
| (3) Texas Rapids - boat launching ramp and dock cribbing and sea wall | 13,500 |

C O P Y

NPDPL-RE/NPDEN-TE (6 May 66) 1st Ind 2 September 1966
SUBJECT: Design Memorandum No. 7E, Master Plan for Development and
Management of Lower Monumental Reservoir

(4) <u>Devils Dench</u> - boat launching ramp and dock cribbing, sea wall	\$ 26,000
(5) <u>Riparia</u> - earthwork, boat launching ramp and dock cribbing, sea wall	<u>23,000</u>
Total	\$284,500

Otherwise these amounts will be required in Fiscal Year 1969.

b. Dependent upon final determination as to reservoir
impoundment, the chart on page 5 should be adjusted accordingly.

FOR THE DIVISION ENGINEER:

2 Incls
1. nc ex 5 cys wd
Added
2. App. I, Cost Ests (3)

C. A. CARROLL /s/
C. A. CARROLL /t/
Colonel, Corps of Engineers
Deputy Division Engineer

C O P Y

ENGCW-OM (6 May 66) 2nd Ind
SUBJECT: Design Memorandum No. 7B, Master Plan for Development and
Management of Lower Monumental Reservoir

DA, CofEngrs, Washington, D. C. 20315, 1 November 1966

TO: Division Engineer, North Pacific Division

1. The Master Plan is approved subject to the comments of the Division Engineer in the preceding 1st Indorsement and to the following.

2. Reference Paragraph 1.02c, Outgrants. Revise as follows: "The development and use of project lands by others may be undertaken to the extent such development and use is consistent with the allocations of land in the approved master plan and in accordance with the provisions of the Engineer Regulations controlling such use.

3. Reference Appendix 1, Cost Estimates.

a. Page 8. Corps participation in providing the museum and interpretive center should be further justified at such time the need exists.

b. Page 13. Water supply and picnic units should be provided in the initial development for use in connection with visitation to the lock and dam.

c. Page 15. Based on the availability of funds the road and parking area at the Matthews site should be paved, thus being a part of the beautification program for the dam site.

FOR THE CHIEF OF ENGINEERS:

Incl
w/d

MARK S. GURNEE /s/
MARK S. GURNEE /t/
Chief, Operations Division
Civil Works

C O P Y

NPDPL-RE/NPDEN-TE (6 May 66) 3rd Ind
SUBJECT: Design Memorandum No. 72, Master Plan for Development and
Management of Lower Monumental Reservoir

North Pacific Division, Portland, Oregon

8 November 1966

TO: District Engineer, Walla Walla District

Forwarded with attention invited to the qualified approval of the
preceding Indorsements.

FOR THE DIVISION ENGINEER:

C. A. CARROLL /s/
C. A. CARROLL /t/
Colonel, Corps of Engineers
Deputy Division Engineer

6

C O P Y

LOWER MONUMENTAL LOCK AND DAM

DESIGN MEMORANDUMS

<u>No.</u>	<u>Title</u>	<u>Cover Date</u>
1	General Design Memorandum	5 Oct 1959
2	First Step Cofferdam	25 May 1960
3.1	South Shore Access Roads	30 Jun 1960
3.2	North Shore Access Road	24 May 1961
	Letter Supplement No. 1, "Rockfall Correction and Project to Windust Detour Road"	17 Feb 1964
4	South Shore Temporary Project Office and Visitor Facilities	1 Jul 1960
5	Northern Pacific Railway, Dam Site Shoofly	18 May 1960
6	Union Pacific Railroad Relocation (Hinkle-Spokane Main Line)	27 Mar 1961
	Supplement No. 1 - Design and Cost Revisions	2 Nov 1962
	Supplement No. 2 - Design and Cost Revisions	27 Jan 1965
7A	Preliminary Master Plan (Reservoir)	28 Feb 1963
7B	Master Plan (Reservoir)	
7B-C1	Recreation Facilities	
8	Concrete Aggregate Investigations	28 Apr 1961
9	Navigation Facilities	14 Mar 1961
10	Spillway	21 Feb 1961
11	South Shore Permanent Fish Facilities	30 Mar 1961
12	South Abutment Embankment	29 Jun 1961
13	Real Estate	
	Part 1 - Dam Site Construction Area, North and South Shore Access Roads and Partial Relocation of the Union Pacific and Northern Pacific Railroads	17 Oct 1960
	Part 2 - North Shore Windust Aggregate Area and South Shore Project Requirements from River Mile 49.5 to River Mile 74	19 Jan 1962
	Part 3 - Remainder of North Shore Requirements	11 Jul 1962
		Revised 15 Nov 1962
14	Union Pacific Railroad Relocation (Tekoa-Ayer and Tucannon Branches) Supplement 1 - Design and Cost Revisions on Tekoa-Ayer and Tucannon Branches and Camas Prairie Tie Line	19 May 1965

DESIGN MEMORANDUMS (Cont'd)

<u>No.</u>	<u>Title</u>	<u>Cover Date</u>
14.1	Union Pacific Railroad, Tekoa-Ayer Branch Line - Snake River Bridge, Mile 61.8	19 Feb 1962
15	Northern Pacific Railway Relocation (Deleted)	
16	North Abutment Embankment	25 Jan 1961
17	Non-Overflow Dam Lock to Spillway	13 Mar 1961
18	Camas Prairie Railroad Relocation (Deleted; see D.M. 14, Supplement 1)	
19	Powerplant	17 Nov 1961
19.1	Powerhouse Architectural Design	26 Aug 1963
19.2	Powerhouse Structural Design	26 Aug 1963
19.3	Powerhouse Mechanical Equipment	Oct 1963
19.4a	Powerhouse Lighting Design	13 Jan 1964
19.4b	Powerhouse Grounding System	20 Dec 1963
20	Second and Third Step Cofferdams	11 Jun 1962
21	Relocation of Washington State Highway 11-B and Columbia Roads Nos. 41 and 43	
22	Water Supply, Storage and Distribution	28 Jan 1964
23	100-Ton Combined Spillway and Powerhouse Intake Gantry Crane (Part of John Day Design Memorandum 15.8)	Not issued
24	Foundation Grouting	20 Mar 1964
25	Relocation of Riparia School	
26	Cost Allocation Studies	5 Jun 1962
27	Recreation Facilities (Deleted; see D.M. 7B, C1)	
28	Buildings, Grounds, and Utilities	
29	Ayer School Relocation (Deleted)	
30	Temporary North Shore Visitors' Facilities	24 Jul 1963
31	North Abutment Treatment	18 Sep 1963
32	Permanent Operator's Quarters	18 Sep 1964
33	Aircraft Landing Strip	18 Jan 1965
34	Navigation in Reservoir	21 Jan 1965
35	Navigation Lock - Modification of Gate Monoliths	1 Feb 1966
36	Reservoir Clearing	

Lower Monumental Design Memorandum No. 7B
MASTER PLAN FOR DEVELOPMENT AND MANAGEMENT
OF LOWER MONUMENTAL RESERVOIR

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- 5 Ayer
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EXHIBITS

- A Washington State Parks and Recreation Commission public hearing statement and letter to NPW, dated 15 November 1965
- B U. S. Fish and Wildlife Service letter to NPW, dated 8 March 1962
- C U. S. Fish and Wildlife Service letter to NPW, dated 27 February 1964
- D U. S. Fish and Wildlife Service letter to NPW, dated 1 November 1965
- E U. S. Fish and Wildlife Service public hearing statement, dated 16 November 1965
- F Washington State Department of Game letter to NPW, dated 8 October 1965
- G Washington State Department of Game public hearing statement and letter to NPW, dated 12 November 1965
- H Port of Walla Walla public hearing statement and letter to NPW, dated 15 November 1965

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

SECTION 1 - INTRODUCTION

1.01. PROJECT AUTHORIZATION.

Lower Monumental Lock and Dam, a multiple-purpose project on Snake River, at River Mile 41.6, was authorized for development by the River and Harbor Act of 2 March 1945, Public Law 14, 79th Congress, First Session (S. 35). Its stated purposes are slackwater navigation and irrigation, with provision for production of hydroelectric power. The project will provide slackwater navigation to Little Goose, the next authorized lock and dam, at River Mile 70.3.

1.02. PROJECT ADMINISTRATION.

Federal laws provide that Department of the Army reservoirs constructed for multipurpose use shall be operated to encourage public development and use of the collateral resources associated with the project. Administration of these resources is directed by these Federal laws and by various OCE regulations, and as implemented through an approved master plan.

a. Master Plan Preparation.

This master plan was prepared to provide orderly administration of the project resources in accordance with paragraph 9, Engineering Manual 1130-2-302.

b. Laws Governing Development and Management.

The following Federal statutes govern in administration of the land and water areas of the project.

(1) Section 1, Public Law 534, 78th Congress, Flood Control Act of 1944, and Section 1 of Public Law 14, 79th Congress, River and Harbor Act of 1945, specify coordination with state agencies in planning for flood control and watershed development.

(2) Section 4 of Public Law 534, 78th Congress, Flood Control Act of 1944, with subsequent amendments and as last amended by the Land and Water Conservation Fund Act of 1965, Public Law 88-578, provides for the Corps of Engineers to develop and maintain recreation facilities on water resource projects.

(3) Guidance for specific land use planning is given in Public Law 85-624, Fish and Wildlife Coordination Act, approved in August 1959; and Section 108 of Public Law 86-645, River and Harbor Act of 1960, approved 14 July 1960, which provides for effective management of industrial resources and allows sale of project lands to states, political subdivisions thereof, and port districts.

(4) Public Law 89-72, 1965 Federal Water Project Recreation Act, provides for non-Federal public bodies' participation in project recreation financing and administration.

c. Outgrants.

The development and use of lands by others than the Corps of Engineers may be undertaken in accordance with provisions of the approved master plan. This use is authorized by real estate outgrants administered by Operations and Real Estate Divisions, in accordance with policies, procedures, and regulations prescribed in Engineering Manuals.

1.03. PURPOSE OF MASTER PLAN.

The master plan is intended as a guide for orderly development and management of the land and water areas of the project. It recognizes the need for coordination with all Federal, state, and local agencies in developing the primary project resources, to assure that maximum sustained benefits to the public are realized. A primary purpose is to assure preservation of the scenic, biological, and recreational resources, and to present plans for the initial development of the recreational facilities. The master plan is intended to be flexible and is subject to periodic revision as dictated by changing times and conditions.

1.04. SCOPE OF STUDY.

In formulating the plan, a thorough investigation was made of all existing and potential land use requirements, the interrelationships of existing developments in the region, and the arrangement and quality of existing and relocated roads, power lines, and other utilities. Consideration was given to the development and operational experience of other projects in the Walla Walla District. Close contact has been maintained with local agencies, groups, and individuals, and a preliminary plan of development was presented at a well-attended public hearing. Coordination since the public hearing has been maintained and refinements were incorporated in the plan.

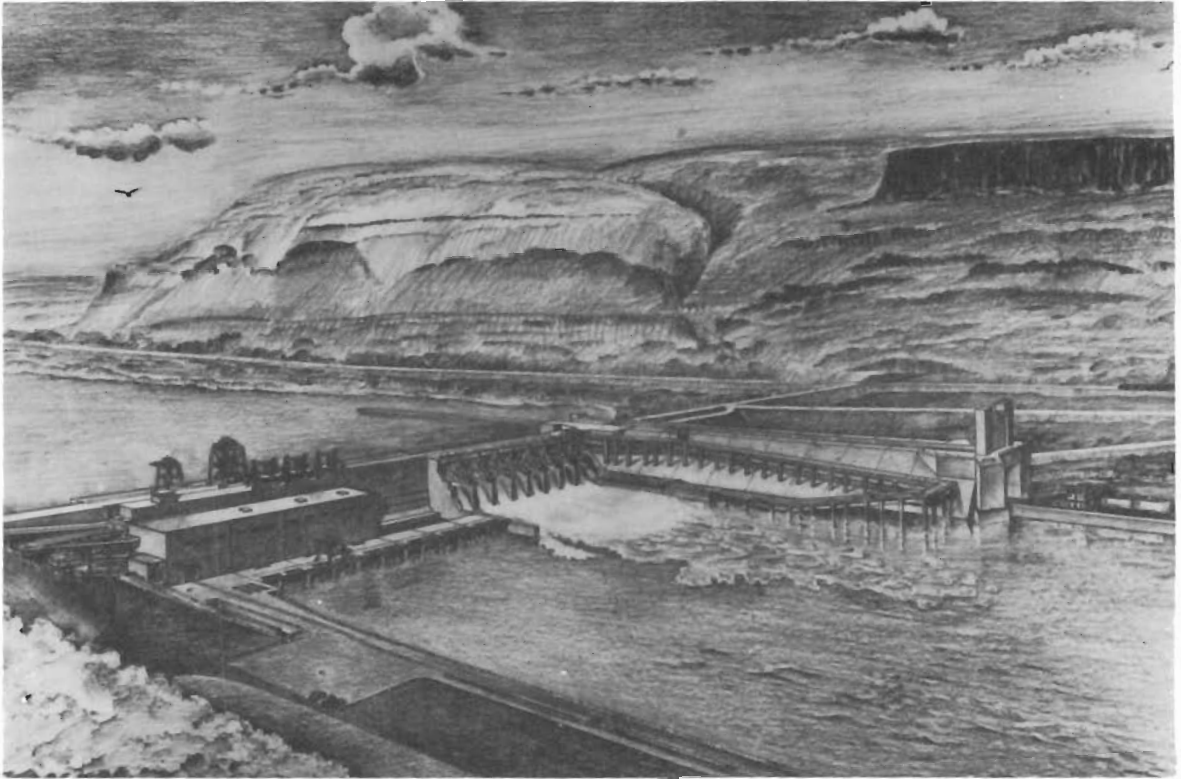
SECTION 2 - DESCRIPTION OF PROJECT

2.01. LOCATION.

Lower Monumental Lock and Dam are located on Snake River at River Mile 41.6, 31.9 miles upstream from Ice Harbor Lock and Dam. The reservoir will provide backwater to Little Goose, the next Snake River project, at River Mile 70.3. The project area is located in the four Washington state counties of Walla Walla, Columbia, Franklin, and Whitman.

2.02. PROJECT STRUCTURES (See photograph, page 2-2).

The dam is basically a concrete gravity structure with an earth and rock embankment at each end. Its total length is 3,800 feet and its effective height is 100 feet. Beginning at the left abutment, the earth and rock embankment extends to the navigation lock. North from the lock is a concrete non-overflow section about 140 feet long. Next is the eight-bay spillway, 512 feet long, which has a crest elevation of 483 feet msl and a stilling basin length of 201 feet. Flows through the spillway are controlled by tainter gates which have a design capacity of 850,000 cfs at a maximum pool elevation of 548 feet msl, and will pass 676,000 cfs at normal pool elevation, 540 feet msl. A concrete non-overflow section 30 feet long connects the spillway to the powerhouse. The powerhouse is 695 feet long and includes three completed units and three skeletonized units. North from the powerhouse is a 183-foot-long concrete non-overflow section followed by an earth and rock embankment extending to the right abutment. The



ARTISTS CONCEPT - 1964

LOWER MONUMENTAL LOCK AND DAM

Snake River, Washington

south fish ladder is between the navigation lock and the spillway, and the north fish ladder is landward of the powerhouse.

2.03. THE RESERVOIR AND ITS SHORELINE (See Plate 2).

The reservoir is long and narrow, and throughout its entire length is flanked by rugged, high, basalt bluffs. The left or south shore is closely bordered by a main line railroad. Tree growth is lacking. In the upper half of the project, three tributary streams enter the reservoir; each is a heavy silt carrier. Erosion of the shoreline will be heavy in places where the light, sandy soils meet the water's edge. In other areas, the shoreline will be of stable gravels or vertical basalt outcrop, with talus slopes below. Intermittently, throughout the reservoir, there are limited benchlands situated above normal pool, which will remain in their natural state with a cover of various grasses, bitter brush and sagebrush; a few areas have been and will remain under cultivation. Much of this land is isolated and will have access by boat only.

2.04. RESERVOIR OPERATION AND POOL FLUCTUATION.

Lower Monumental project will be operated to provide optimum conditions for navigation and generation of required power without creating unnecessary detriment to other project uses. Normal pool elevation at Lower Monumental is 540 msl with three feet of drawdown provided for power peaking purposes. Pool elevations above 540 can be expected near the dam or in the lower reach of the reservoir only when river flows exceed the maximum flood of record. During the annual

low streamflow season, usually from August through March each year, pondage capacity of the top three feet of the reservoir will be used to meet peak power load demands. Duration of power peaking cycles and extent of pool fluctuation will be dependent on forecasted inflows and assigned power loading. The pool will be approximately level for its entire length during low flows. As the flows of the river increase, a slope develops in the pool, particularly at the upper end.

TABLE 1

PHYSICAL AND OPERATIONAL DATAGeneral

Stream	Snake River
Location of lock and dam	River Mile 41.6
Drainage area	108,500 sq. mi.
Overall length of dam	3,800 feet
Effective height (headwater to tailwater)	100 feet

Project StructureSpillway Section

Length, spillway, feet	512
Number spillway bays	8
Size of gates, feet	59 by 50
Spillway capacity, cfs	850,000

Powerhouse

Powerhouse length, feet	695
Number power units initially	3
Number power units ultimately	6
Turbines, type	Kaplan, 6-blade
Revolutions per minute	90
Horsepower per unit	212,400
Generator capacity per unit, kw	135,000
Total installed capacity - initial kw	405,000
Total installed capacity - ultimate kw	810,000

Navigation Lock

Maximum lift, feet	103
Lock clear length, feet	675
Lock clear width, feet	86
Minimum depth over sills, feet	15
Filling time, minutes	15

Fish Ladder

Number fish ladders	2
Slope ratio south shore	1 on 10
Slope ratio north shore	1 on 10
Clear width, feet	16

TABLE 1 (Cont'd)

Reservoir

Normal pool, elevation, msl	540
Minimum pool, msl	537
Length normal pool, miles	28.7
Normal pool area, acres	6,590
Maximum width, miles	0.8
Minimum width, miles	0.2
Average width, miles	0.4
Length of shoreline, miles	78
Reservoir impoundment	November 1968

Project Lands

Lands acquired by purchase	10,724
Federal lands acquired by transfer	<u>286</u>
Total Lands Acquired	11,010
Inter-project transfers	
From Ice Harbor	290
From Little Goose	<u>182</u>
Sub-Total	11,482
To Little Goose	<u>- 12</u>
Sub-Total	11,470
Area in old river bed (O.H.W. to O.H.W.)	<u>3,517</u>
Sub-Total	14,987
Normal pool acreage (540 msl)	<u>-6,590</u>
Total Lower Monumental Project Lands Above Normal Pool	8,397

SECTION 3 - NATURAL RESOURCES

3.01. MAJOR RESOURCE VALUES.

In addition to the resources which are directly associated with the authorized purposes, formation of the reservoir creates other resources which need to be protected, enhanced, properly developed, and wisely utilized. Chief among these are the recreational and fish and wildlife opportunities. Complementary to the recreational resources are scenic qualities and historical and archeological values.

