

MILL CREEK

Mill Creek



SUMMARY

ENVIRONMENTAL IMPACT STATEMENT

MILL CREEK PROJECT

() Draft

(X) Final Environmental Statement

Responsible Office: District Engineer, U. S. Army Engineer District, Walla Walla, Bldg. 602, City-County Airport, Walla Walla, Washington 99362
Telephone: 509-525-5500.

1. Name of Action: (X) Administrative () Legislative

2. Description of Action: The proposed action consists of the operation and maintenance of a diversion dam, off-channel storage reservoir, and surrounding lands. The diversion dam is located on Mill Creek, a tributary of the Walla Walla River, three miles east of the City of Walla Walla, Walla Walla County, Washington. The project has operated within its designated flood control capacity since 1942 and has also provided recreational space for the local community. Proposed action includes rehabilitation of a return outlet to Mill Creek by replacement of an abandoned open canal with buried pipe conduit, and raising of a portion of the diversion dam embankment, as well as continued project operation.

3.a. Environmental Impacts: The impacts considered are those of the continuing operation and maintenance of the project. The reduction of flood threat to the City of Walla Walla is the primary impact. The diverse habitat found within the project area supports an abundance of terrestrial wildlife. The return outlet will allow water to be evacuated from the reservoir at a more rapid rate, lessening present adverse impacts. The embankment raising will increase the safety of the diversion dam operation.

3.b. Adverse Environmental Impacts: Percolation through the reservoir bottom when floodwaters are retained may contribute to a rise in the groundwater in an adjacent watershed. The water quality of the reservoir is poor, due to high turbidity, causing impoundment productivity to be low and a degradation of aesthetics in the reservoir area. Construction disruption will occur during rehabilitation of the outlet canal to Mill Creek and during embankment raising.

4. Alternatives: Abandonment of the project or discontinuance of the flood control operations would control the seepage problem and lessen the high turbidity. Alternatives to the return pipeline rehabilitation include: (1) less frequent diversion of floodwaters into the reservoir; (2) enlargement of an adjacent creek system which is now the sole receiver for reservoir releases, and (3) use of a concrete-lined, trapezoidal channel in lieu of pipe conduit.

5.a. Comments Requested: City of Walla Walla, Walla Walla County, Walla Walla Flood Control District, Blue Mountain Audubon Society, Walla Walla Union-Bulletin, Washington Environmental Council, Washington State Clearinghouse, Soil Conservation Service, U. S. Environmental Protection Agency, U. S. Department of Commerce, U. S. Department of the Interior, National Oceanic and Atmospheric Administration, Pacific Northwest River Basins Commission, Tri-State Steelheaders.

5.b. Comments Received: City of Walla Walla, Washington State Department of Fisheries, Washington State Parks and Recreation Commission, Washington State Department of Natural Resources, Washington State Department of Game, Washington State Highway Commission, Washington State Department of Ecology, Washington State Department of Commerce and Economic Development, U. S. Department of the Interior, U. S. Department of Agriculture, U. S. Environmental Protection Agency.

6. Draft Statement to Council on Environmental Quality: 12 April 1974.

Final Statement to Council on Environmental Quality: 26 NOV 1975

ENVIRONMENTAL IMPACT STATEMENT
MILL CREEK PROJECT
WALLA WALLA, WASHINGTON

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PREFACE

The National Environmental Policy Act of 1969 requires that Environmental Impact Statements be prepared for proposed Federal actions which significantly affect the environment. In keeping with the guidance, this Impact Statement has been prepared for the proposed continued operation, maintenance, and improvement of the Mill Creek Flood Control Project.

Although the project has been in operation for many years, it is important to identify the environmental resources considered in current and future activities which are part of Mill Creek project management.

The cover photograph shows the March 1931 Mill Creek flood in downtown Walla Walla.