3.02. GEOLOGY.

The Lower Monumental pool area lies in reach of Snake River, which openly displays a rugged geologic past. The river canyon, as cut through the basalt plateau, is about 200 feet deep. Basalt is most abundant and occurs in layers from 10 feet to 200 feet thick. Each layer has a scoriaceous upper surface and, through slower cooling of the interior, they are often jointed in beautiful hexagonal columns. These lava flows came at intervals of hundreds, possibly thousands of years. Thus, soils and vegetation grew on the surface of a flow before being buried by the next flow. Basalt depressions occurred and then the entire area was covered with the fine-textured, windborne palouse dust. Glacial floods then carved the deep canyons and scoured much of the land north of the present Snake River. These floods formed the occasional narrow strips of flood plains in the canyon floor. The present Snake and Palouse River canyons thus display an interesting geologic past which is most dramatic and scenically interesting.



MONUMENTAL ROCK
LOCATED AT R. M. 45



***PALOUSE FALLS
STATE MONUMENT***

Located at R.M. 7 on Palouse River,
1-1/2 mi. from the upper limits of
Lower Monumental Reservoir.



PALOUSE RIVER CANYON

3.03. ARCHEOLOGY.

An appraisal of the archeological resources of Lower Monumental project area was made in 1948 by the Smithsonian Institute. In all, 10 archeological sites were recorded. Several of these sites have received further investigation, and, in some instances, extensive excavation has been accomplished by Washington State University, Laboratory of Anthropology. Two reports have been published to date, namely: Report No. 21, "Interim Report: Archeological Salvage in Lower Monumental Reservoir, Washington," 1962; and Report No. 32, "The Descriptive Archaeology of the Palus Burial Site, Lyons Ferry, Washington," 1965. Probably the oldest human remains yet dated in the Pacific Northwest were found in the Palouse Canyon through these excavations. The "Marmes Rockshelter" has been designated as one of the most important sites in American archeology (Report No. 21) and will be registered as a national historic landmark. A vast amount of artifactual material was gathered at the Palus burial site, including a valued trading medallion given the Indians by Captains Lewis and Clark. The investigations are not completed and many years will be required to fully evaluate the collected artifacts and data.

3.04. HISTORY.

The Lower Snake River has played a major role in the story of human endeavor in the region. It was the route of transport for early explorers, military expeditions and pioneer settlers.

a. Lewis and Clark Era.

In October 1805, the Lewis and Clark Expedition passed down the Snake River (known to them as "Lewis River") on their westward journey, and probably became the first white men to view the Lower Snake River Canyon (see map following page 3-9). They camped twice within the project area. The present Palouse River was named by them as "Drewyers River," but the river now carries the name of the Indian group they saw camped along its shores. Others who followed to help tame this land were Peter Skene Ogden, Donald McKenzie, David Thompson, Jo Meek, Robert McClellan, and Marcus and Narcissa Whitman.

b. Early Development Period.

It has been said that nothing before or since has had the historic impact on the area as the opening of the Mullan Road in 1862. A franchise for a ferry crossing of the Snake River was granted by the Territorial Government in 1859, and the first commercial operation was started 5 June 1860, first known as "Palouse Ferry," but since 1926, "Lyons Ferry" (see photograph, page 3-5). From Walla Walla to Fort Benton, Montana, streamed the military, the settlers, the miners, and the heavily-laden freight wagons. The railroad bridge for the Union Pacific Railroad's main line, and most prominent feature of the area now, was hailed as one of the structural wonders of the world when it was opened to traffic in 1914.

3.05. RECREATION.

Lower Monumental reservoir will offer important recreational values to the people of the region, centered largely around the improved



HISTORIC LYONS FERRY AREA - 1959 PHOTO showing Joso Bridge, Lyons Ferry, existing roads and, Mouth of Palouse River.

opportunities for pleasure boating. The improved road access and the availability of slackwater will stimulate an increase in this type of recreational activity. The proposed state highway crossing at Lyons Ferry will bring additional visitors from distant points. The Columbia and Snake River slackwater navigation system will stimulate through boat traffic originating from population centers both upstream and downstream of the reservoir. Land areas along the shoreline will be available for recreational use, such as sightseeing, camping, picnicking, and swimming, with access by both automobile and boat. The reservoir water will be suitable for all types of water-related sports and recreational activities.

a. Sightseeing.

The scenic beauty of the Snake River canyon is often overlooked, as it is arid, hot, and dusty and, at times, the Palouse and Snake Rivers run muddy. Yet there is a geologic beauty in the exposed basalt cliffs and talus slopes, and in the spring the cheat grass offers a momentary glow of green, quickly turning to a dusty lavender. Those who travel this area often may miss much of the geologic beauty, but new visitors will not. Nor will the canyon's rich historical background be disappointing if it is properly explained with interpretive markings and displays. Sightseeing is a major recreational resource.

b. Boating.

Improved access and the availability of slackwater will stimulate boating activity. Launching ramps will be provided at appropriate contact points along the reservoir. Public park development

providing other activities, reservoir fishing, and the through boat traffic on the navigation system will attract many boaters.

c. Swimming and Water Skiing.

These activities occur naturally with the boating activity. A planned and protected swimming area will be developed at Lyons Ferry, the major public use area. Natural beaches along the shoreline will afford opportunity for swimming and skiing without the benefit of developed facilities.

d. Picnicking.

Most of the picnicking activity will depend on the development of parks which provide drinking water, sun shelters, lawn grass, and eventually trees for welcome shade.

e. Camping.

This use of project lands will occur mainly as a result of proposed state highway crossing at Lyons Ferry, bringing cross-state travelers with trailers and camper-pickups. Some of the camping use is expected from the fishing influence and from the local weekend boating on the reservoir.

3.06. FISH AND WILDLIFE.

Lower Monumental reservoir with its 89 miles of irregular shoreline, including shallow water bays, encompasses a large area of attractive fish and wildlife habitat. The area inundated has an irregular, undulating surface and is composed of various types of rock, gravel, and soil formations which provide environment for bass, crappie and perch. Attractive steelhead fishing is anticipated

immediately below the dam and in the upper reach of the reservoir. Field observations indicate there will be sufficient environment remaining on the periphery of the reservoir for the principal upland game species, such as ringnecked pheasants and chukker partridge. The small deer herd will have browse along the shores of the lake and ample escape cover in the ravines and valleys of tributary drainages. A sufficient seed stock of beavers, muskrats, and minks will remain from river conditions to serve as a basis for population increases which are expected because of the new lake-like environment created by the reservoir. The reservoir is situated on an important flyway for ducks and geese migrating north and south. Resting, feeding, and nesting areas will be available, and seclusion from disturbances results from sparse population and vastness of the water area. Some reservoir shorelands designated for wildlife use will be available to the state fish and wildlife agency for development and management.

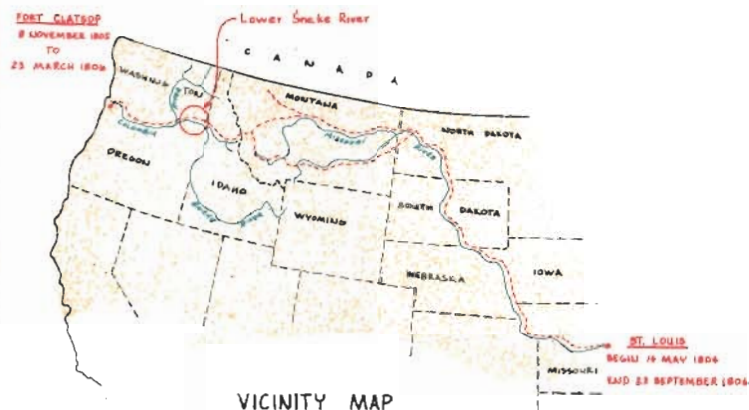
3.07. INDUSTRY.

Completion of the lock and dam and impoundment of the reservoir will add another 29 miles of slackwater to the Columbia and Snake River navigation system. The availability of barge transportation will be an important asset to the region. However, realization of the benefits from the navigation features of the project obviously requires access to the water area for transfer of commodities to and from the barges. Shoreline areas appropriately related to population

centers, and serving tributary production areas over established roads with rail service where possible, must be available for river terminal facilities. Access must also be afforded at locations where adjacent or nearby non-project lands are suited to industrial development of those types which will utilize the barge transportation. Industries requiring large volumes of water in their industrial processes must be accommodated by easements or permits for water pipelines and associated pumping plants, etc., at feasible locations.

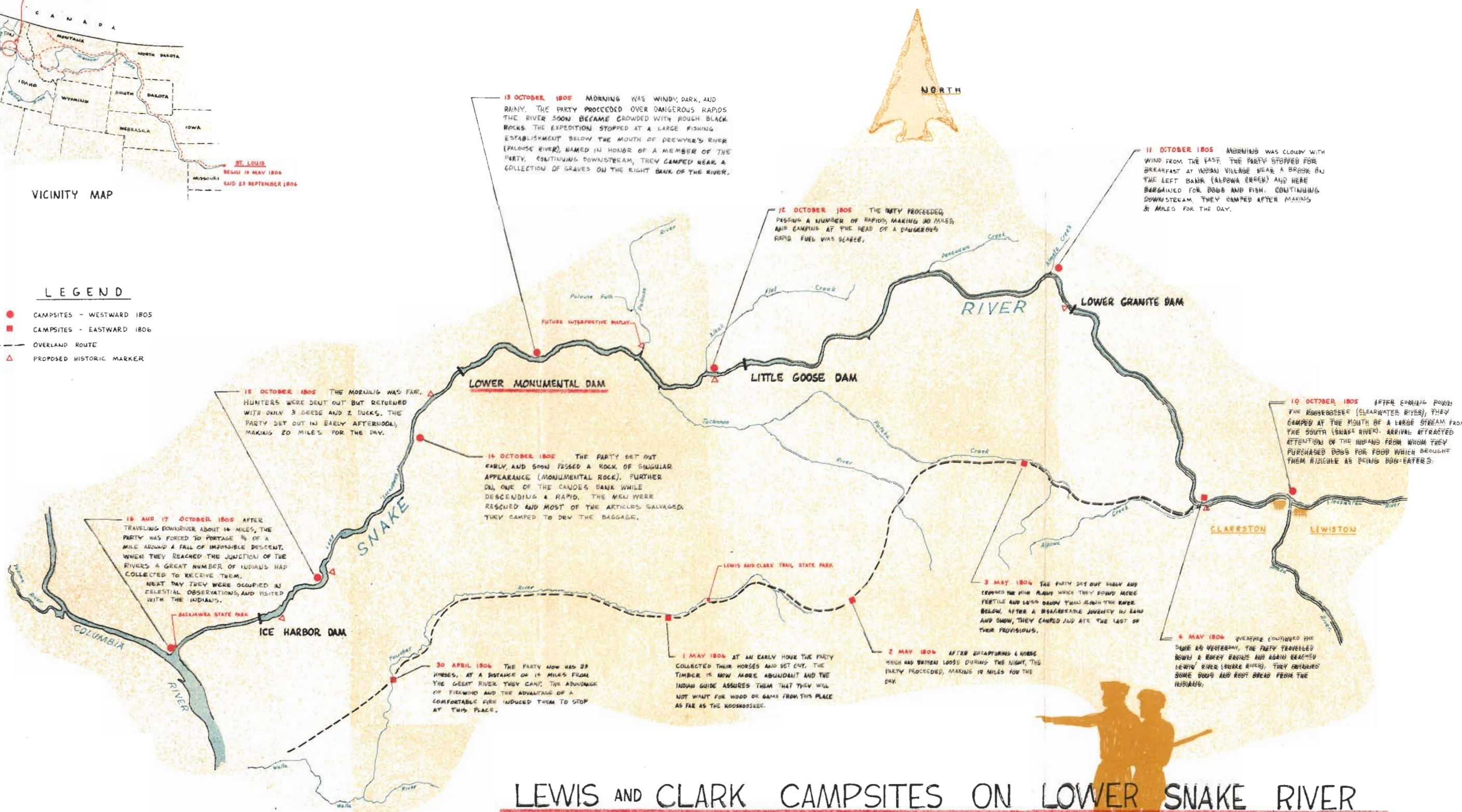
3.08. AGRICULTURE.

Some irrigable lands will remain after impoundment and other lands will become economically feasible for irrigation, due to reduced pumping lift. This, together with existing dryland wheat farming and cattle grazing, constitutes the agricultural resources of the immediate reservoir area. Only minor areas of arable land are found within the project boundary, and of these, only the areas planned for wildlife use are expected to be cultivated.



LEGEND

- CAMPSITES - WESTWARD 1805
- CAMPSITES - EASTWARD 1806
- - - OVERLAND ROUTE
- △ PROPOSED HISTORIC MARKER



LEWIS AND CLARK CAMPSITES ON LOWER SNAKE RIVER



MASTER PLAN
DEVELOPMENT AND MANAGEMENT OF LOWER MONUMENTAL RESERVOIR
SNAKE RIVER, WASHINGTON
U.S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

SECTION 4 - FACTORS INFLUENCING RESOURCE DEVELOPMENT
AND MANAGEMENT

4.01. INTRODUCTION.

Factors discussed in this section are those which relate to the manner in which Lower Monumental reservoir should be developed and managed to provide the greatest sustained benefit to the public. Collateral uses of the reservoir should not be allowed to interfere, conflict, or adversely affect the operation of the project for its authorized primary purposes. Discussion in this section concerns first the general influences on all project uses, with additional discussion by resource headings.

4.02. REGION SERVED.

Studies leading to the preparation of this report indicate that the majority of use generated by this project will come from within a 75-mile highway travel distance from the project (not considering through navigation). This is to be considered the region served.

4.03. TRANSPORTATION.

Present road access to parts of Lower Monumental reservoir is limited. There are no highway bridge crossings of the present river in the reservoir reach, only one ferry crossing, and very few good quality roads leading to the reservoir. On the north shore, Washington State Highways 260 and 26 somewhat parallel the reservoir, as can be seen from the related facilities map on Plate 1. At the dam, this highway is five miles to the north and at the head of the reservoir,

approximately 14 miles away. Three developed county roads and several private low-standard roads lead to the reservoir from the north. With present sparse populations, however, public access on this shore is considered adequate. Additional roads, probably county-sponsored, may be required in later years of project life. U. S. Highway 410 comes within about 15 miles of the reservoir on the south side. Five county roads connect with the south shore. The state plans a new highway bridge across the reservoir at Lyons Ferry to connect U. S. 410 on the south and State 260 on the north, crossing at the mouth of Palouse River. The Washington State Highway Report, dated January 1960, indicated that traffic will result from long distance trips between such points as Spokane and Walla Walla and between Clarkston and Seattle. The 1980 average daily travel projected for this crossing is 1,100 cars.

4.04. POPULATION.

There are no major communities immediately near the reservoir, but there are a total of approximately 275,000 people residing within the region served, according to 1960 census figures. Of the total population in the four counties bordering on the reservoir, 36½ percent is classified as rural.

a. Communities Within 75 Miles of the Reservoir.

<u>City</u>	<u>1960 Population</u>	
<u>WASHINGTON</u>		
Dayton	2,913)	
Waitsburg	1,010)	Within 25 Miles
Connell	906)	
La Crosse	463)	
Walla Walla	24,536	
College Place	4,031	
Pasco	14,522	
Othello	2,669	
Pomeroy	1,677	
Moses Lake	11,299	
Richland	23,548	
Kennewick	14,244	
Colfax	2,860	
Pullman	12,957	
Clarkston	6,209	
<u>OREGON</u>		
Milton-Freewater	4,110	
<u>IDAHO</u>		
Moscow	11,183	
Lewiston Orchards	9,680	
Lewiston	12,691	

b. Future Growth Trends.

Population projections as prepared by the Department of Commerce and Economic Development, and published in "Population Forecasts, State of Washington, 1965 to 1985 (Planning Series 4)," present the following figures for the counties covering most of the area defined in this report as the region served.

<u>COUNTIES</u>	<u>1900</u>	<u>POPULATION</u>		
		<u>1930</u>	<u>1960</u>	<u>1985</u> *
Adams	4,840	7,719	9,929	19,422
Asotin	3,366	8,136	12,909	17,637
Benton	-	10,952	62,070	102,012
Columbia	7,128	5,325	4,569	5,205
Franklin	486	6,137	23,342	49,946
Garfield	3,918	3,662	2,976	3,445
Walla Walla	18,680	28,441	42,195	53,405
Whitman	25,360	28,014	31,263	48,876

*High, medium, and low figures were published - the medium figures are used here.

The population distribution pattern is expected to remain much as it is today in the rural areas, with the major growth occurring in or near city centers. Fifty years after project operation (year 2018 considered a mid-point in the project life), it is estimated that the population within the region served, which includes cities in Oregon and Idaho, will exceed 500,000.

4.05. ECONOMY.

Agriculture is the basic industry of the region, with timber production near the mountains to the south and east, and Atomic Energy Commission-related activities to the west. Production of dryland wheat accounts for essentially all of the land use in the region local to the reservoir and to the north. In the irrigated tracts surrounding the Tri-Cities to the west, there is considerable diversified farming - hops, dry beans, corn, mint, grapes, etc. In the heavier rainfall areas to the south and southeast, pea production is rotated with the dryland wheat. There is also considerable truck farming, mostly with irrigation, in the Dayton, Walla Walla, and Milton-Freewater areas. This

and the peas support several large food processing and packing plants in these communities. There are four four-year colleges and one junior college in the region.

4.06. CLIMATE.

The area is characterized by relatively low precipitation, wide range in temperature, low humidity, high evaporation, and abundant sunshine. The July average temperature is 75 degrees Fahrenheit, with average maximum approximately 90 degrees Fahrenheit, and in January, usually the coldest month, the average temperature is 30 degrees Fahrenheit. The mean annual precipitation at the dam is about 11 inches, with summer months often without precipitation. Moderate winds occur quite frequently during the daytime throughout the year.