JUNE 1975

MILL CREEK PROJECT

WALLA WALLA, WASHINGTON

FINAL ENVIRONMENTAL IMPACT STATEMENT

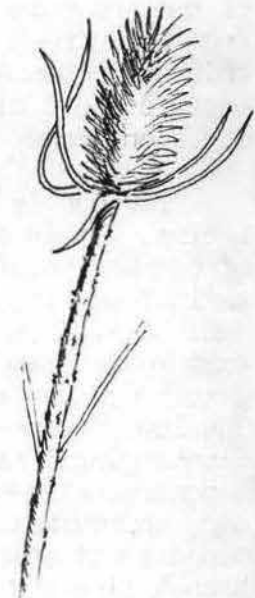
U. S. ARMY ENGINEER DISTRICT, WALLA WALLA
WALLA WALLA, WASHINGTON

The Mill Creek Flood Control Project was authorized by the Flood Control Act of 28 June 1938, Public Law 761, 75th Congress, Third Session, amended by the Flood Control Act of 18 August 1941, Public Law 223, 77th Congress, First Session. The project is located in Walla Walla County in South-eastern Washington and serves Mill Creek, which is a tributary of the Walla Walla River. The authorized project has two basic physical parts. One is a stabilized channel* extending nearly seven miles along the main course of Mill Creek; the lower six-mile portion of this channel runs through the city of Walla Walla and is under the jurisdiction of the Walla Walla Flood Control District. Operation and maintenance of this portion are not dealt with in this Statement. The second part of the Flood Control Project, operated by the U. S. Army Engineer District, Walla Walla, is a diversion dam, off-stream reservoir, and associated works, located three miles east of the city of Walla Walla. The authorized purpose of the project is to control flood waters of Mill Creek. In addition, a day-use park, hunting lands, and related recreation facilities have been developed under authority of Section 4, Flood Control Act of 1944, as amended. The map on the following page shows the land use aspects of the project.

one.....

project description

The project contains a total of 623 acres. Most of these lands are utilized for year-round public recreation - picnicking, hiking, fishing, hunting, horseback riding - and are managed with regard to wildlife habitat. The area adjacent to the north side of Mill Creek is Rooks Park, well maintained by the Corps of Engineers, with picnic tables, fireplaces, restrooms, and potable water well. Of the total public space, 380 acres are managed by the Washington State Department of Game for hunting and fishing under a license from the Corps of Engineers.



* A stabilized channel is a river channel which has been altered by man to confine the flow within set boundaries. The maintenance of a stabilized channel rules out the possibility of the river forming any cutbanks, meanders, or ox-bows, such as would be found in a wild, natural, or unaltered river.

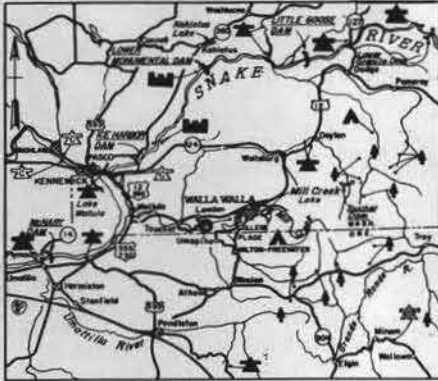
The reservoir* and its associated works were completed and placed in operation in 1942. The project was designed to protect the City of Walla Walla and is presently operated to give as much protection from floods as possible to river reaches below Walla Walla, without endangering the city of Walla Walla. The storage space in the reservoir is reserved expressly to detain high flood flows for later controlled release after the flood peak. It was originally designed to remain dry except during flood storage periods. However, since 1953, a summer conservation pool containing a minimum of 866 acre-feet of water has been maintained for recreational fishing purposes.

Three associated structures are maintained by the Federal Government with respect to flood control at the Mill Creek site: (1) an off-channel storage dam and reservoir with capacity of 8,200 acre-feet, (2) a flood-flow diversion dam with canal headworks on Mill Creek which controls flows into the reservoir through a partially concrete-line channel, and (3) irrigation diversion and division works located approximately one mile downstream from the flood-flow diversion dam. The diversion works consist of two separate division control structures; the first diverting flows from Mill Creek into a short side channel, the second dividing flows in this side channel between Yellowhawk and Garrison Creeks. The maps on pages 3 and 5 diagram the physical association of the two dams and the division works.

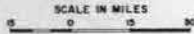
The dam is a homogeneous earth structure with a protective rock facing. It is founded on a layer of loess-like silt, with an underlayer of coarse, pervious, sandy gravels. The present outlet facility is an inclined intake with a slide gate control on the upstream side of the dam. A 42-inch-diameter conduit extending through the base of the dam embankment branches into a 36-inch-diameter conduit extending to a lower gate house and a 30-inch-diameter conduit going to the upper gate house. The lower branch line is controlled by a Howell-Bunger valve capable of discharging a maximum flow of 240 cfs, at reservoir elevation 1,257.5, into a concrete-lined canal which empties into the nearby Russell Creek drainage, approximately 1½ miles downstream from the dam. The entire reservoir capacity of approximately 6,000 acre-feet can be released through this branch line and canal.

The upper discharge line was originally designed to carry a flow of about 100 cfs into an unlined canal which returns directly back to Mill Creek. The upstream invert of that canal is at Elevation 1,212. The canal washed out during initial reservoir test filling in November 1941 and was abandoned and replaced by exclusive use of the present Russell Creek release route.

* The words reservoir, lake, and pool may be used interchangeably in this statement, and all refer to the body of water contained by the storage dam.

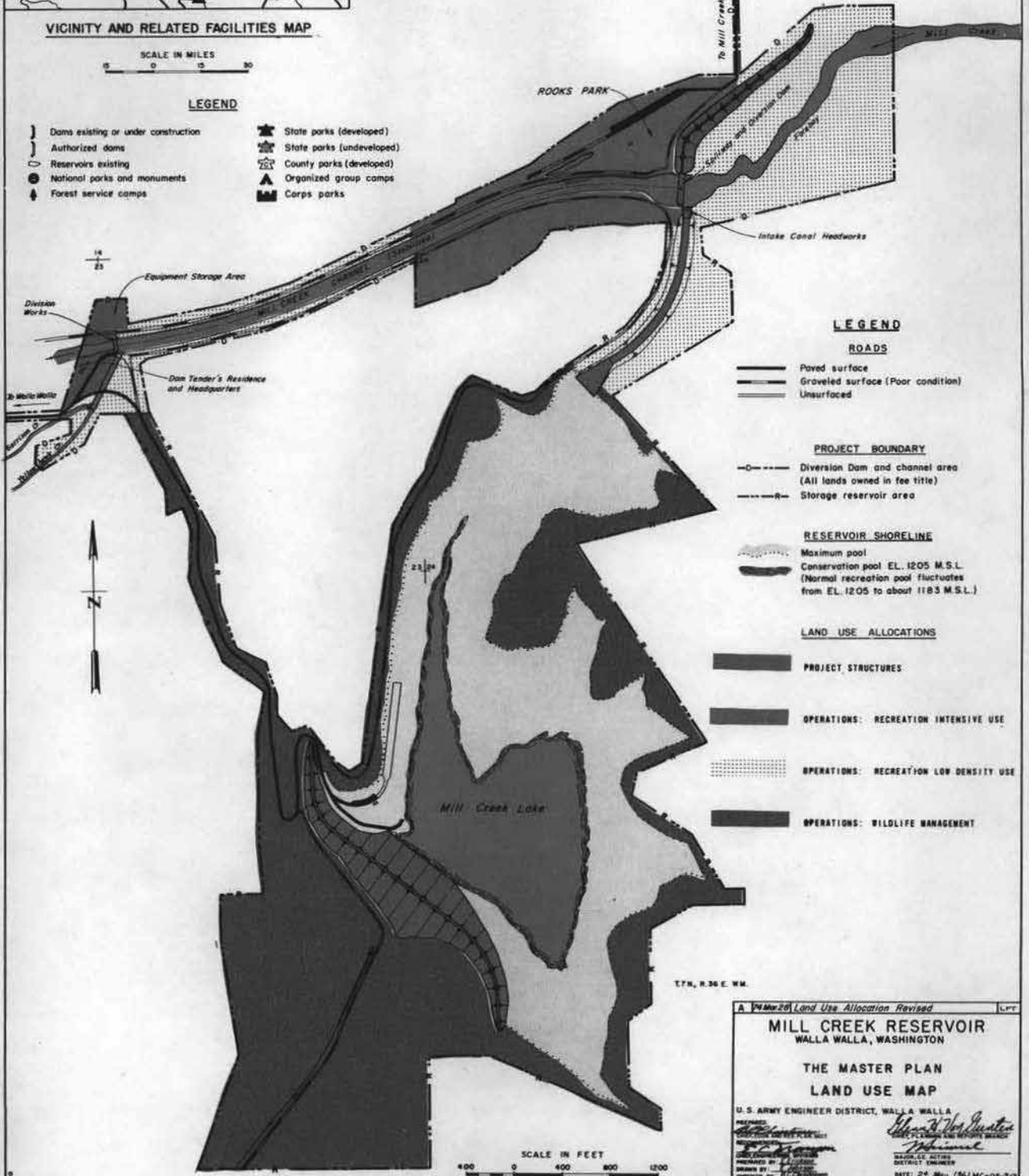


VICINITY AND RELATED FACILITIES MAP



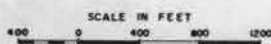
LEGEND

- | | |
|---------------------------------------|-----------------------------|
| ⌋ Dams existing or under construction | ★ State parks (developed) |
| ⌋ Authorized dams | ★ State parks (undeveloped) |
| ○ Reservoirs existing | ⊞ County parks (developed) |
| ⊙ National parks and monuments | ▲ Organized group camps |
| ⚡ Forest service camps | ■ Corps parks |



LEGEND

- ROADS**
- Paved surface
 - - - Graveled surface (Poor condition)
 - Unsurfaced
- PROJECT BOUNDARY**
- - - Diversion Dam and channel area (All lands owned in fee title)
 - - - Storage reservoir area
- RESERVOIR SHORELINE**
- ⋯ Maximum pool
 - Conservation pool EL. 1205 M.S.L. (Normal recreation pool fluctuates from EL. 1205 to about 1183 M.S.L.)
- LAND USE ALLOCATIONS**
- PROJECT STRUCTURES
 - OPERATIONS: RECREATION INTENSIVE USE
 - ⊞ OPERATIONS: RECREATION LOW DENSITY USE
 - OPERATIONS: WILDLIFE MANAGEMENT