4.07. RECREATION RESOURCE DEVELOPMENT FACTORS.

a. Local Recreation Habits and Interests.

In general, the desires for activity, the recreational habits, and the available leisure time of the people within the region served do not differ drastically from other areas in the western United States. Some sub-groups, however, show significant differences worthy of note.

(1) The Tri-Cities population to the west, particularly those segments comprising the increase of the past two decades, is closely associated with the Hanford Atomic Works at Richland. This is a comparatively young population with somewhat higher than usual income and steady working hours, usually not more than 40 hours per week. Some of these people have working hours which leave free time

in mid-day for outdoor recreational pursuits. For them, the lack of accessible mountain areas, ocean beaches, or other significant outdoor recreational opportunities creates strong attractions to available water areas nearby.

(2) There is another segment of the population associated with large wheat farm operations, which has definitely higher than average income and work patterns which afford extended periods for leisure activities at certain times of the year. The most noticeable effect here is the pattern of extended wintertime travel, and vacations to foreign countries and to other climates of the United States. Among this same group, however, are many people with ample income who find boating an attractive leisure activity during certain early summer and post-harvest slack periods. This group accounts for a very substantial part of the boating activity on the reservoirs, particularly that involving the larger-sized boats.

(3) The Walla Walla community has an above average number of retired persons. Among the more active in this group are many with adequate income and ample time who enjoy outdoor recreation activities on the reservoir.

b. Related Recreation Facilities.

Existing recreational outlets, except city parks and golf courses within a 75-mile highway distance from the reservoir, are listed on Plate 1. Each area is given a letter and number designation so they can be easily located on the map and identified with the administering agency. All of these areas have influence on the use

and needs at Lower Monumental reservoir. Following are some attendance figures at other Corps of Engineers' projects and at several other recreation areas within the region.

Annual Visitors' Report for Existing
Corps of Engineers' Projects, NPW, 1961-1965

<u>Year</u>	<u>McNary</u>	<u>Ice Harbor</u>
1961	1,038,400	- ^{1/}
1962	1,479,500	69,500
1963	2,091,845	162,912
1964	1,200,180	193,408
1965	890,650	171,885

1/ First year of project operation.

NOTE: The general decrease of attendance in 1965 results largely from the use of reduced automobile load factors as applied to automatic traffic counter data. Other factors are somewhat cooler than normal weather and excessive volumes of floating debris.

Annual Attendance Figures

<u>Recreation Unit</u>	<u>Total Visitors</u>		
	<u>1958</u>	<u>1962</u>	<u>1965</u>
Palouse Falls	12,000	15,691	30,309
Lewis and Clark Trail Wayside	39,500	56,632	99,907
Levey Landing (Ice Harbor)	-	19,000	24,305
Fishhook Park (Ice Harbor)	-	18,000	37,264

c. Anticipated Public Use.

Each of the factors discussed in the foregoing paragraphs of this section has a bearing on the future recreational use of the reservoir. Each must be considered in making the visitor use estimate. From these factors, a judgment estimate has been made. The initial use at a point three years after reservoir impoundment is expected to be 150,000 visitors annually. At the end of a 100-year project life, the attendance estimate is 450,000 annual recreation visitors.

4.08. FISH AND WILDLIFE RESOURCE DEVELOPMENT FACTORS.

As discussed in Section 3, paragraph 3.06, the project has resources attractive to fish and wildlife development. The following factors will influence that development. The related facilities map, Plate 1, lists the existing fish and wildlife management areas near the project. Waterfowl constitute the most important wildlife group utilizing the project area, because it is on an important flyway for duck and geese migrating south. The project has an irregular shoreline and most of the north shore is free from any highway or railroad disturbance. Isolation and sparse population are prime factors and even though the project will receive a sizable recreation visitor attendance, this use will be concentrated near developed areas. A final factor of significance is the rapid siltation expected on the Palouse River. This entire protected canyon will soon fill with silt and become a natural haven for all types of wildlife. (A complete discussion on fish and wildlife resources of this project has been prepared by the U. S. Fish and Wildlife Service. See Section 5).

4.09. INDUSTRIAL RESOURCE DEVELOPMENT FACTORS.

Paragraph 3.07 discussed the basic resources of the project regarding industrial development. Slackwater navigation of the Snake River and space available for the exchange of commodities are the important assets. Other factors are the availability of low-cost electrical power, water in large volume, the nearness to major wheat production areas, the new highway crossing, the reservoir, population growth trends, rail service, and the location and size of land tracts

available for development. It is difficult to predict what new industries will be established on or near the pool. Long-range possibilities include fertilizer plants, chemical plants, pulp mills, cement plants and aluminum plants, and other industries seeking economical transportation, power, water, and large land areas with some degree of isolation.

SECTION 5 - COORDINATION WITH OTHER AGENCIES

5.01. NEED FOR COORDINATION.

Continued coordination to gain the cooperation of Federal, state, and local agencies, as well as organizations and groups, will be required to obtain maximum recreational, wildlife, navigation, and industrial benefits from the reservoir resources. Comprehensive planning must include the interests of all these parties and their active participation has been and will continue to be solicited and encouraged.

5.02. MASTER PLAN PUBLIC HEARING.

a. Preparation.

Since the 1964 approval of the preliminary master plan, district office personnel have been working on details of the master plan. This has involved a great amount of coordination with other agencies and groups through correspondence, field trips, and meetings. A basic land use plan was thus prepared for presentation at a public hearing designed to gain comment on the plans and to further substantiate the soundness of our planning studies.

b. Results of Hearing.

The public hearing was held Tuesday evening, 16 November 1965, at the district office. Approximately 60 representatives of the various concerned agencies or groups were in attendance. The Corps of Engineers' reservoir planning procedures were explained, followed by a discussion and presentation of the land use plan. Statements were then received from representatives of the various groups in attendance. A court

reporter's transcript of the hearing is on file at the district's Reservoir Planning Section. In general, the plan, as presented, was acceptable to those attending the hearing. Some changes pursuant to ideas expressed at the hearing have been incorporated into the plans as presented herein. Many of the problems that have been resolved through this planning process are discussed in the following paragraphs of this section. The following is a list of all agencies, organizations, or groups from whom comment was received at or as a result of the hearing:

- U. S. Department of Interior, Fish and Wildlife Service
- U. S. Bureau of Outdoor Recreation
- U. S. Department of Health, Education, and Welfare
- Washington State Department of Health
- " " " " Commerce and Economic Development
- " " " " Game
- " " Highway Commission
- " " Parks and Recreation Commission
- Franklin County
- Walla Walla County
- Port of Walla Walla
- Port of Whitman County
- Port of Kahlotus
- Walla Walla Chamber of Commerce
- Pacific Inland Navigation Company
- Tidewater-Shaver Barge Lines
- Peavey Company Terminal Operations
- Continental Grain Company
- Ritzville Warehouse Co., Inc.
- Washtucna Grain Growers
- Marshall, Barr, and Pacquer (Engineering Firm)
- Richland Rod and Gun Club
- Methodist Churches, Walla Walla District

5.03. RECREATION AGENCIES.

a. National Park Service.

(1) Recreation.

Representatives of the National Park Service visited the reservoir area in November 1961 and considered its recreational values

and development possibilities. It was determined that the area holds no recreational attractions of national significance, but that there are important values of local and state significance.

(2) Archeological Investigations.

The National Park Service, through contracts with Washington State University, has arranged for investigation of archeological sites as recorded by the Smithsonian Institution study of the Lower Snake in 1948. All the data collected have been or are being appropriately recorded, analyzed, and written up in accordance with the contract agreements. (See paragraph 3.03). The artifacts are being preserved by the University museum.

b. Bureau of Outdoor Recreation.

The Bureau of Outdoor Recreation was furnished information relative to the project development in connection with their initial inventory studies. In March 1966 a field trip of the reservoir was conducted to acquaint them with our development proposals. Their comments will be included as an attached exhibit in this report when they are furnished.

c. Washington State Parks and Recreation Commission.

In 1959, a reconnaissance was conducted by the State Parks and Recreation Director, evaluating the reservoir potential, and in October 1959 the Commission approved the idea of a state park at Lyons Ferry, requesting that the Corps reserve adequate acreage for this purpose. The following field trips have confirmed this view. November 1961, joint National Park Service and Washington State Parks; July 1962,

to Lyons Ferry site, by the Commission members; and an August 1965 visit by the State Planning and Development staff. Exhibit A represents their most recent expression, as presented at the public hearing in November 1965.

d. Counties.

Of the four counties abutting the reservoir area, only two, Walla Walla County and Franklin County, have established county park boards. Based on correspondence and discussions with these two park boards regarding their interest and activities on the Ice Harbor reservoir, it appears unlikely that either county will be in a position to undertake early development or management of any area on Lower Monumental reservoir. It is planned, however, to continue working with these county agencies and to encourage county participation to the fullest extent of their interest and capability. Port commissioners of both Whitman and Columbia Counties have declared their desires in development of facilities for small boat access and moorage at feasible points along the reservoir.

5.04. FISH AND WILDLIFE AGENCIES.

Extensive and continued coordination with the fish and wildlife agencies, both state and Federal, has been carried on since early 1959. The U. S. Fish and Wildlife report on the project resources received coordination with this office prior to being published in September 1960. This report has been modified by recommendations set forth in two subsequent letters, reproduced herein as Exhibits B and C. Determination was made that there would be no attempt to acquire lands outside the

project taking line. The land use classification for wildlife, as shown on the land use map, Plate 2, showing only interim fish and wildlife use of the large flat downstream from Lyons Ferry, has caused a great deal of concern to the wildlife agencies. See Exhibits D, E, F, and G. Exhibits E and G were statements presented at the public hearing. (See also Exhibit H for a statement of the Port of Walla Walla on the subject). Our recommendation for land use is shown on Plate 2, recognizing that the fish and wildlife interests are currently considering a revision to their requests.

5.05. PORT COMMISSIONS.

There are four port districts involved in the Lower Monumental reservoir area. These are: Port of Walla Walla, Port of Columbia, Port of Kahlotus, and Port of Whitman County. All except the Port of Walla Walla have prepared comprehensive plans or have submitted preliminary drafts of a plan.

a. Port of Walla Walla.

Their interest lies mainly in McNary and Ice Harbor projects, but they have expressed interest in the large tract of land at Lyons Ferry (site selection report by Bovay Engineers, January 1962). For their statement at the public hearing, see Exhibit H. They have not incorporated any Lower Monumental shorelands into a comprehensive plan.

b. Port of Columbia.

The comprehensive plan for the Port of Columbia recommends development of the area at the mouth of the Tucannon River as the principal terminal facility for Columbia County. Since early 1960,

we have had close contact and coordination with the Commission, until just recently. They failed to make any statement or expression of interest as requested at the public hearing.

c. Port of Kahlotus (Franklin County Shorelands).

Rather complete coordination has been maintained with this port district since their formation. The Lyons Ferry area has been the prime interest of the Port. Our land allocation, as recommended herein, has been extended both upstream and downstream from that shown at the public hearing, in favor of the Port. They have a plan of development completed and are most anxious for approval of this document so that they may obtain control of the land and proceed with development.

d. Port of Whitman County.

The comprehensive plan of development prepared for the Port of Whitman County shows full development of nearly two miles of non-project lands upstream from Riparia. There has been no conflict of land use on Lower Monumental project within the boundary of this port district.

SECTION 6 - ALLOCATION OF PROJECT LANDS

6.01. BASIS OF CLASSIFICATION.

The project-owned lands around Lower Monumental reservoir, while generally adequate for collateral uses in early years of project life, are limited in extent when considering long-range future demands. This emphasizes the need for a sound and judicious plan for allocation of lands to the various uses. The categories of land classification, as used on the Land Use Map (see Plate 2) conform to the "Uniform Land Use Classifications for Master Plan Studies," adopted on 10 January 1966 for use throughout North Pacific Division. Full consideration has been given to the guidance in engineering manuals and supplemental instructions, and to all Federal laws governing development and management, as cited in Section 1. Land use assignments have been determined with a view to assuring utilization of the various resources of the project area with maximum sustained benefits to the greatest number of people.

6.02. LAND USE CLASSIFICATION.

Descriptive criteria and conditions pertaining to each category of land use are given in the following paragraphs.

a. Project Operation.

Lands required by the Corps of Engineers for operation and maintenance of project structures or for care and management of the project. Public access and use may be continuously or periodically restricted or closely controlled for safety or security reasons. Inspections of functional features not ordinarily open to the public may be arranged to accommodate educational or other groups.

b. Priority One, Public Recreation.

To implement the provisions of Section 4 of the 1944 Flood Control Act, as amended by Section 207 of the Flood Control Act of 1962, and as further amended by the Land and Water Conservation Fund Act of 1965, project lands are made available for public recreational use and access. These areas are selected on the basis of existing and potential demands for public access and recreational use facilities, their desirability for and adaptability to recreational use and development, and correlative consideration of all other use demands and potentials. Land areas are divided into four sub-categories according to their intended use and time of development. These are: initial development, future development, general access, and approved for acquisition. Descriptions follow.

(1) Initial Development.

Lands in the Priority One category which are developed or planned for development as public park and recreation areas under the administration of the Corps of Engineers or other Federal, state, or local governmental agencies, or through commercial concessionaires within three years after the project is placed in operation. No conversion to private or exclusive group use of such lands will be permitted.

(2) Future Development.

Lands having the same use capabilities and development potential as initial development lands but which are reserved and designated for this use and development in the future. Public entry and use without development might be expected and permitted; however,

no conversion to private or exclusive group use will be permitted. Interim use for fish and wildlife purposes or leasing for grazing and agricultural purposes is permitted, provided such interim use will not adversely affect the public recreational values of the area, and it is made certain that the land will be readily available for the purpose for which it is reserved.

(3) General Access.

These areas, generally the narrow shorelands around the project, are not suitable or required for intensive development of recreational facilities and are reserved primarily to assure free public access to and along the shores of the project, or they may be utilized for operational purposes, wildlife habitat, scenic and other resource protection and development of minor public recreational facilities. Interim use for grazing or agricultural purposes is permitted, provided such use will not adversely interfere with the above prescribed uses. Private or exclusive group use of such lands will not be permitted.

(4) Approved for Acquisition.

Land required for recreation purposes and approved for acquisition under future budget program. (This project has no lands in this sub-category).

c. Priority Two, Recreation.

Lands lying above the five-year flood frequency elevation, and excess to Priority One requirements, which are reserved and designated for use by a non-profit organization or agency for the purpose of rendering a public recreational-educational service of a charitable

or character-building nature on a non-exclusive, non-discriminatory basis. Examples of possible qualifying Priority Two uses are: Boy Scouts, Girl Scouts, Camp Fire Girls, 4-H Clubs, schools, churches, etc. No exclusive individual use will be permitted.

d. Priority Three, Recreation.

Lands lying above the five-year flood frequency elevation, and excess to Priority One requirements, which are reserved and designated for use by a non-profit organization or agency which functions in the public interest to some extent, by providing public recreational opportunities normally provided under Priorities One and Two, on a non-exclusive, non-discriminatory basis. Examples of possible qualifying Priority Three uses are: Chambers of Commerce, Kiwanis Clubs, Lions Clubs, etc. No exclusive individual use will be permitted.

e. Priority Four, Recreation (Boat Club Sites).

Lands, including shorelands, not needed for operational or higher priority use but required for yacht or boat club development and designated for use by such clubs for the purposes of moorage, protection, and care of private boats on a non-commercial basis. The construction of buildings for human habitation will not be permitted at these sites. All structures must have the prior approval of the District Engineer. Membership in the clubs must be open at reasonable fees without discrimination as defined by regulations of the Department of the Army. (This project has no lands in this category).

f. Public Port Terminal.

These are shoreline frontage areas determined to be essential to utilization of the navigational resources of the project. Their

prime purpose is to afford space for transfer of waterborne freight. Lands are reserved for public port terminal sites at appropriate intervals along the shoreline, at points strategically located in relation to existing and potential industrial tributary production areas, and logically related to the road system serving these areas. These areas may be made available for conveyance to states, political subdivisions thereof, port districts, or port authorities, under provisions of Section 108 of Public Law 86-645 (74 Stat. 486), for development of public port facilities.

g. Industrial Use and Access.

These are areas of project lands not required for project operation, public recreational use or access, public port terminals, or fish and wildlife purposes. With appropriate restrictions as required to satisfy project operational requirements, these areas may be made available for conveyance to states, political subdivisions thereof, port districts, or port authorities, under provisions of Section 108 of Public Law 86-645, for development of private terminal facilities or industrial uses requiring close association with the water area of the reservoir, or they may be leased directly to such industrial users in those instances where conveyance under referenced Section 108 of Public Law 86-645 is not practicable or feasible.

h. Fish and Wildlife.

(1) Project Lands (Public Law 85-624).

In accordance with the provisions of Section 3 of the Fish and Wildlife Coordination Act of 1958 (Public Law 85-624), selected

areas of project land may be reserved for use in development and management of the fish and wildlife resources of the project. These lands are selected jointly by the Bureau of Sport Fisheries and Wildlife and the appropriate state fish and wildlife agency or agencies, from those lands determined by the Corps of Engineers to be available for such use.

(2) Special Law Lands.

These are lands specifically authorized by Congress to be acquired for the express purpose of being developed and managed for benefit of migratory waterfowl. Their classification for fish and wildlife is set and can be changed only by act of Congress.

(This project has no lands in this sub-category).

i. Easement.

These are lands on which only a flowage easement (or other limited interest) has been acquired. To the extent that terms of the easement will permit, they should be used and managed in a manner similar to the "General Access" areas. (This project has only one area in this category. It was too small to show on Plate 2. The railroad right-of-way under Joso Bridge on the right shore was acquired in easement).

6.03. RESERVATIONS.

The rights reserved by former land owners and easements granted to date are shown in red on the Land Use Map, Plate 2. These are use privileges reserved and/or granted for irrigation pipelines, cattle watering corridors, and power lines. All government or public use of land at these locations will be subject to these easements.

6.04. INTERIM USE OF CLASSIFIED LAND.

The land use assignments have been made with a long-range planning objective. Actual development may be many years in the future. Thus, there can be long periods of time when the land could be beneficially used for another purpose. Such other uses would be temporary, generally for periods of five to 10 years, and will be arranged for as requests are made. Preference will be given to former land owners where appropriate. One such use is recognized in this report and was discussed under Fish and Wildlife in Section 5. (See also note on Plate 2).

6.05. LAND USE BY ACRES.

The 8,397 acres of project lands above normal pool are divided among the several categories of use, as shown on Plate 2. The approximate acreages by area, with totals by category, are tabulated as follows:

	<u>Acres Per Site</u>	<u>Category Total</u>
<u>Project Operations</u>		
North Shore	70	
South Shore	<u>293</u>	363

Priority One, Public Recreation

	<u>Initial</u>	<u>Future</u>	
Mathews	31	0	31
Header Point	0	17	17
Ayer	106	22	128
Joso	31	28	59
Turner Bay	25	91	116
Tucannon	0	14	14
Texas Rapids	49	44	93
Devils Bench	16	107	123
Graze	19	0	19
Skookum	60	0	60
Lyons Ferry	801	0	801
Riparia	<u>42</u>	<u>69</u>	<u>111</u>
Totals	1,181	393	

	<u>Acres Per Site</u>	<u>Category Total</u>
<u>General Access</u> (this figure includes an undetermined amount of land in highway and railroad rights-of-way which will be transferred when the project is completed).		4,293
<u>Priorities Two and Three, Recreation</u>		159
<u>Public Port Terminal</u>		
Port of Kahlotus, Lyons Ferry	14	
Port of Whitman, Riparia	69	
Port of Walla Walla, Ayer	43	
Port of Columbia, Tucannon	<u>16</u>	142
<u>Industrial Use and Access</u>		
North Shore, River Mile 55	294	
Lyons Ferry	147	
Riparia	59	
Mathews	87	
Ayer	65	
Joso	490	
River Mile 60	95	
Tucannon	<u>59</u>	1,296
<u>Fish and Wildlife</u>		
Palouse River	357	
Magallon	39	
South Shore, River Mile 54	75	
South Shore, Turner Bay	21	
Tucannon	<u>72</u>	564
<u>Easement</u>		<u>8</u>
Grand Total		8,397

SECTION 7 - RECREATION DEVELOPMENT PLAN

7.01. OVERALL CONCEPT.

In planning for recreational use of the project, we have been guided by the aforementioned laws, regulations, and Engineering Manuals, and have considered all the factors influencing the resource development. Nine areas on the reservoir and one downstream from the dam have been selected for initial development (see Plate 2). Facilities are shown on Plates 3, 4, 5, and 6 of this report, and the items of development are listed by unit, unit price, and quantity in Appendix 1, Cost Estimates, bound separately. The development approach has been aided measurably by our experience on related and similar projects within the district. The attempt will be to concentrate most of the facilities at one major area, developing it to a high standard. Only minor work is proposed at the other nine areas, in order to provide for boat launching and general use of the shoreline throughout the reservoir.

7.02. AREAS SELECTED FOR INITIAL DEVELOPMENT.

Development at each area is briefly discussed in the following paragraphs. The order of listing reflects the relative significance of each area in the total program.

a. Lyons Ferry - River Mile 59 (see Plate 4).

The selection of this site as the major recreation unit on the reservoir is an obvious choice, considering the foregoing discussions. Its scenic attraction, geologic interest, archeological value, relationship to existing recreation development, available land area, and access

by existing and future road patterns all contribute to making the Lyons Ferry site the center of interest on the project. The development plan illustrates the initial and future potential of the area. It is of adequate size to handle all the activities which are normally found associated with a major recreational development on a reservoir of this type. It has the added historical, geological, and archeological features to create potential worth as a state park unit. Initial development proposed to be accomplished by the Corps includes: an earth and rock fill silt protection dike; two boat launching ramps; sea wall and boat tie-up docks, with associated car-trailer parking; picnic and beach area, with comfort station, changehouse combination, picnic shelters, water fountains, picnic tables, tree and shrub plantings, and protective log boom, with associated parking areas; camping area to handle both groups and single unit use, with comfort station-washhouse combination, water outlets, trailer sanitary station, and tree plantings; viewpoint; foot trails; historical and archeological interpretive markers; and information and guidance signs.

b. Ayer - River Mile 51 (see Plate 5).

Initially, this site will be used mainly as a boating access point. It has an excellent sheltered, sediment-free boat basin and harbor of refuge, with a boat passage to the reservoir. It has land and water acreage capable of handling a major development. However, most of the associated land was part of an extensive borrow operation, artificial in character and devoid of topsoil. The site has good highway access, and the new railroad townsite of Ayer will provide

certain services which are not normally available near the Snake River in the reach downstream from Lewiston. Initial development will include access road, launching ramp, parking area, and minimum sanitary facilities. Consideration will be given to topsoiling and tree and grass planting when final character of the borrow area is known. Part of the land area is shown reserved for future use. The area has a long-range potential of a major marina and pleasure boating service area on the Snake-Columbia navigation system.

c. Texas Rapids - River Mile 66 (see Plate 6).

Located in the upper reaches of the reservoir and conveniently adjacent to Little Goose access road, this site will initially serve the needed boat landing and fishing access functions in this reach of the reservoir. Road, parking area, launching ramp, and minimum restroom facilities will be needed for the expected initial use. Most of the land area is shown reserved for future development. The site is adequate in size and character to function as a major county park.

d. Devils Bench - River Mile 42 (see Plate 3).

This is a long, flat bench area adjacent to the north abutment. It was created by deposit of spoil material from the dam construction. Access is convenient to the site from Kahlotus and other north shore communities down Devils Canyon, and from the south shore by passage across the top of the dam. The initial development will be integrated with and be a part of the visitors' facilities at the dam. The boat launching ramp and parking area, however, will satisfy the access at this end of the reservoir.

e. Riparia - River Mile 67 (see Plate 6).

Access for boat launching is the prime consideration at this site. Physical features of the region limit the service area to the farming units generally within the Alkali Flat Creek drainage basin. Only minimum sanitary facilities will be provided. This site, like Texas Rapids on the opposite shore, will be attractive initially as a boat launching and fishing access point. Its character and size are ample for major park development if recreation demands of the future are such as to require full development. Most of the land area is shown reserved for future use.

f. Mathews - River Mile 40 (see Plate 3).

This is a boat launching access point needed primarily for fishermen. It would have been provided as part of the Ice Harbor development program, but this was not possible because of timing of railroad relocation work in the area. Access to the river below each project is needed for operational use, as well as fishing access. Access road, parking area, and launching ramp are proposed.

g. Turner Bay - River Mile 59 (Development by Others).

This small, protected bay and associated shoreland adjacent to the new state highway are shown as initial Priority One recreation area, in order to permit development of a public boat marina. The Dayton Yacht Club has expressed its intent and interest in sponsorship of such a facility at this location. This type of service is needed on this reach of the river. If the state is not inclined toward development of a commercial marina at Lyons Ferry Park, this would be offered as a desirable alternate.

h. Graze - River Mile 44; Skookum - River Mile 47.5; and Joso - River Mile 58.

No development plans are presented for these three sites. Access will be by boat from the waterside and only minor development will be involved. During the early years of project life, such elements as shelters, picnic tables, and sanitary facilities will be provided. These will be installed when the shoreline has had a chance to stabilize and when the need is demonstrated.

i. Tucannon (Future Site) - River Mile 62.5; and Header Point (Future Site) - River Mile 72.

Both of these sites were selected during the preparation of the preliminary master plan, but need for initial development is questionable now. At Tucannon, the Little Goose access road no longer passes the site, creating an access problem, and boat launching in this reach of the reservoir can be satisfied by Lyons Ferry and Texas Rapids. Header Point has been so altered by construction activities at the dam that justification for early development is questionable.

7.03. VISITORS' FACILITIES AT THE DAM (see Plate 3).

The details for much of this work have already been accomplished and included in the project construction contracts. Visitors' information and guidance will be available on both shores and as indicated on Plate 3. Automobile traffic will be permitted for visitors to see features on both shores.

7.04. CONSIDERATION OF SEDIMENT HAZARD.

Three sites are in danger of major sediment deposit.

a. Lyons Ferry (see Plate 4).

Control of the sediment in the Palouse River has been carefully studied. The development of this site would be useless if the sediment barrier, as shown on Plate 4, were not practical. Some problem is anticipated at the entrance to this protected basin, once the Palouse River Canyon is filled. The peak suspended sediment load at the Hooper streamflow station during the month of February 1963 was 3.2 million tons. Studies are not available prior to 1962.

b. Riparia.

The proposed development is not connected directly with Alkali Flat Creek, but some sedimentation is expected in the entry to the basin, once the sediment enters the reservoir and drifts downstream.

c. Tucannon.

The Tucannon Bay can expect considerable sedimentation; however, no studies are available to determine a life expectancy.

7.05. PROJECT SIGNS.

Project entrances, access points, and recreation areas will be identified and signed. Design of these signs is shown on Plate 7, which is included in this master plan as a means of gaining approval consistent with instructions from NPD, 1st Indorsement, dated 30 July 1965, subject: "Standard Design of Signs for Project Entrances and Public Use Areas, John Day and Dworshak." Standard designs will give harmony and uniformity and proper recognition to the Corps of Engineers. Small guidance signs will be installed where necessary.

7.06. LEWIS AND CLARK TRAIL MONUMENTATION.

As discussed in paragraph 3.04a, and as illustrated on the map following page 3-9 of this report, the Lewis and Clark Expedition is closely related to the Lower Monumental project. Monumentation and interpretation are a planned part of the Corps' development. Proposed locations for Lewis and Clark markers are shown on the map following page 3-9. Design of markers will conform to the proposals and adoptions of the Lewis and Clark Trail Commission.

SECTION 8 - ADMINISTRATIVE POLICIES AND METHODS

8.01. PROTECTION OF RESOURCES.

In order that the collateral resources of the Lower Monumental project may be properly protected and made available for public utilization, specific plans must be made for use of various areas of project lands, certain developments must be accomplished on the areas to permit and accommodate public use and administration, and appropriate control of the various uses must be actively carried out. Land use assignments are proposed according to the principles outlined in Section 6. Nature and extent of development in public recreation areas were discussed in Section 7. Development by the wildlife agencies on wildlife lands will be based on plans prepared by the Washington State Department of Game, in cooperation with the U. S. Fish and Wildlife Service, with appropriate approval by the Corps of Engineers. Development by port and industrial interests on port terminal and industrial lands will be based on plans prepared by the port commissions and navigation and industrial interests, with appropriate coordination with the Corps.

8.02. SCOPE OF CORPS' MANAGEMENT.

It is the purpose of this report to outline the principles, methods, and measures to be used in day-to-day administration and management of the reservoir area and the various uses thereon, and to indicate generally the staff and equipment required. This management involves: construction, operation, care, and maintenance of all public recreation facilities; investigation, removal and control of health and safety

hazards; control of fire hazards; removal of debris; control of erosion, both water erosion along the shoreline and wind erosion in sandy soils; and boundary monumentation and trespass. Real estate management involves processing of leases and licenses to others for the use of land allocated for Priority One - Public Recreation, and for fish and wildlife purposes; preparation and implementation of plans for disposal, lease or license of remaining project lands to others for port, industrial, and Priority Two, Three, and Four uses.

8.03. FUNCTIONAL RESPONSIBILITIES.

Administration of land and water areas and facilities provided for public use will be carried out by field and office personnel of the Walla Walla District.

a. District Office.

District office personnel will be principally concerned with: determining the nature and extent of development; preparing construction codes and requirements; initiating, coordinating, and reconciling activities relative to policies and regulations; relations with other agencies; public relations; and processing leases, licenses, and permits, as well as being responsible for obtaining compliance with terms of said instruments. Also, district personnel will take corrective action on trespass or encroachment violations when reported by the field or discovered by inspection.

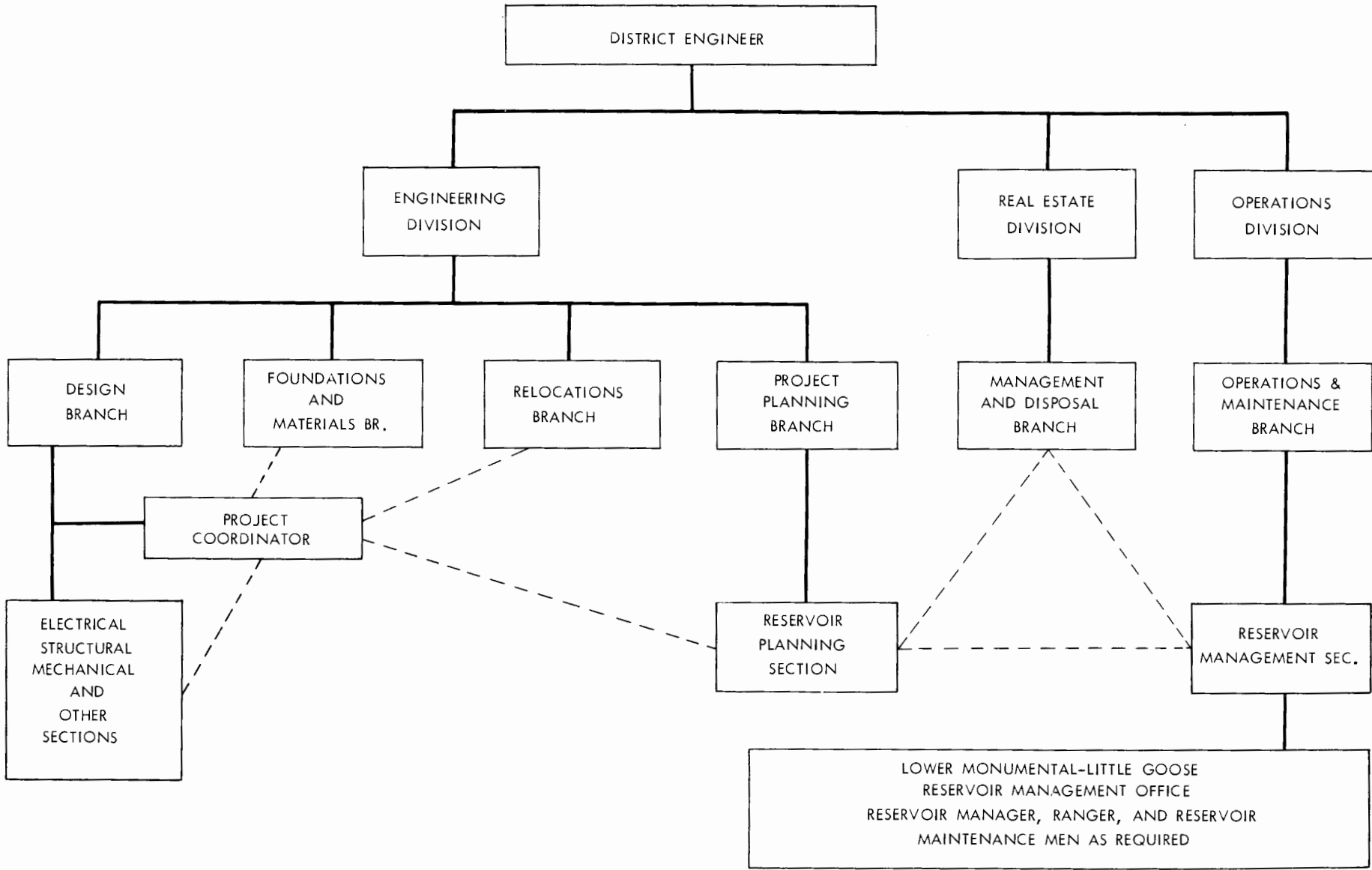
b. Field Office.

Field office personnel will be concerned with direct maintenance, management, and supervision of the reservoir development program. They will supervise the use of the lands and waters of the project area, protect and maintain government property, and require high standards of public health and safety. In addition to providing information to

prospective users of public facilities, they will report to the district office cases of trespass or encroachment which cannot be handled by a simple warning.

8.04. ADMINISTRATIVE ORGANIZATION.

The diagram on page 8-4 shows the current organization arrangement of those elements of the Walla Walla District staff having primary responsibility related to reservoir management activities. Because of project proximity and interrelationship, field personnel, as shown by the diagram, have responsibilities for both Lower Monumental and Little Goose projects. Physically, they are to be headquartered at Little Goose. This location is convenient to both projects. The field staff will be adequate to accomplish the day-to-day maintenance and to provide the appropriate amount of control over the various uses of project lands. All facilities in the vicinity of the dam, such as buildings, grounds, storage yards, aircraft landing field, roads, parking areas, ramps, restrooms, debris handling and passing, and general land area maintenance functions will be performed by personnel at the project and will not be the responsibility of the Reservoir Manager. It is therefore considered very probable that the manager's function can be accomplished by one of the project employees who could supervise one ranger and two permanent maintenance men on a full-time basis, plus temporary seasonal employees as required. This assumes management and operation of the Lyons Ferry area by the Washington State Parks and Recreation Commission.



8 - 4

8.05. MAINTENANCE.

Some areas of these projects are inaccessible by road. Travel from one area to another which does have road access is possible only by very devious and roundabout routes. The road distance between public use areas is substantially greater, sometimes several times as great, as the water distance. For faster travel time, and to provide for access to areas where there are no roads, a plan will be worked out to transport reservoir maintenance equipment and supplies by water. This will involve a special work boat. The boat will be of adequate size to haul special equipment necessary for minor maintenance, and to transport personnel safely in rough water. The boat will be used for all day-to-day maintenance work and for various small construction jobs to be done at isolated locations by hired labor. This has the added advantage of keeping personnel cognizant of activities on the project, and eliminates a great deal of travel time on the road getting from area to area.

8.06. CONTROL OF HEALTH AND SAFETY HAZARDS.

There are no known health hazards of major significance created by or associated with the Lower Monumental reservoir. Vector control problems are considered minor. There are questions concerning the suitability of reservoir waters for swimming. Major sources of pollution occur in the Lewiston-Clarkston area, 70 miles upstream. Floating debris and deadheads will constitute the principal hazard to both commercial and recreational navigation. It is planned to pass all debris through the dams until removal facilities are installed in the

Lower Granite project. In the interim period, plans will be formulated to minimize this hazard. As with the debris problem, other safety and sanitation problems will be handled by reservoir maintenance personnel in addition to their performance of routine maintenance of constructed facilities.

8.07. FIRE CONTROL.

Grass and brush fires can occur on the isolated areas used by the public for camping or other incidental purposes. Tumbleweed patches and accumulations along fence rows or natural obstacles are a particular problem. The principal danger is loss of natural vegetation and creation of blow sand problems, when these areas are burned to alleviate a fire hazard or to prevent additional infestation of adjacent fields. Planting of other types of vegetation in problem areas will control sources of noxious weeds on project lands. In undeveloped areas where late season vegetation becomes dry and flammable, range fires are possible, but these can be minimized by removal and control of highly combustible accumulations of dry material, particularly in areas habitually used by recreationists. The pattern of public use development will tend to concentrate the majority of use to relatively few areas, thus minimizing fire hazard and preserving the natural appearance of the shorelands.