T7N, R36E, W4

A 1961 Land Use Allocation Revised

MILL CREEK RESERVOIR
WALLA WALLA, WASHINGTON

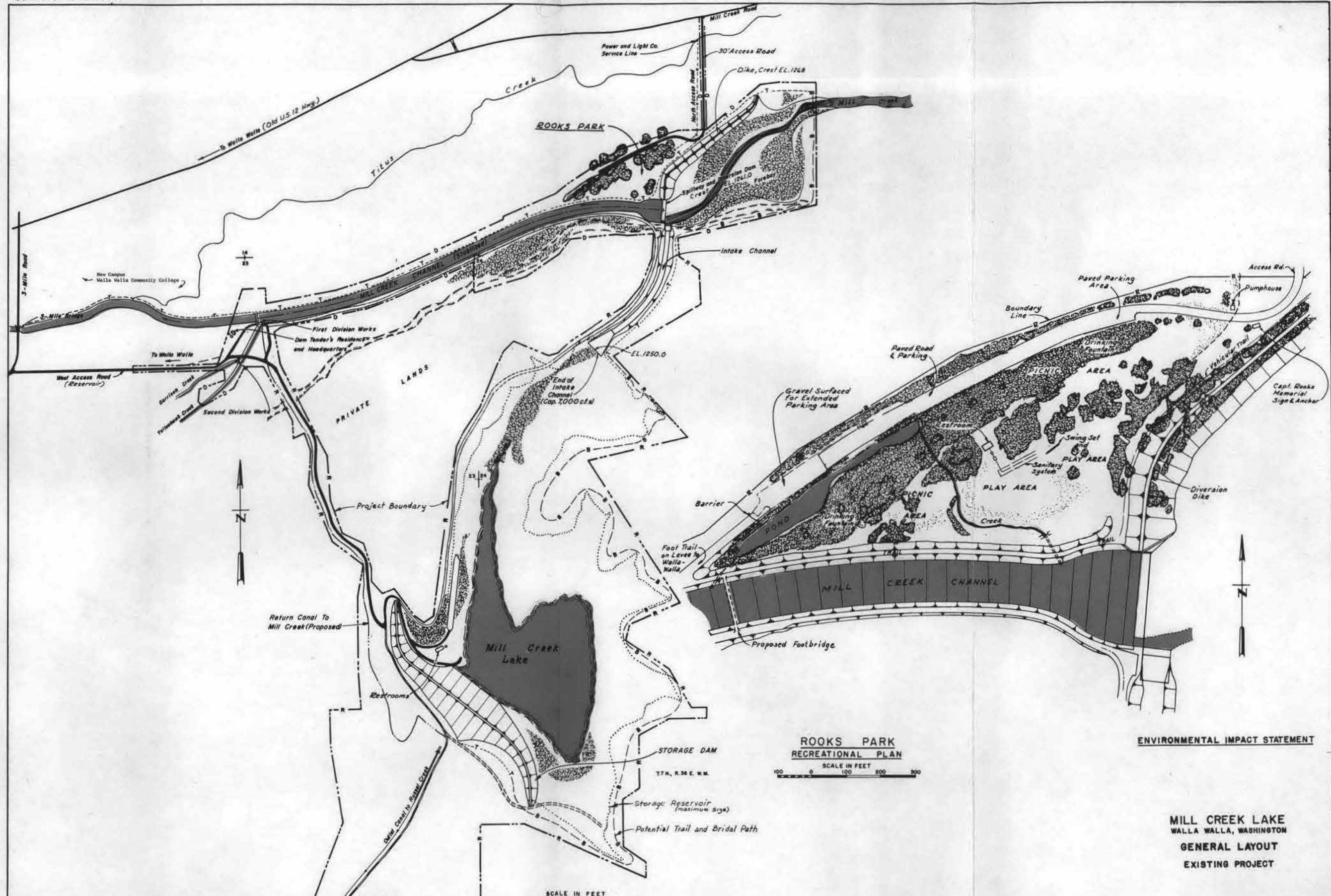
THE MASTER PLAN
LAND USE MAP

U.S. ARMY ENGINEER DISTRICT, WALLA WALLA

DESIGNED BY: [Signature]
CHECKED BY: [Signature]

DISTRICT ENGINEER

DATE: 29 May 1961 MC-05-77



ROOKS PARK RECREATIONAL PLAN

SCALE IN FEET
100 0 100 200 300

ENVIRONMENTAL IMPACT STATEMENT

**MILL CREEK LAKE
WALLA WALLA, WASHINGTON
GENERAL LAYOUT
EXISTING PROJECT**

This means of evacuating stored floodwaters has proven inadequate. The Russell Creek outlet is a tributary of the Walla Walla River and is naturally separated from the Mill Creek drainage. Flows in Russell Creek are usually high at the same time project releases must be made. Groundwater levels around Russell Creek are also high at this time, and occasional groundwater problems occur in the basements of houses adjacent to Russell Creek. The increased water load from reservoir releases adds to erosion of the Russell Creek channel. The originally determined channel capacity has been restricted by encroachment from buildings, the dumping of refuse, and weed and shrub growth in the channel. It is mandatory for the safety of the dam not to maintain a reservoir elevation above 1,235 for more than 15 days. If only the Russell Creek drainage route is used, the reservoir, when nearly full, cannot be emptied in this time period.

Rehabilitation of the abandoned return canal for the purpose of improving operation of the flood control project, as well as continued maintenance of existing flood control and recreational operations, comprise the proposed action of this project. The increasing development by homeowners along Russell Creek and the lack of adequate downstream capacity to safely release stored floodwaters from Mill Creek Reservoir make the need for an adequate return outlet significant.