8.08. EROSION CONTROL.

The light, sandy soils on much of the reservoir lands are subject to wind erosion and to water erosion at the shoreline.

a. Wind Erosion.

Control will be accomplished as much as possible by preservation of natural cover. This involves control of vehicular and other traffic through the erosion-vulnerable areas and prevention of grass and brush fires. Grass cover or other appropriate stabilization will be provided in all scarred, burned, or otherwise denuded areas. Durable turf grasses, gravel, or pavement will be provided in all intensive-use areas.

b. Water Erosion.

Erosion along the shoreline is a serious problem in many areas around the reservoir. Revetment or other coarse rock treatment is generally not acceptable in recreation areas. To preserve the recreational values, other techniques must be used. In some cases, reshaping to very flat beach-type slopes is possible. In other instances, reshaping to moderate slopes with sand or gravel protective blankets will be attempted. Some sections will be stabilized incidental to installation of boat tie-up docks, handling piers, etc. Overall, considerable experimentation has been undertaken and relatively inexpensive methods are known which can be used.

3.09. BOUNDARY MONUMENTATION AND TRESPASS.

A positive program of boundary marking is currently under study on this project, in accordance with OCE statement of policy, dated 1 September 1965. The primary responsibility is in Real Estate Division and the resultant study will become a supplement to the Real Estate portion of the GDM. For convenience and usability of the master plan,

the map, as and when prepared, will be included as a master plan plate. This boundary marking program will discourage and prevent unauthorized use and trespass. Monumentation before pseudoproprietary activities occur will eliminate many future management problems.

SECTION 9 - CONCURRENCE, CONCLUSIONS, AND RECOMMENDATIONS

9.01. REVIEW BY REAL ESTATE AND OPERATIONS DIVISIONS.

In order to assure complete coordination within the district, this master plan has been reviewed by appropriate elements of Real Estate and Operations Divisions. Pertinent data required for the compilation of the plan have been furnished by them. (Section 8 was written by Operations Division). This paragraph constitutes coordination, concurrence, and endorsement of the plan by Real Estate Division in compliance with ER 405-2-835.

9.02. CONCLUSIONS.

Development and use of Lower Monumental reservoir and its project-owned shorelands will benefit the region served with industrial and agricultural expansion, recreational use and enjoyment, and wildlife preservation. Planning studies were coordinated with all known interests and the overall plan, essentially as presented herein, was presented at a public hearing. The areas of conflicting interest have all been resolved, with the exception of the Port of Walla Walla versus fish and wildlife interest in the Joso industrial area, as discussed in paragraph 5.04. The classification to industrial use and access may appear contrary to the first statement in paragraph 6.02g; however, in light of the interim use proposal as discussed in Exhibit H, it is felt that the classification as presented herein is sound and will satisfy the interests of the Port, while still making the land available for wildlife use. The allocation of lands as proposed on Plate 2 is considered to be a sound

and reasonable division of Lower Monumental project lands. With the exception of the Joso area, as discussed above, this allocation is consistent with established criteria and guidelines set out in Section 6, and will afford maximum public use of the reservoir.

9.03. RECOMMENDATIONS.

It is recommended that this master plan be approved as a basis for land use management of the project, and as a guide for development of public recreation facilities on Lower Monumental reservoir.

ACKNOWLEDGMENTS

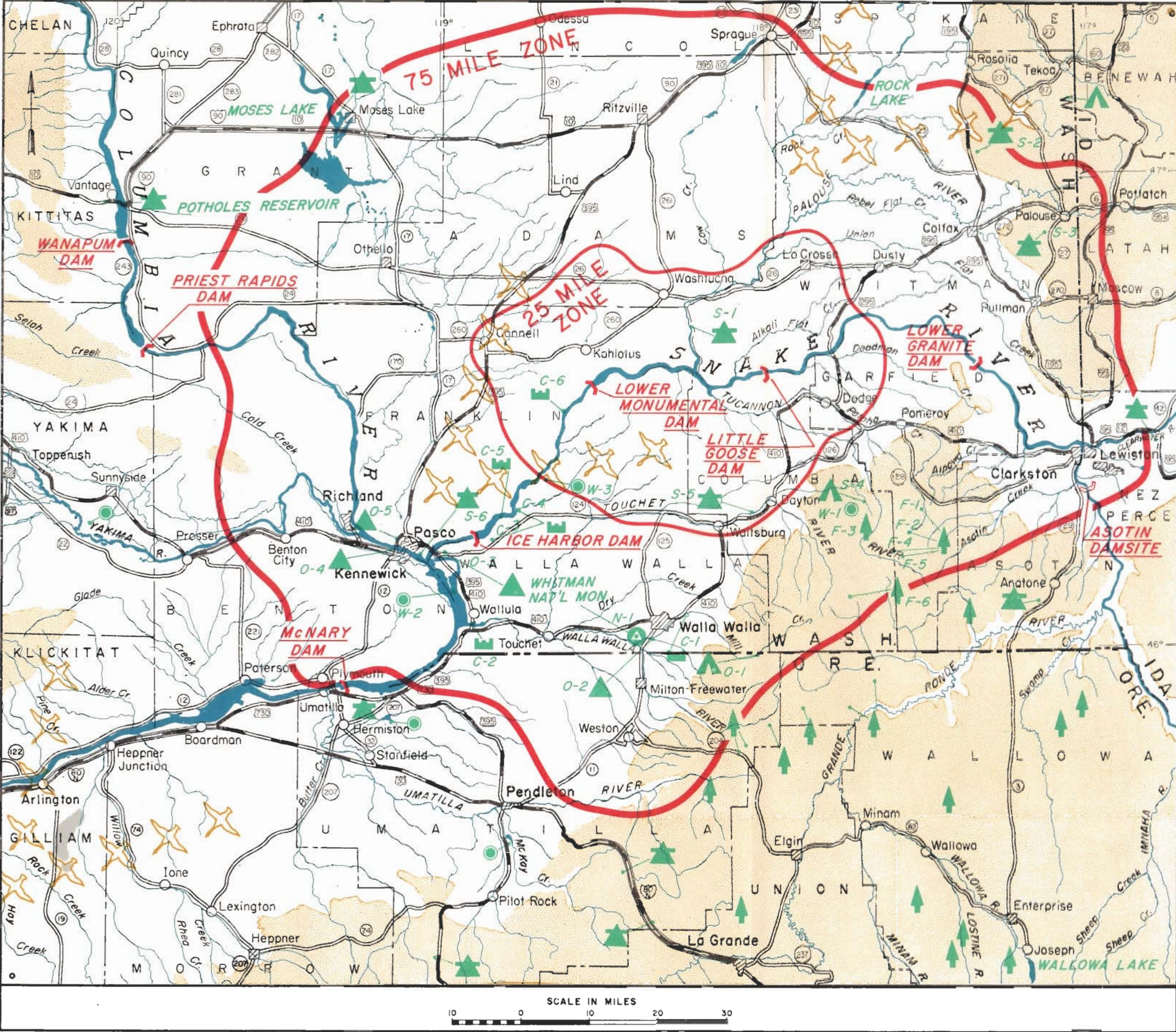
This master plan has been prepared under the direction of Colonel Frank D. McElwee, District Engineer, Walla Walla District; Mr. Fred W. Sneddon, Chief, Engineering Division; and Mr. Howard A. Preston, Chief, Planning Branch.

Direct supervision and preparation of the plan have been the responsibility of Mr. B. C. Christensen, Chief, Reservoir Planning Section; with Messrs. Sheldon J. Rindlisbacher, Thomas F. Slater, and Gary M. Coleman, Landscape Architects. Special thanks to Captain Robert L. Lane, in his fine job of conducting the public hearing.

Assistance was received from Mr. Ken C. Coryell, Real Estate Division, and Mr. C. D. Christiansen, Operations Division.

Typing has been by Alberta L. Booth and drafting under supervision of William J. Van Wyck.

PLATES



KEY TO RECREATIONAL FACILITIES

RELATED FACILITIES WITHIN 75 MILES HIGHWAY DISTANCE FROM LOWER MONUMENTAL RESERVOIR

- | | | | |
|-----|------------------------------------|-----|---|
| N-1 | WHITMAN NATIONAL MONUMENT | ⊙-1 | CAMP KIWANIS |
| C-1 | CAPTAIN ROOKS PARK | ⊙-2 | FORT WALLA WALLA PARK |
| C-2 | WALLULA PARK | O-3 | HOOD PARK |
| C-3 | CHARBONNEAU PARK | O-4 | COLUMBIA PARK |
| C-4 | FISHHOOK PARK | O-5 | CHIAWANA PARK |
| C-5 | LEVELY LANDING | F-1 | PATAHA |
| C-6 | WINDUST PARK | F-2 | BIG SPRING |
| S-1 | PALOUSE FALLS STATE MONUMENT | F-3 | TUCANNON |
| S-2 | STEOPE BUTTE STATE MONUMENT | F-4 | TEAL |
| S-3 | KAMIAK BUTTE STATE RECREATION AREA | F-5 | SPRUCE SPRING |
| S-4 | CAMP WOOTEN | F-6 | GODMAN SPRINGS |
| S-5 | LEWIS & CLARK TRAIL STATE WAYSIDE | W-1 | WM. T. WOOTEN GAME RANGE |
| S-6 | SACAJAWEA STATE MONUMENT | W-2 | McNARY GAME RANGE AND McNARY NATIONAL WILDLIFE REFUGE |
| | | W-3 | ICE HARBOR GAME RANGE |

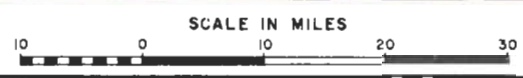
LEGEND

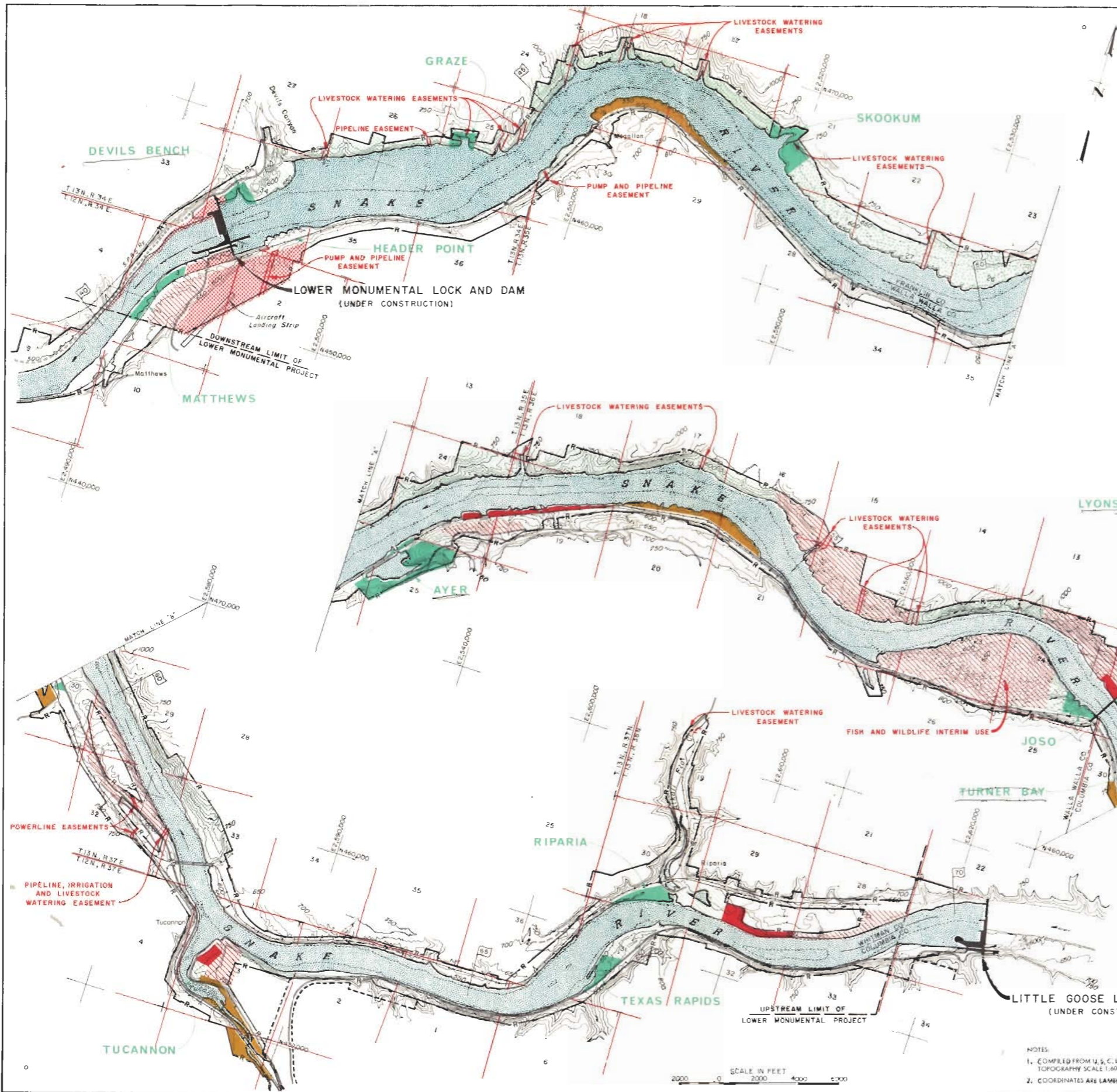
- NATIONAL PARK OR MONUMENT
- DEVELOPED STATE PARK
- RECREATION AREA (COUNTY OR OTHER)
- ORGANIZED GROUP CAMP
- WILDLIFE MANAGEMENT AREA
- FOREST SERVICE CAMP
- ARMY CORPS OF ENGINEERS PARK
- DAM EXISTING OR UNDER CONSTRUCTION
- FLYWAY OF MIGRATORY FOWL
- LANDS ABOVE ELEVATION 2500 M.S.L.

NOTES:

- NUMBERING OF AREAS IS ARRANGED IN CLOCKWISE FASHION
 - N - NATIONAL C - CORPS OF ENGINEERS S - STATE
 - O - OTHERS F - FOREST SERVICE W - WILDLIFE
- SOURCE DATA: STATE RECREATION DIRECTORIES, ROAD MAPS, FOREST SERVICE CAMP DIRECTORIES, PARKS FOR AMERICA SURVEY, PRIOR CORPS OF ENGINEERS MASTER PLANS

REVISION	DATE	DESCRIPTION	BY
U. S. ARMY ENGINEER DISTRICT WALLA WALLA, WASHINGTON			
MASTER PLAN DEVELOPMENT AND MANAGEMENT OF LOWER MONUMENTAL RESERVOIR, SNAKE RIVER, WASH.			
RELATED FACILITIES MAP			
DESIGNED: S. J. R.			
DRAWN: K. P. M. B. G.			
CHECKED: S. J. R.			
SUPERVISED: [Signature]			
CHIEF, Planning Branch			
RECOMMENDED: [Signature]			
CHIEF, ENGINEERING DIVISION			
APPROVED: [Signature]	DATE: 11 March 1966		
COLONEL, C. E. DISTRICT ENGINEER	SCALE AS SHOWN		INV. NO. ENG.
	FILE NO.		
	LM-05-37/1		
	SHEET		





VICINITY MAP
SCALE IN MILES
0 5 10 20

- LEGEND**
- NORMAL OPERATING POOL (EL 540 M.S.L.)
 - PROJECT BOUNDARY
 - ROADS
 - RAILROADS
 - RIVER MILES FROM MOUTH

- LAND USE CLASSIFICATION**
- PROJECT OPERATION
 - PRIORITY 1 PUBLIC RECREATION**
 - INITIAL DEVELOPMENT
 - FUTURE DEVELOPMENT
 - GENERAL ACCESS
 - PRIORITY 2 AND 3 RECREATION
 - PUBLIC PORT TERMINAL
 - INDUSTRIAL USE AND ACCESS
 - FISH AND WILDLIFE

NOTE
ALL LANDS INSIDE PROJECT BOUNDARY WHICH ARE NOT COLORED ARE EITHER WITHIN THE HIGHWAY AND RAILROAD RIGHTS-OF-WAY OR ARE CONSIDERED TO BE PRIORITY 1 PUBLIC RECREATION GENERAL ACCESS.

REVISION	DATE	DESCRIPTION	BY

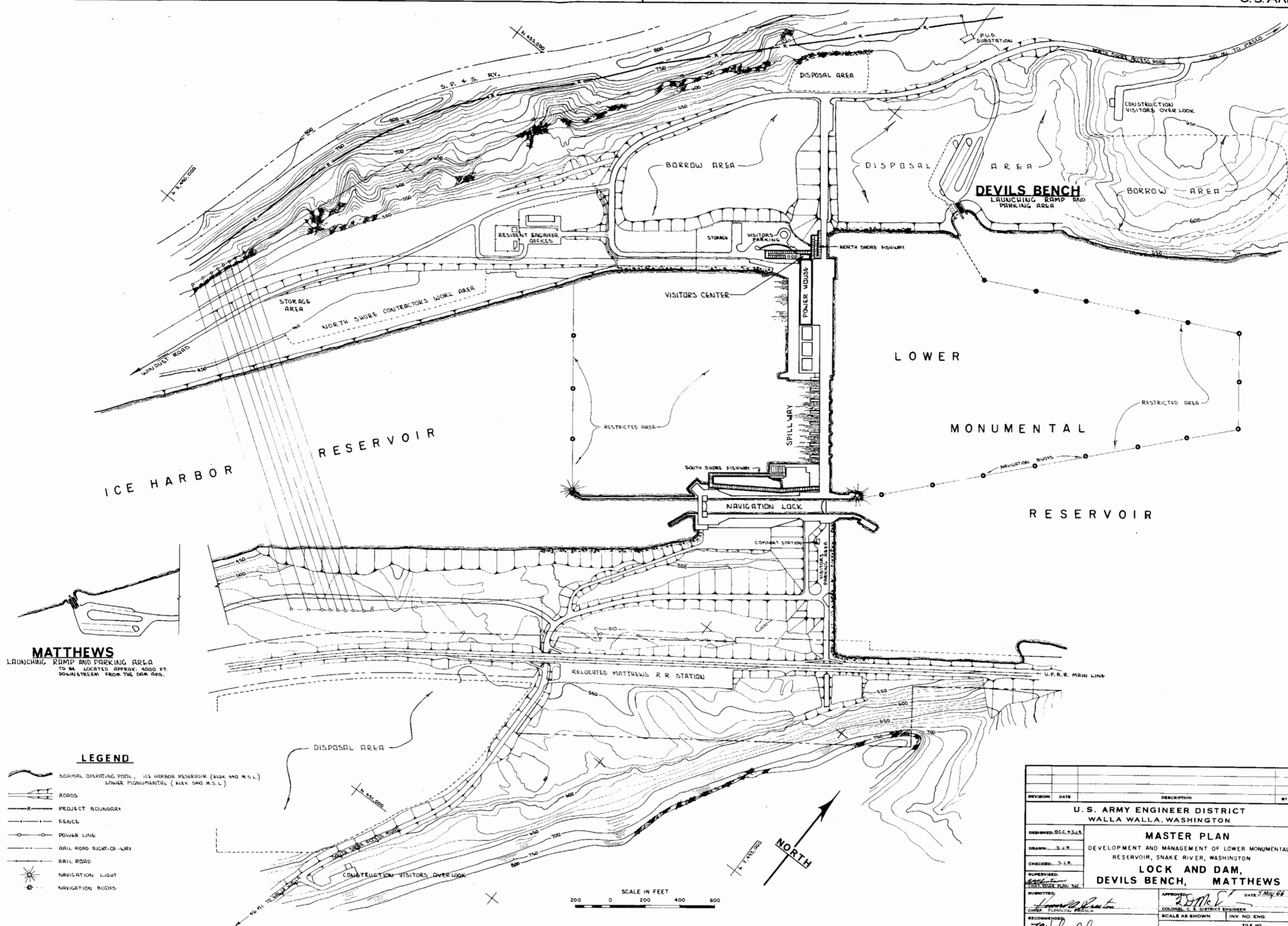
U.S. ARMY ENGINEER DISTRICT
WALLA WALLA, WASHINGTON

**MASTER PLAN
DEVELOPMENT AND MANAGEMENT OF
LOWER MONUMENTAL RESERVOIR,
SNAKE RIVER, WASH.
LAND USE MAP**

DESIGNED: S.J.R.
DRAWN & PLOTTING:
CHECKED: S.J.R.
PREPARED: [Signature]
SUBMITTED: [Signature]
APPROVED: [Signature] DATE: 1 Mar 68
SCALE AS SHOWN
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FILE NO. [Blank]
SHEET [Blank]

NOTES
1. COMPILED FROM U.S. C. E. STEREOPHOTODIAGRAPHIC TOPOGRAPHY SCALE 1:6000, DATED 1927 = 1959.
2. COORDINATES ARE LAMBERT WASHINGTON (SOUTH).

SCALE IN FEET
0 2000 4000 6000

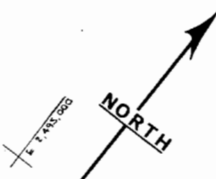


MATTHEWS
 LAUNCHING RAMP AND PARKING AREA
 TO BE LOCATED APPROX. 4000 FT.
 DOWNSTREAM FROM THE DAM AXS.

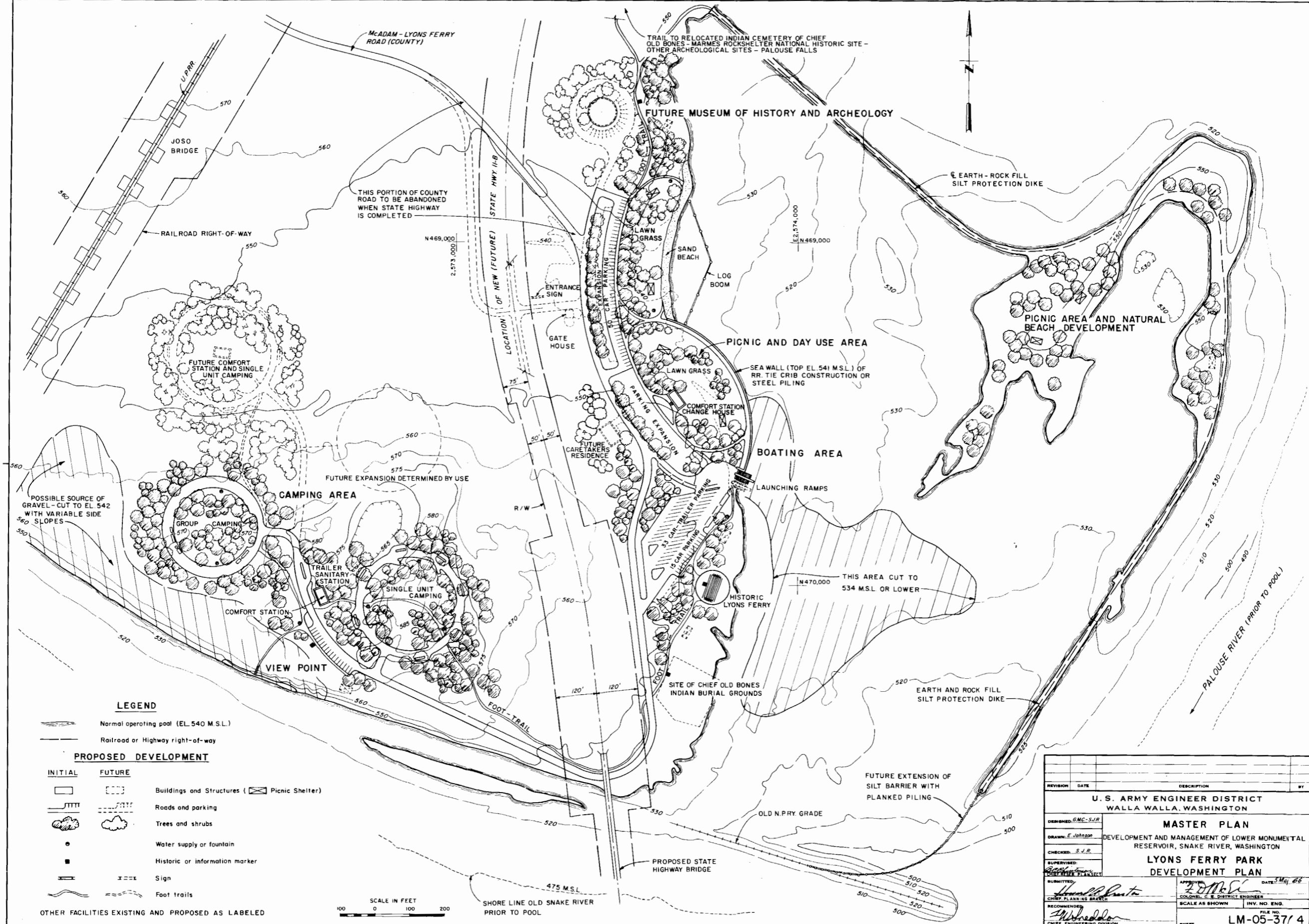
LEGEND

- NORMAL OPERATING POOL, ICE HARBOR RESERVOIR (ELEV. 440 M.S.L.)
 LOWER MONUMENTAL (ELEV. 540 M.S.L.)
- ROADS
- PROJECT BOUNDARY
- FENCE
- POWER LINE
- RAIL ROAD RIGHT-OF-WAY
- RAIL ROAD
- NAVIGATION LIGHT
- NAVIGATION BUOYS

SCALE IN FEET
 0 200 400 600



REVISION	DATE	DESCRIPTION	BY
U.S. ARMY ENGINEER DISTRICT WALLA WALLA, WASHINGTON			
MASTER PLAN			
DEVELOPMENT AND MANAGEMENT OF LOWER MONUMENTAL RESERVOIR, SNAKE RIVER, WASHINGTON			
LOCK AND DAM, DEVILS BENCH, MATTHEWS			
DESIGNED: S.C.C. + S.A.R.	APPROVED: <i>[Signature]</i> DATE: 5 May 66		
DRAWN: S.A.R.	COLONEL, G.E. DISTRICT ENGINEER		
CHECKED: S.A.R.	SCALE AS SHOWN		
SUPERVISED: <i>[Signature]</i>	INV. NO. ENG.		
CHIEF, PLANNING, DESIGN	FILE NO.		
RECOMMENDED: <i>[Signature]</i>	SHEET		
CHIEF, ENGINEERING DIVISION	LM-05-37/3		



LEGEND

- Normal operating pool (EL. 540 M.S.L.)
- Railroad or Highway right-of-way
- PROPOSED DEVELOPMENT**
- INITIAL** **FUTURE**
- Buildings and Structures (Picnic Shelter)
- Roads and parking
- Trees and shrubs
- Water supply or fountain
- Historic or information marker
- Sign
- Foot trails

OTHER FACILITIES EXISTING AND PROPOSED AS LABELED



REVISION	DATE	DESCRIPTION	BY
U.S. ARMY ENGINEER DISTRICT WALLA WALLA, WASHINGTON			
MASTER PLAN			
DEVELOPMENT AND MANAGEMENT OF LOWER MONUMENTAL RESERVOIR, SNAKE RIVER, WASHINGTON			
LYONS FERRY PARK DEVELOPMENT PLAN			
DESIGNED: <i>BNC-SVA</i>	DATE: <i>3 May 68</i>	APPROVED: <i>[Signature]</i> COLONEL, E. DISTRICT ENGINEER	
DRAWN: <i>E. Johnson</i>	SUPERVISED: <i>[Signature]</i> CHIEF PLANNING BRANCH		
CHECKED: <i>S.J.P.</i>	RECOMMENDED: <i>[Signature]</i> CHIEF ENGINEERING DIVISION		
SUBMITTED: <i>[Signature]</i>		SCALE AS SHOWN	INV. NO. ENG.
FILE NO. LM-05-37/4		SHEET	

LEGEND

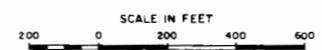
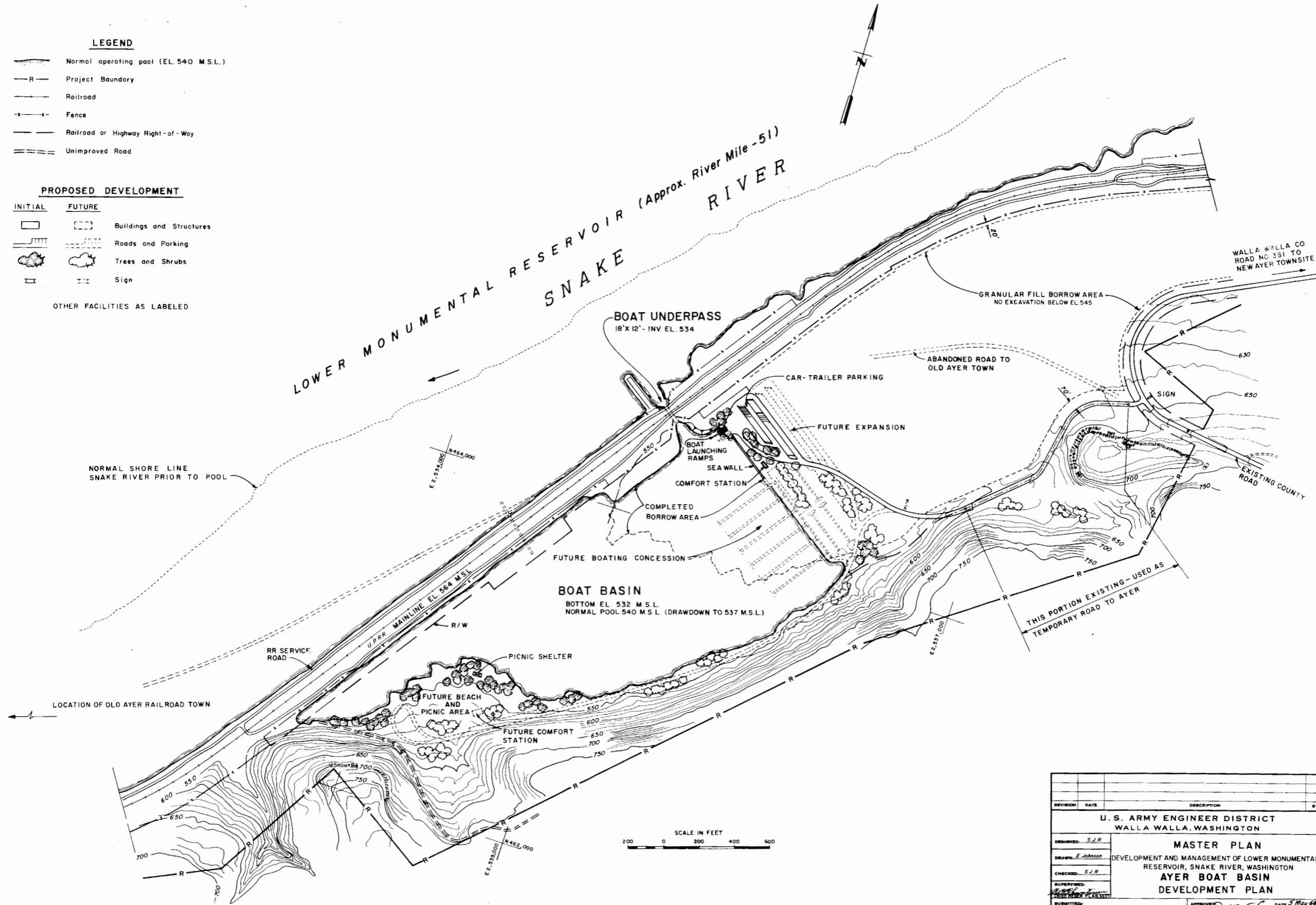
- Normal operating pool (EL. 540 M.S.L.)
- Project Boundary
- Railroad
- Fence
- Railroad or Highway Right-of-Way
- Unimproved Road

PROPOSED DEVELOPMENT

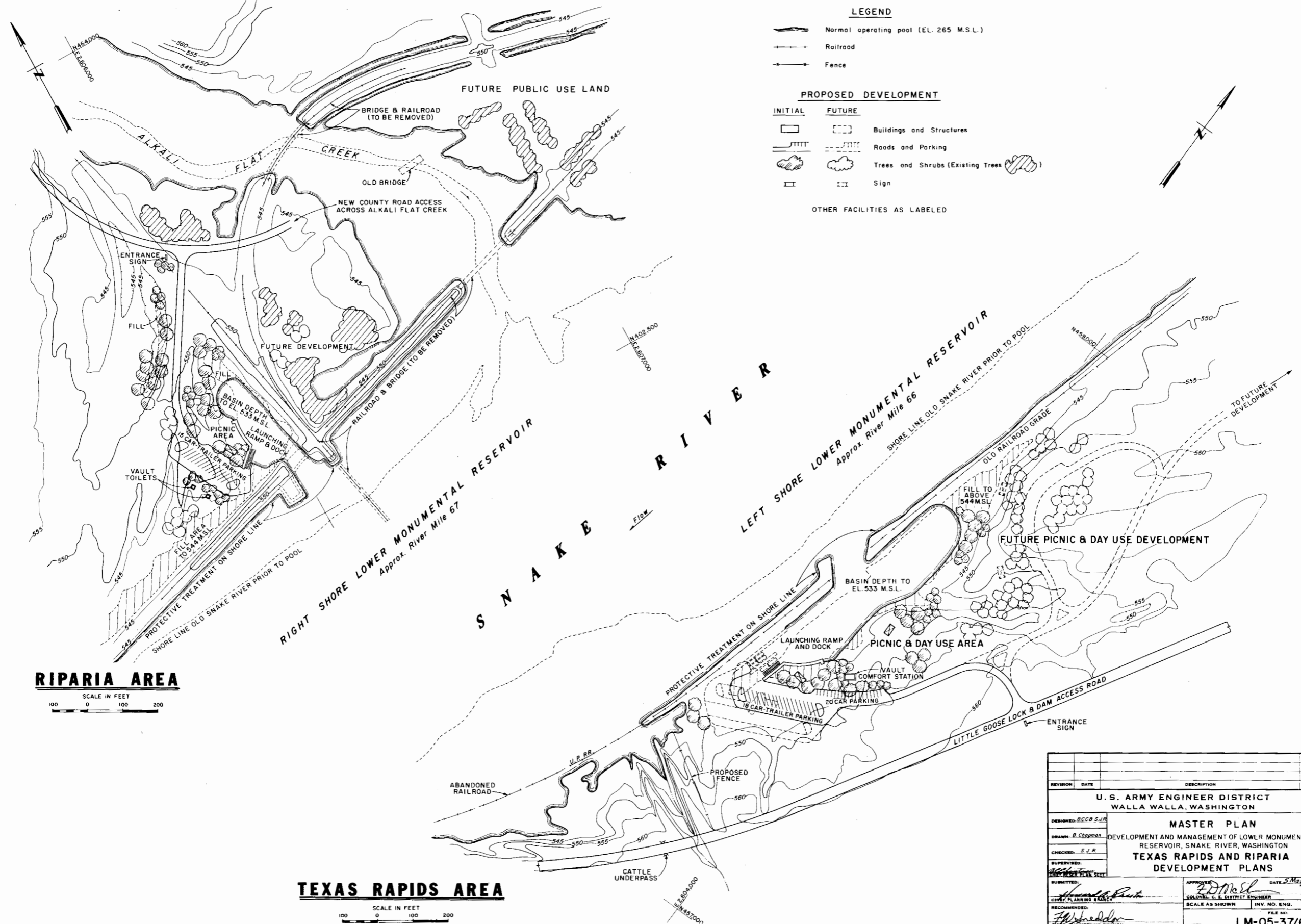
- | | | |
|----------------|---------------|--------------------------|
| INITIAL | FUTURE | |
| | | Buildings and Structures |
| | | Roads and Parking |
| | | Trees and Shrubs |
| | | Sign |

OTHER FACILITIES AS LABELED

LOWER MONUMENTAL RESERVOIR (Approx. River Mile -51)
 SNAKE RIVER



REVISION	DATE	DESCRIPTION	BY
U. S. ARMY ENGINEER DISTRICT WALLA WALLA, WASHINGTON			
MASTER PLAN DEVELOPMENT AND MANAGEMENT OF LOWER MONUMENTAL RESERVOIR, SNAKE RIVER, WASHINGTON AYER BOAT BASIN DEVELOPMENT PLAN			
DESIGNED: S.J.R.	APPROVED: <i>[Signature]</i> DATE 5 May 68		
DRAWN: E. Johnson	COLONEL, C. E. DISTRICT ENGINEER		
CHECKED: S.J.R.	SCALE AS SHOWN INV. NO. ENG.		
SUPERVISED: <i>[Signature]</i>	FILE NO. LM-05-37/5		
SUBMITTED: <i>[Signature]</i>		SHEET	
RECOMMENDED: <i>[Signature]</i>		CHIEF, ENGINEERING DIVISION	