The proposed plan of rehabilitating the outlet return canal to Mill Creek consists of partial replacement of the discharge line to the upper valve house with a pipe of larger diameter, a gravity pipeline, pipe drop, and stilling basin. The gravity line will carry a maximum discharge of 190 cfs. The existing structure that included the original outlet valve house will be modified to act as an impact dissipator. A new, 42-inch-diameter steel pipe will replace the existing 30-inch-diameter line and will discharge into the existing valve house. The valve unit will be removed and the remaining 30-inch-diameter pipe will be plugged. The discharge from the reservoir will be controlled by the intake slide gate on the upstream side of the dam. From the upper valve house, the flow will be carried by a 72-inch-diameter, asphalt-lined, corrugated metal pipe on a slope of .003. Further downstream, the slope and energy will increase sufficiently to permit the pipe size to be reduced to 54 inches in diameter. From the 54-inch-diameter pipe, water will discharge into a concrete stilling basin and then into two 54-inch-diameter, asphalt-lined, corrugated metal pipes flowing into Mill Creek. The pipes will be designed for full flow at the design discharge. This will allow for evacuation from pool elevation 1,257.5 to elevation 1,235 in approximately 13 days at a maximum discharge of 190 cfs. By using concurrent discharges of lower conduit to Russell Creek, evacuation time could be cut to approximately ten days.

The foundation for the proposed return outlet conduit will consist of a deep section of silt. The silts are highly prone to erosion, as demonstrated by the early failure of the original unlined return outlet. Surface runoff from adjacent high ground also produces severe erosion along natural gullies, so provisions to protect the proposed outlet conduit from damage due to side-drainage erosion will be necessary.

Further downstream, the outlet alignment crosses the Mill Creek flood plain, which is comprised of alluvial silts and silt-sand-gravel mixtures overlying coarse, sandy gravels and cobbles. Basalt bedrock occurs beneath these alluvial materials at depths varying from four feet to 26 feet. The lower flood plain area has been reworked by natural stream erosion, as well as road, levee, and irrigation ditch construction, and materials can be expected to vary considerably. The water table in the flood plain area is about 15 feet below ground surface, as indicated by local wells.

The foundation grade for the proposed stilling basin structure will be silty, sandy gravel. The normal water table is deeper than the footing grade, but uplift to elevation 1,175 can be expected under the worst conditions of precipitation and saturation. The foundation gravels can be expected to contain sufficient silt and fine sand to reduce drainage effectiveness, so a bedding layer of clean, free-draining gravel or crushed rock will be provided where drainage is required at structures.

The anchor block will be subjected to lateral thrust from the static head of 120 feet and a flow of 190 cfs to the outlet valve house. The block will be designed to resist overturning and sliding due to those loads.

The stilling basin will be designed as a U-shaped channel (cross-section); the walls will be of cantilever type to support backfill (channel empty condition), or to support full hydrostatic load (channel full condition). The floor slab will be designed to resist foundation pressures and minor uplift forces.

Under the proposed plan, buried pipe conduit will replace the open canal. Once the conduit is in place, it will be covered with soil and the disturbed area replanted with grass and/or shrubs. Since much of the conduit will be placed along the existing canal alignment, the final result will be a filling of the canal and establishment of a vegetative cover over it. The borrow material that will be needed to help cover the conduit and fill the canal may be obtained from the sediment delta that has formed behind the diversion dam on Mill Creek which regulates the flow into the storage reservoir.

In order to provide further flood protection to downtown Walla Walla, funds have been appropriated to raise the levee above the diversion dam to elevation 1,280 in Fiscal Year 1976. This may involve some land acquisition. The dam was recently raised temporarily from the original elevation of 1,268 to elevation 1,272.

Continued operation plans and improvements for the recreational facilities tentatively include the following items, hopefully to be completed within the near future.

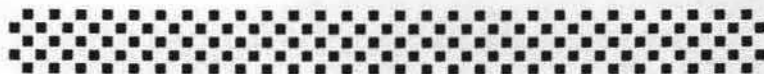
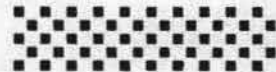
- a. Improve small pond area in Rooks Park.
- b. Improve and extend trail, plant trees, and install benches.
- c. Install rail fence around part of Rooks Park.
- d. Continue expansion of park irrigation system.
- e. Build footbridge over Mill Creek. This footbridge will be constructed so as not to obstruct flows.
- f. Add miscellaneous playground equipment, tables, and grills.

Total Federal expenditure for the whole project up to 1972 was \$2,230,601 for new work and \$1,321,572 for maintenance.

Additional pertinent data describing the existing project can be found in Appendix 1.



Caretaker's (damtender's) residence and headquarters.
These buildings are part of the Mill Creek project.