LEGEND

- Normal operating pool (EL. 265 M.S.L.)
- Railroad
- Fence

PROPOSED DEVELOPMENT

- | INITIAL | FUTURE | |
|---------|--------|-----------------------------------|
| | | Buildings and Structures |
| | | Roads and Parking |
| | | Trees and Shrubs (Existing Trees) |
| | | Sign |

OTHER FACILITIES AS LABELED

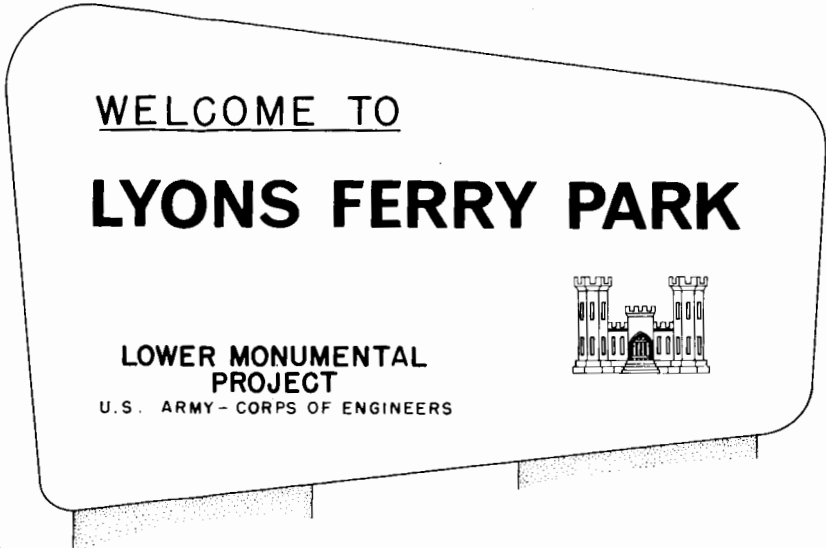
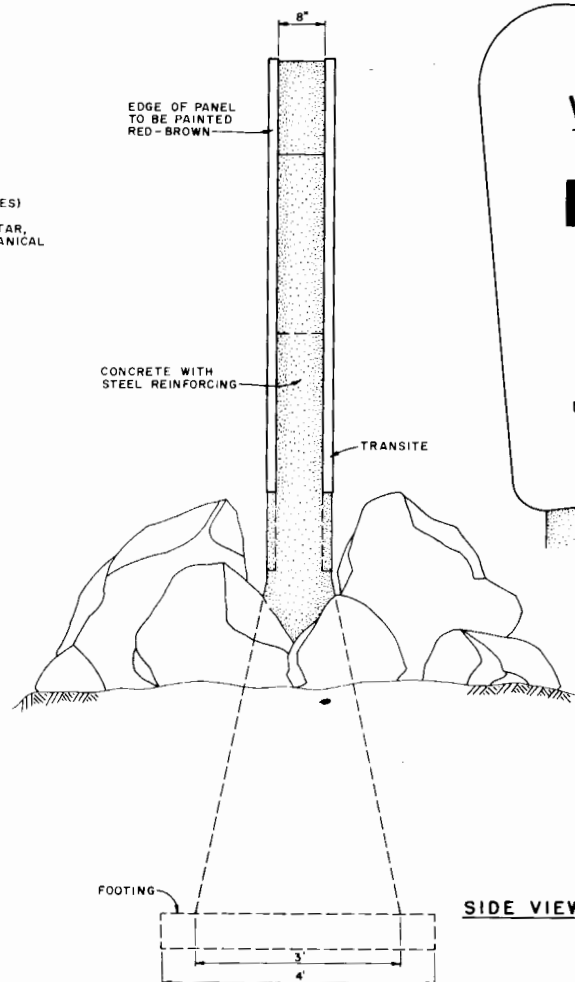
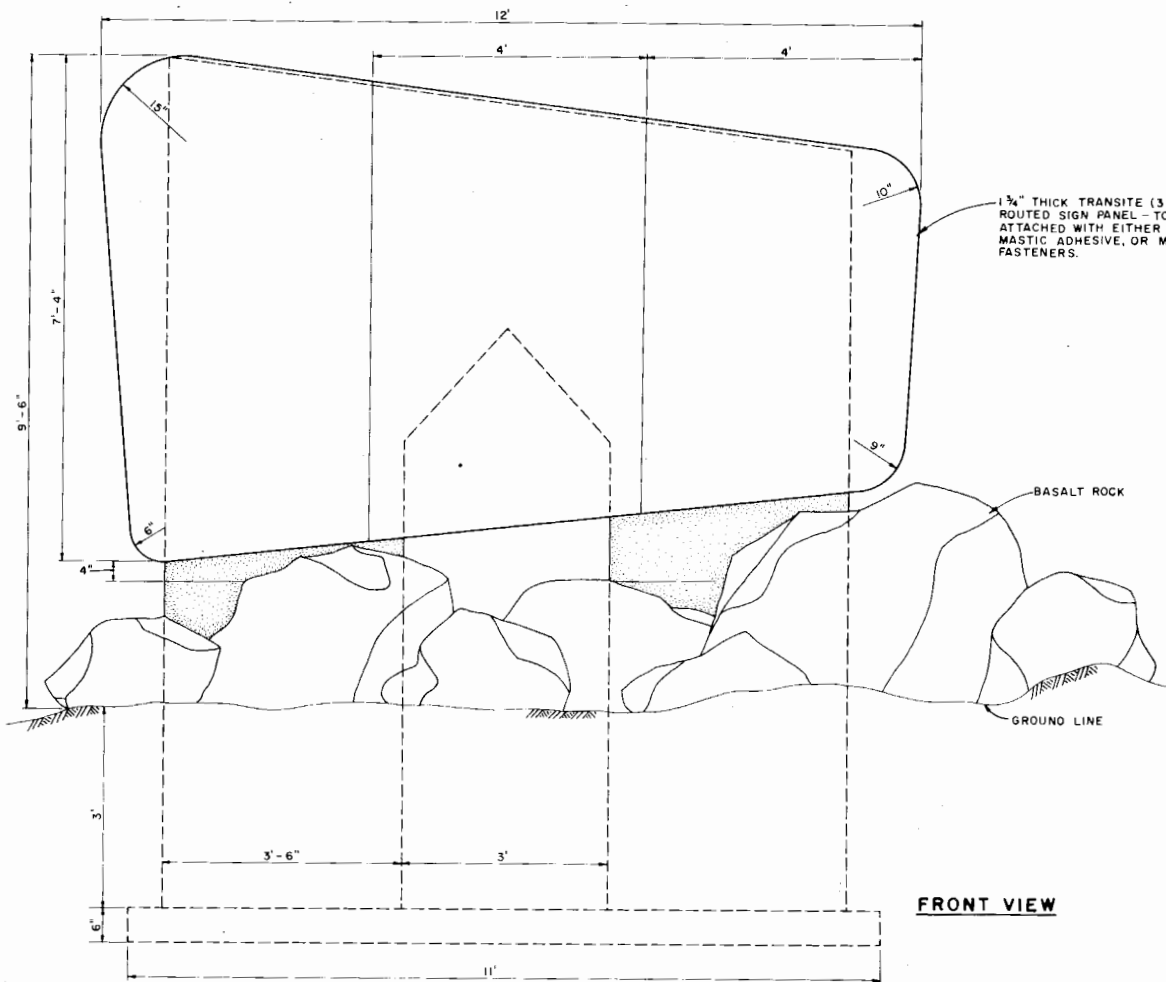
RIPARIA AREA

SCALE IN FEET
100 0 100 200

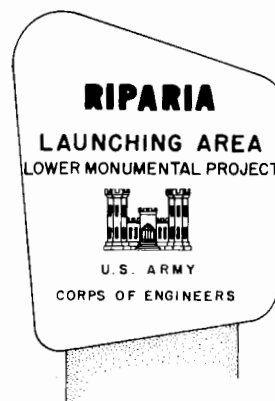
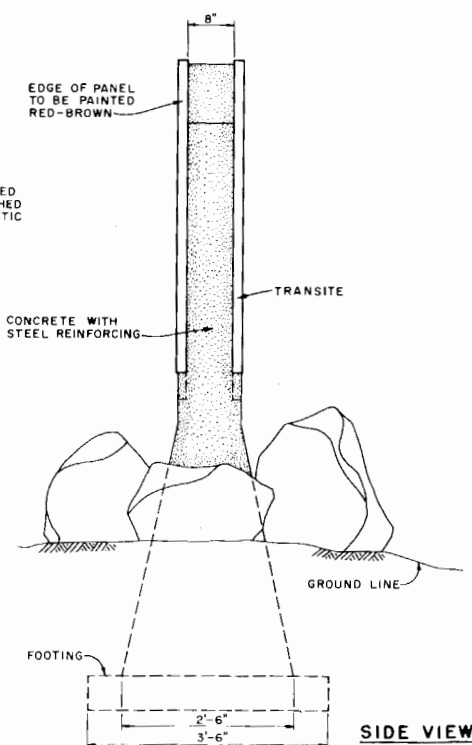
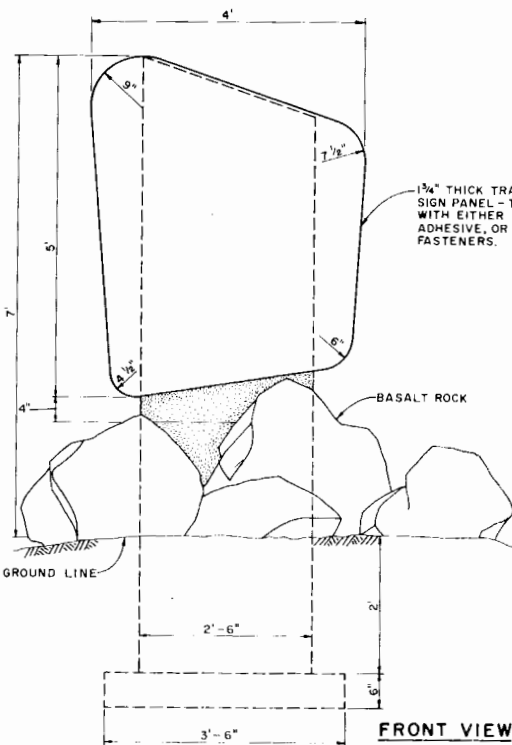
TEXAS RAPIDS AREA

SCALE IN FEET
100 0 100 200

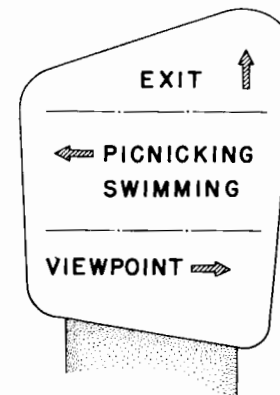
REVISION	DATE	DESCRIPTION	BY
U. S. ARMY ENGINEER DISTRICT WALLA WALLA, WASHINGTON			
MASTER PLAN DEVELOPMENT AND MANAGEMENT OF LOWER MONUMENTAL RESERVOIR, SNAKE RIVER, WASHINGTON TEXAS RAPIDS AND RIPARIA DEVELOPMENT PLANS			
DESIGNED: BCCB SJR	APPROVED: <i>[Signature]</i> DATE: 5 May 66		
DRAWN: B. Chapman	COLONEL C. E. DISTRICT ENGINEER		
CHECKED: S. J. R.	SCALE AS SHOWN INV. NO. ENG.		
SUPERVISED:	FILE NO.		
RECOMMENDED:	SHEET		



TYPICAL SIGN PANEL
ENTRANCE SIGN FOR MAJOR PARK AREAS AND ACCESS ROAD TO DAM



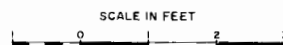
ENTRANCE SIGN FOR MINOR ACCESS AREA



DIRECTIONAL SIGNS

NOTE: ROUTED LETTERING TO BE BLACK, RED-BROWN, DARK GREEN

TYPICAL SIGN PANELS



REVISION	DATE	DESCRIPTION	BY
U. S. ARMY ENGINEER DISTRICT WALLA WALLA, WASHINGTON			
MASTER PLAN			
DEVELOPMENT AND MANAGEMENT OF LOWER MONUMENTAL RESERVOIR, SNAKE RIVER, WASHINGTON			
STANDARD DESIGN FOR SIGNS			
DESIGNED: TFS-SJR	APPROVED: <i>[Signature]</i> DATE: 2 May 68		
DRAWN: S. Tompkins	COLONEL, C. E. DISTRICT ENGINEER		
CHECKED: S.J.R.	SCALE AS SHOWN	INV. NO. ENG.	FILE NO.
SUPERVISED: <i>[Signature]</i>	CHIEF, PLANNING BRANCH		
RECOMMENDED: <i>[Signature]</i>	CHIEF, ENGINEERING DIVISION		
SHEET			LM-05-37/7

EXHIBITS

DANIEL J. EVANS
~~NOV 16 1965~~
GOVERNOR

COMMISSIONERS:
MRS. ELEANOR BERGER
CLAIR V. GREELEY
JOE W. HAMEL
JAMES B. HOVIS
HOWARD MARTIN
TED R. MCTIGHE
JAMES W. WHITTAKER



WASHINGTON STATE
PARKS & RECREATION COMMISSION

CHARLES H. ODEGAARD, DIRECTOR

522 SOUTH FRANKLIN

OLYMPIA, WASHINGTON 98502

PHONE 753-5755

November 15, 1965

District Engineer
Walla Walla District
U. S. Army Corps of Engineers
City-County Airport
Building 602
Walla Walla, Washington

EXHIBIT A

Dear Sir:

The Washington State Parks and Recreation Commission wishes to commend the Corps of Engineers on the Master Plan of Development on the Lower Monumental Dam Reservoir. By reviewing the land use plans it appears that adequate emphasis has been placed on outdoor recreation. We concur the site at Lyon's Ferry does have State Park potential. This site provides for additional and complimentary facilities for Palouse Falls State Park. The need for adequate ingress and egress as the new highway bridge is constructed will be a possible problem area. However, this can be worked out as the request for the locations are made.

The many sites along the reservoir will serve the boating public as well as the need for sites for those people wishing to follow along the Lewis and Clark Trail. It is our hope that these sites have been evaluated as to the proximity to actual camp site of the Lewis and Clark Expedition. It is also our hope that suitable facilities and appropriate interpretation can be provided.

The State Parks and Recreation Commission looks forward to a continued close relationship with the Corps of Engineers on this and other projects.

Very truly yours,

John A. Clark

JOHN A. CLARK, Supervisor
Planning and Development

JAC:sn

C O P Y

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
1001 N. E. Lloyd Blvd.
P. O. Box 2737
Portland 8, Oregon

EXHIBIT B

March 8, 1962

Colonel James H. Beddow, District Engineer
Walla Walla District, Corps of Engineers
Bldg. 602, City-County Airport
Walla Walla, Washington

Dear Colonel Beddow:

Reference is made to recent discussions between Mr. Bernard C. Christensen of your staff and representatives of our Bureau concerning our proposed Wildlife Management Units on Lower Monumental Lock and Dam project, Snake River, Washington.

The five units which we originally proposed are delineated on Plate II of our report on this project, dated September 1960. Mr. Christensen informed us that the Corps plans to acquire about one-third of Unit 1, essentially none of Unit 2, and all of Units 3, 4, and 5. He inquired whether or not we intended to pursue acquisition of lands proposed for Wildlife Management Units 1 and 2 by preparing a special Justification Report.

We have discussed cost of acquisition of the lands in question with members of your realty branch. We have also inspected and discussed the areas with field and staff representatives of Washington Department of Game. As a result of these discussions and investigations, we have concluded that we will not attempt to acquire lands outside the project taking line.

At the time our report was written, the project taking line had not yet been determined. In view of the fact that the taking line is now reasonably well established, we find that we can satisfy our needs within the project taking line if the following areas are made available to the Washington Department of Game for fish and wildlife management in accordance with a General Plan.

Unit One - Magallon

This unit would now include only those lands in the Magallon vicinity which would be acquired with the project. We feel that the downstream

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portion of project land, which has been designated as a public access area, should be designated for fish and wildlife, together with the upstream portion. Washington Department of Game would permit public access as a part of their management plan.

Unit Two - Ayer

This unit would be reduced to a narrow strip of project land fronting the reservoir for approximately one mile upstream from the proposed railroad switching yard and extending back about 300 feet to the flowage, erosion and relocation requirement boundary.

Unit Three - Lyons Ferry

Our land request in this unit will remain unchanged from that in our initial report.

Units Four and Five - Palouse and Tucannon Rivers

We request that the embayments which will form with the project at the mouths of the Palouse and Tucannon Rivers and those project lands adjoining the embayments be assigned to fish and wildlife. Requested project lands adjoining Palouse River Bay lie north of the railroad bridge which crosses the bay.

In addition, we propose that those project lands downstream from the mouth of Tucannon River to the west boundary of Section 29, T. 13 N., R. 37 E. be assigned to fish and wildlife. This request is made partially to compensate for reduction of the area in Unit 2 and partially as a safeguard for the valuable existing and potential fish population of Tucannon River. Since the Tucannon River is the only major tributary of the Snake River below Lewiston which can be developed to mitigate anadromous fish losses resulting from construction of the four lower Snake River dams, it is of great importance that lands near the mouth of the river and immediately downstream be managed in such a manner that the fish resources will not be adversely affected. We understand that the lands immediately downstream from those which we are requesting below the Tucannon River have been designated as a public access area. We do not anticipate that such use will conflict with fish and wildlife management in the Tucannon-Palouse area.

A map indicating the proposed fish and wildlife management lands in the Palouse-Tucannon vicinity is attached. All lands requested are shown except the small remaining strips in Units 1 and 2. To prevent obliteration of the reservoir boundary, the Palouse and Tucannon Bays were not cross-hatched to indicate fish and wildlife areas; however, we wish to make it clear that these bays are a part of the areas requested for assignment to the Washington Department of Game for fish and wildlife management.