As the project has been on the site for over 30 years, the environmental setting discussed here is the current setting of the project lands, and the impacts considered in the following section are those of proposed modifications and continued operation of the project.

two.....

environmental setting

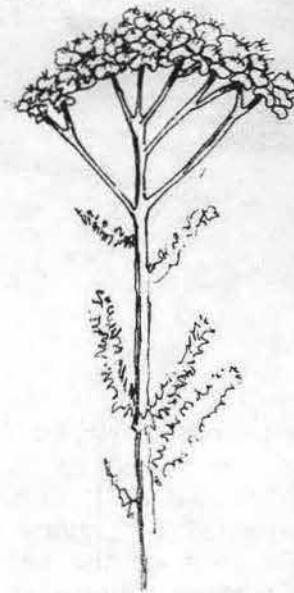
THE LOCAL REGION

The Walla Walla Valley is an agricultural region with a diversity of growing conditions due to variations in altitude, rainfall, and soil mantle. The growing season averages 200 days. Of the 822,729 acres comprising the county, 540,248 are tillable, with approximately 60,000 under irrigation. The major crops are wheat, peas, alfalfa hay and seed, potatoes, sugar beets, grapes, and onions. Lumber is harvested from the foothills of the Blue Mountains.

Walla Walla, with 23,619 residents (1970) is a commercial and population center in Southeastern Washington. Food processing industries, the Washington State Penitentiary, and three colleges are located in the immediate area. The principal roads serving the city are U. S. Highway 12 and Washington State Highway 125.

TOPOGRAPHY

Mill Creek, about 37 miles long, drains an area of 165 square miles situated between the Walla Walla and Touchet River watersheds. The creek crosses Columbia and Walla Walla Counties in Southeastern Washington and Umatilla County in North-eastern Oregon. Originating on the western slopes of the Blue Mountains at an elevation of 5,500 feet, the creek flows for 15 miles in a relatively deep and narrow canyon through mountainous terrain before entering an alluvial plain a few





Mill Creek storage dam and lake

miles east of Walla Walla. Mill Creek joins the Walla Walla River six miles southwest of Walla Walla. The project diversion dam and spillway are located at Mill Creek River Mile 11.5, where the creek has drained an area of 87 square miles. The elevations of the watershed range from 5,500 feet at the headwaters to 590 feet at the mouth of Mill Creek. The project diversion dam is located at elevation 1,261. The mean elevation of the basin upstream from the diversion dam is 3,200 feet. The headwaters region lies within the boundaries of the Umatilla National Forest on the forested slopes of the mountains. The lower reaches of the creek cross rolling prairie lands utilized for farming or grazing.

GEOLOGY

The mountainous reaches of Mill Creek are in the northern extension of the Blue Mountains. This area is largely a tilted, folded, and faulted uplift of the Columbia River basalt. Areas have been subjected to differential internal pressures which have resulted in block uplifts; bending of lava flows; readjustments of lava bed slopes; and vertical, sloping, or horizontal displacements of various lava beds caused by movement along fractures and joints in the basalt. The lower creek flows through the upper eastern edge of the central Columbia Basin, an area of rolling, treeless upland. The predominant surface soil type consists of windborne deposits of silt loam, with alluvial deposits of gravel in and along existing drainage routes.

Deposits of silt and gravel at the mouth of Mill Creek Canyon have resulted in an alluvial fan which is about two miles wide and five miles long. The canyon sits at about elevation 1,200 mean sea level (msl), while the lower edge of the fan has an approximate elevation of 900 feet. The city of Walla Walla is located on this fan.

CLIMATE

The climate of the Mill Creek area is predominantly dry and is characterized by wide seasonal variations in temperature, as well as wide geographical differences in precipitation. The average afternoon temperature in Walla Walla in the summer is near 90 degrees Fahrenheit, with nighttime temperatures in the 60's or 70's. In the winter, average afternoon temperatures are in the 30's or 40's, with minimum temperatures between 15 and 25 degrees Fahrenheit. The maximum and minimum recorded temperatures at Walla Walla are 113 and -16 degrees Fahrenheit. Precipitation ranges from about 14 to 18 inches near Walla Walla to 40 or more inches along the slope of the Blue Mountains. Most precipitation falls in the winter months, reaching a peak in mid-winter. In Walla Walla, approximately 10 percent of the normal annual precipitation falls as snow. This percentage increases to approximately 40 percent at elevations near 5,000 feet. The normal annual precipitation for the basin above the diversion dam is estimated at 36 inches. Average wind speeds are between five and six miles per hour, most frequently blowing in a south or south-westerly direction.