C O P Y

EXHIBIT B

C O P Y

We further wish to emphasize that the lands and water which we have requested at and below the mouths of the Tucannon and Palouse Rivers are considered essential if any significant mitigation of fish and wildlife losses sustained with the project is to be achieved. We firmly believe that mitigation of fish and wildlife losses resulting from water resource development is as much in the public interest as the relocation of railroads and highways and should be treated accordingly.

We appreciate being kept informed of current developments in connection with your lower Snake River projects. This letter will confirm our present position in regard to our proposed Wildlife Management Units on Lower Monumental Lock and Dam project.

Sincerely yours,

J. T. BARNADY /s/
J. T. BARNADY /t/
Acting Regional Director

EXHIBIT B

Attachment (Map)

C O P Y

C O P Y

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
Federal Building
1002 N. E. Holladay Street
P. O. Box 3737
Portland, Oregon 97208
February 27, 1964

EXHIBIT C

Reference: RES

Your file: NPWG

District Engineer
Walla Walla District, Corps of Engineers
Building 602, City-County Airport
Walla Walla, Washington

Dear Sir:

This responds to Mr. B. C. Christensen's request for a statement of our current views and interests concerning wildlife management units proposed for mitigation of fish and wildlife losses on Lower Monumental Lock and Dam project, Snake River, Washington. This letter supplements the report of our Service on the project, dated September 1960, and refines a subsequent letter to you, dated March 8, 1962.

The following comments were prepared following discussions with personnel of the Washington Departments of Fisheries and Game. The Bureau of Commercial Fisheries is in agreement with the comments pertaining to fish resources.

We have reviewed a draft copy of your Design Memorandum No. 7A, Preliminary Master Plan, Part of the Master Plan for Lower Monumental Lock and Dam, Lower Snake River Project, Oregon, Washington, and Idaho, dated February 28, 1963, and are fully apprised of the conflict of interests concerning some of the proposed fish and wildlife areas.

Alterations from the requests for fish and wildlife management units contained in our letter of March 8, 1962 are:

Unit One - Magallon, Unit Two - Ayer-Rifton

We have no objection to the designation of the downstream portion (about 20 acres) of Unit One as a public access and general recreational area. The Washington Department of Game believes that the

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small isolated tracts in Units One and Two, which are designated for fish and wildlife use on your "Preliminary Master Plan Land Use Map," are too restricted to justify costs of farming operations required for intensive habitat development. However, the Department still desires administrative control of the remaining lands in these units provided that immediate development is not a requirement of the licensing agreement.

EXHIBIT C

Unit Three - Lyons Ferry

If, as our report recommended, this area is assigned to the Washington Department of Game for management to mitigate fish and wildlife losses, both initial development cost and operation and maintenance costs for the life of the project should be nonreimbursable project costs. Washington Department of Game has estimated that initial development costs would be \$58,800 and annual operation and maintenance costs would be \$10,000. If share-cropping is permitted, the annual operation and maintenance costs could be reduced to about \$3,000.

Unit Five - Tucannon River

We understand that only a narrow strip of land fronting the reservoir will be acquired in the block of land, located immediately downstream from the mouth of Tucannon River, requested in our letter of March 8, 1962. The Washington Department of Game is not interested in administering this strip; consequently, our request for this land is withdrawn.

We emphasize the value and necessity of a project-sponsored access road and boat launching facility to the Tucannon River unit. The lay will be a favored fishing location, and launching facilities at this site will be essential. We recommend that, as silting occurs in Tucannon Bay, your agency should conduct dredging operations as necessary to maintain an open channel adequate to allow unimpeded access to migratory fish to Tucannon River at all levels of Lower Monumental Reservoir.

We appreciate the opportunity to comment on your current planning for land use at Lower Monumental Reservoir. If you desire additional information, please contact Mr. J. Norvell Brown, Field Supervisor of our Spokane Area Office, Branch of River Basin Studies.

Sincerely yours,

PAUL T. QUICK /s/
PAUL T. QUICK /t/
Regional Director

C O P Y



UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

ADDRESS ONLY THE
REGIONAL DIRECTOR

FEDERAL BUILDING
1002 N. E. HOLLADAY STREET
P. O. Box 3737
PORTLAND, OREGON 97208

EXHIBIT D

Reference: RBS

November 1, 1965

District Engineer
Walla Walla District, Corps of Engineers
Building 602, City-County Airport
Walla Walla, Washington 99362

Your file:
NPWEN-PP
September 23, 1965

Dear Sir:

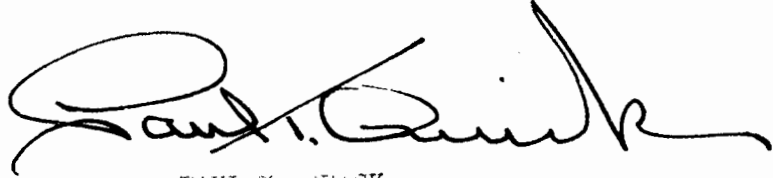
This replies to your request for our comments on your preliminary master plan and land-use map for Lower Monumental project.

The report of our Service on this project, dated September 1960, recommended five wildlife management units for mitigation of wildlife losses which will occur with the project. By letters dated March 8, 1962, and February 27, 1964, we have modified our original request to some extent by deleting from our request those lands which fall outside the project taking line. We have not changed our thinking since our February 27, 1964, letter to you.

We note that most of the area referred to as unit 3 in our report is assigned only interim fish and wildlife use on your preliminary master plan study map. We do not believe interim use of this land would be a satisfactory arrangement for mitigation of wildlife losses since it does not assure mitigation for the project life. Moreover, the temporary nature of this land-use classification would not permit expenditures for initial development and, consequently, would limit utilization of the area by fish and wildlife--even during the interim period. This interim-use notation as shown on your preliminary master plan study map implies a priority for industrial development that, in our opinion, is not warranted. We believe that mitigation of project-caused losses to fish and wildlife habitat

and populations should take precedence over such uses. While we would agree that enhancement of fish and wildlife should take its proper place among other enhancements made possible by the project (such as industrial development), enhancement is not the issue here--it is mitigation. It is our sincere hope that you will reconsider your plans for this particular area.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Paul H. Quirk". The signature is fluid and cursive, with a large initial "P" and a long, sweeping tail.

PAUL H. QUIRK
Regional Director

EXHIBIT D

Joint statement of Bureau of Sport Fisheries and Wildlife and Bureau of Commercial Fisheries of the U.S. Fish and Wildlife Service for presentation at public hearing on development and management of the land and water areas of Lower Monumental Reservoir to be held November 16, 1965, at Walla Walla, Washington

EXHIBIT E

My name is Norvell Brown. I represent the U.S. Fish and Wildlife Service. The conservation, development, and management of the Nation's fish and wildlife resources are the responsibility of the State conservation agencies and the United States Fish and Wildlife Service. Under the authority of the Fish and Wildlife Coordination Act of 1958 (48 Stat. 401, as amended; 16 U.S.C. et seq.), our Service, in cooperation with the Washington Department of Game, has conducted investigations of the effects which Lower Monumental project will have on fish and wildlife resources. Our detailed report, containing the results of these investigations, together with our recommendations, was released in September 1960.

For this hearing, you have requested our views on the plan for development and management of the land and water areas of your Lower Monumental lock and dam project. Our studies show that valuable waterfowl and upland-game habitat will be destroyed by this project. Big game and fur animals will also be adversely affected, although to a lesser extent. Significant waterfowl losses will result with elimination of shallow water zones and islands in the Snake River which provide nesting areas for Canada geese and resting habitat for migrant and wintering waterfowl.

The loss of these islands will not only cause a decrease in Canada goose production but will also result in reduced waterfowl hunting on adjacent areas in Franklin and Walla Walla Counties.

EXHIBIT E

Our 1960 report recommended five management units, some of which included lands outside the project take line, to mitigate wildlife losses which will occur with the project. Subsequently, we modified our original request by deleting those lands which fall outside the project take line.

The principal land area which we are now requesting consists of a flat, about 550 acres in size, located on the left bank of the Snake River immediately downstream from Lyons Ferry and which was identified as unit 3 in our 1960 report. We note that the Corps of Engineers land allocation map designates the major portion of this area for industrial use and access, with fish and wildlife as an interim use. We believe that it is inappropriate to give industrial use priority over fish and wildlife in this instance. The Corps of Engineers has defined industrial use and access areas on page 5 of their general information leaflet, and I quote: "These are areas of project lands not required for project operation, public recreational use or access, public port terminals, or fish and wildlife." The area under question is clearly required for mitigation of losses to fish and wildlife which will be caused by the project; yet most of this area has been assigned to industrial use and access--fish and wildlife has been given only interim use.

We do not believe that interim use of this area is a satisfactory arrangement for mitigating wildlife losses because it does not assure mitigation

for the economic life of the project. Moreover, the temporary nature of this land use classification would limit expenditures which otherwise would be made for optimum development of the area for fish and wildlife purposes. This would further restrict the utilization of the area by wildlife--even during the interim period. We believe that, in keeping with the intent of the Fish and Wildlife Coordination Act, mitigation of project-caused losses to fish and wildlife habitat and populations should take precedence over industrial uses. This would seem particularly true since mitigation of losses is the issue here--not enhancement. Therefore, we suggest that the Corps of Engineers revise their plans for the Lyons Ferry area and assign it permanently for fish and wildlife purposes. We also suggest that the area at the mouth of the Tucannon River which is presently designated as a public port terminal on the land allocation map be redesignated as a fish and wildlife area.

With development and management, these fish and wildlife areas will provide partial compensation for losses of waterfowl and upland-game habitat, and we urge that they be permanently assigned for this purpose. The Palouse and Tucannon River embayments will provide sport fishing opportunities in addition to a limited amount of waterfowl replacement habitat.

I appreciate the opportunity to present these matters here today and sincerely hope that the land areas discussed will be assigned permanent fish and wildlife tenure.

*Game Commissioners / Harold A. Pebbles, Chairman, Olympia
Arthur S. Coffin, Yakima; James H. Ralls, Wilson Creek;
Albert T. Prichard, Kalama; Claude Bekins, Seattle;
Edson Dow, Wenatchee*

Director of Game / John A. Biggs

State of Washington

DEPARTMENT OF GAME

600 North Capitol Way / Olympia, Washington 98502

October 8, 1965

Mr. Homer Johnstone
Major, CE
Deputy District Engineer
U. S. Army Engineer District
Walla Walla Corps of Engineers
Building 602, City-County Airport
Walla Walla, Washington 99263

EXHIBIT F

Dear Mr. Johnstone:

We have reviewed the preliminary land use map for the Lower Monumental Project provided by your office. Our thinking regarding the need for certain areas or comparable areas to mitigate wildlife losses has not changed since the Fish and Wildlife Resources Report was prepared and published September 1960. Recent comprehensive studies of the Lower Snake River indicate an even greater use of the area by wildlife and the public for hunting and fishing at this time.

The Wildlife Resources Report delineates five areas adjacent to the pool upon which concentrated management would be required to only partially replace the wildlife losses suffered as a result of Lower Monumental Lock and Dam Project. The preliminary land use map indicates four of these five areas have been reduced considerably in size, and Unit 3 - Lyon's Ferry - is designated for only interim wildlife use. With these reductions, wildlife losses cannot be replaced.

The Wildlife Coordination Act stipulates wildlife losses be mitigated. Therefore, we feel all the original five areas in their original size are required for wildlife. We cannot accept these reductions in area, but if other areas of equal size and wildlife value agreed upon by the wildlife agencies were provided elsewhere, we would then reconsider our position on this plan.

Mr. Homer Johnstone
October 8, 1965
Page Two

Inevitably, allotment of lands in project areas result in conflict of interest between industry and wildlife. We feel that mitigation for losses should be provided first, and only after such provisions should remaining project lands be allotted according to merit and demand for either wildlife or industrial use.

Very truly yours,

THE DEPARTMENT OF GAME



John A. Biggs, Director

JAB:DCB:bi

cc: Mr. Ralph W. Larson, Chief
Applied Research Division
Mr. Jack Kirkendall, Supervisor
District Number Three
Mr. Ken Black, Regional Supervisor
River Basin Studies
Mr. Wendell Oliver, Biologist
Applied Research Division

EXHIBIT F

*Game Commissioners / Harold A. Pebbles, Chairman, Olympia
Arthur S. Coffin, Yakima; James H. Ralls, Wilson Creek;
Albert T. Prichard, Kalama; Claude Bekins, Seattle;
Edson Dow, Wenatchee*

Director of Game / John A. Biggs

State of Washington

DEPARTMENT OF GAME

600 North Capitol Way / Olympia, Washington 98502

November 12, 1965

Statement - Washington State Game Department, Submitted to Corps of Engineers, Walla Walla, Washington, November 16, 1965, concerning Allotment of Lands - Lower Monumental Project

Mr. Homer Johnstone
Major, CE
Deputy District Engineer
U. S. Army Engineer District
Walla Walla Corps of Engineers
Building 602, City-County Airport
Walla Walla, Washington 99263

EXHIBIT G

Dear Mr. Johnstone:

The Fish and Wildlife Coordination Act stipulates that wildlife losses resulting from water development projects be mitigated. Lower Monumental Lock and Dam Project will eliminate considerable wildlife habitat important to upland game, waterfowl, big game and furbearing animals.

The Fish and Wildlife Resources Report of 1960 summarized wildlife studies made by the Bureau of Sport Fishery and Wildlife and the Washington Department of Game in the Lower Monumental Project area. This report delineates five areas adjacent to Lower Monumental pool that could be managed for mitigation of wildlife losses with the project. Subsequent to the 1960 report, by letter it was requested that development and annual operational and maintenance costs be provided for improvement of the area delineated as Unit Number Three, in order that wildlife habitat at least be partially replaced.

In reviewing the preliminary land-use map for the Lower Monumental project, it is obvious that replacement of wildlife losses has not been given due consideration. Wildlife Management Units One (Magallon), Two (Ayer) and Five (Tucannon) have been reduced drastically in size. Wildlife Management Unit Three is designated for "wildlife interim use." With these areas reduced beyond their original size, management is not feasible. Therefore, mitigation of wildlife losses cannot be satisfied.

More detailed fish and wildlife studies in the Lower Monumental Project area have been accomplished since the original resources report of 1960. These studies involved ground census, aerial surveys and hunter questionnaires. In 1964, a typical wildlife year, a total of 2,630 man-days of hunting were provided in habitat that will be eliminated with the project. A total of 2,047 game birds and 34 deer were taken by hunters in these areas. In addition, 5,958 man-days of steelhead fishing yielded a catch of 1,662 steelhead in this area of the Snake River.

Mr. Homer Johnstone
November 12, 1965
Page Two

According to the recently-updated wildlife economic and recreation survey carried out by the Department of Game and Consulting Services Corporation, people of the State of Washington spent 20 million days in direct use of the state's wildlife resources in 1964. As a result of the managed fish and wildlife supply available to them, they spend over 100 million dollars annually. Hunting and fishing is one of the leading industries of the state.

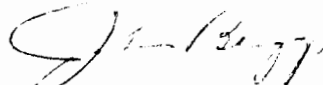
Based on the results of this survey, we further conclude that expenses of hunters utilizing the Lower Monumental Project area in 1964 were \$27,451.00. Fishermen spent an additional \$22,015.00. These expenditures (\$49,466.00) are of direct economic benefit to surrounding communities.

Washington is the smallest of the eleven western states in land area, and second in population. The continuing loss of wildlife habitat makes it more and more difficult to meet the growing demands of hunters and fishermen. Inevitably, habitat is lost due to industrial development since lands along watercourses that are good for wildlife are also desirable for industry. Therefore, the allotment of lands in project areas result in conflict of interest between industry and wildlife. We feel strongly, however, that mitigation for losses should be provided first, and only after such provisions are made should remaining project lands be allotted according to merit and demand for either wildlife or industrial use.

The wildlife lands, as indicated by the land-use map for Lower Monumental Project, are unworkable for wildlife management. Should our original request for mitigation lands and development within the project areas be denied, we propose that off-project lands be provided as replacement for wildlife losses incurred with the project.

Very truly yours,

THE DEPARTMENT OF GAME


John A. Biggs, Director

JAB:bi

EXHIBIT G

PORT OF WALLA WALLA

W. D. RAY, President • BENJAMIN B. FLATHERS, Vice President • HENRY GARBE, Secretary

P. O. BOX 1077 • AREA CODE 509 • JA 5-3100
29 EAST SUMACH • WALLA WALLA, WASHINGTON 99362

November 15, 1965

Col. Frank D. McElwee
District Engineer
Corps of Engineers
Bldg. 602, City County Airport
Walla Walla, Washington

EXHIBIT H

Gentlemen:

Subject: Land Allocation on Lower Monumental Pool

Gentlemen:

The Port of Walla Walla wishes to express its appreciation for the fine cooperation that we have received from all levels of the Corps of Engineers, Walla Walla District, in forming an opinion as to the land use allocation on the Snake River just downstream from the Joso Bridge on Lower Monumental Reservoir.

The Port has reviewed the plans that you have submitted showing the land use of this area. We are always apprehensive that an imbalance may occur between industrial and other uses for project lands when we are trying to determine what should be done this far in advance of actual needs. We of the Port recognize that in all probability the land uses that you have suggested will cause no embarrassment to anyone during the tenure of office of the Port Commissioners but do feel that we have an obligation to safeguard, so far as is possible and reasonable, the rights for subject lands for industrial purposes in the years that lie ahead.

It is believed by the Walla Walla Port Commission that the plans you have submitted are acceptable providing it is clearly understood that that portion under discussion in the Corps letter of November 9 is classified as industrial but could be made available for wildlife use on an interum basis. It is the feeling of the Port that this license should be drawn for a twenty year period with the provision that the Port could recall it in less than that time if they had a sound

Col. Frank McElwee

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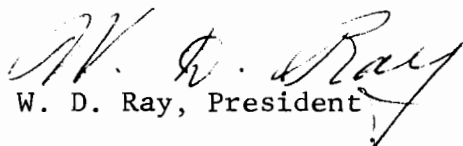
November 15, 1965

industrial use for it. It is the Port's belief that any improvements made on this land by the wildlife service should be fully amortized during the twenty year license agreement. We agree, however, that should the Port request the termination of this licensing agreement in less than the twenty years that the industrial users or the Port should probably reimburse the wildlife service for that portion of the investment that has not been amortized during that twenty year license.

It has been a privilege for the Commissioners of the Walla Walla Port District to work with the Corps of Engineers in planning the future needs for the land under discussion and sincerely hope that our efforts have been understood by the Corps.

Very truly yours,

PORT OF WALLA WALLA


W. D. Ray, President

WDR:dgh

EXHIBIT H