The relatively mild winters and hot summers allow an average growing season of 200 days; the average frost-free period normally extending from April through October.

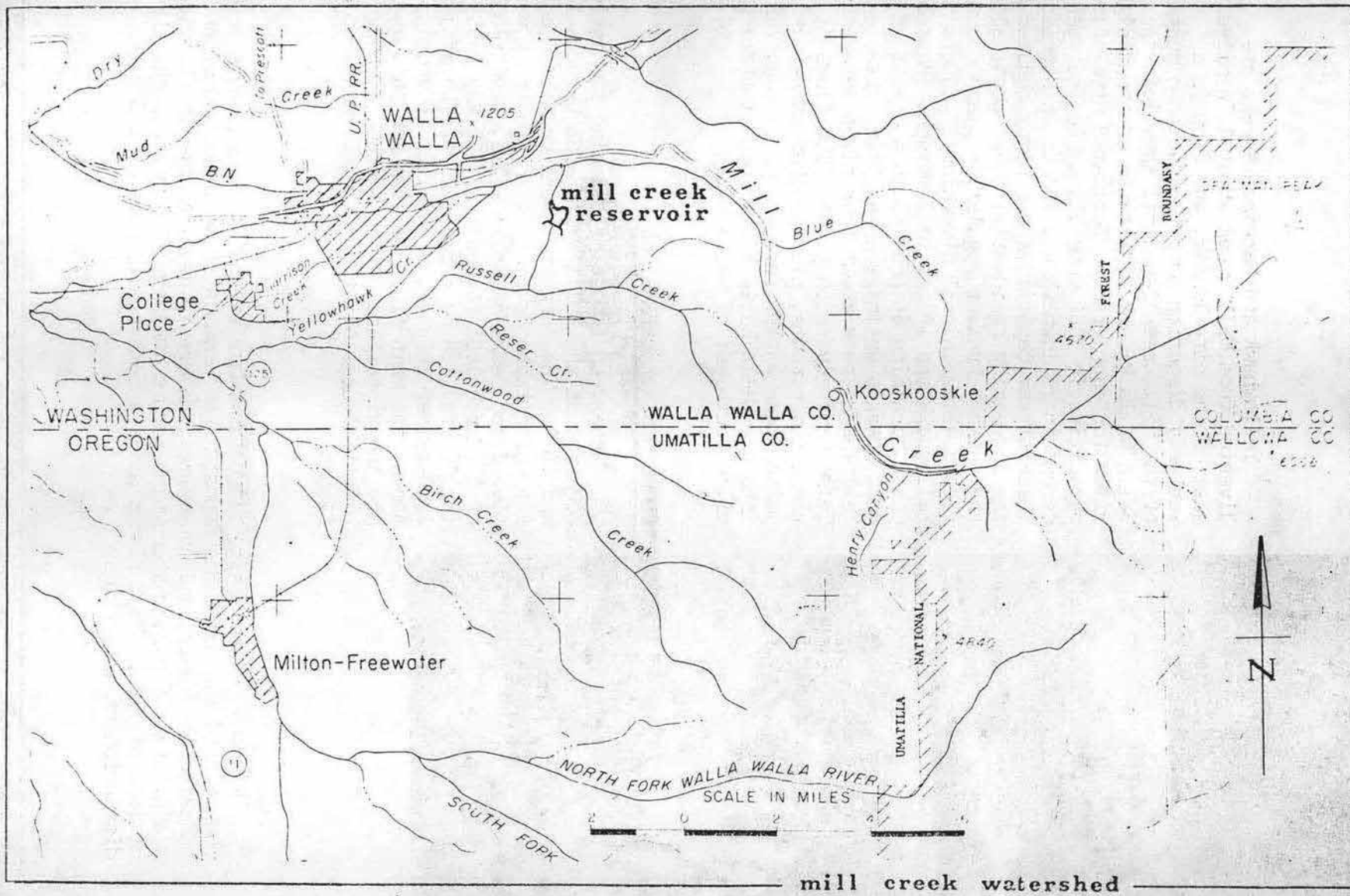
STREAMFLOW CHARACTERISTICS

For the 87 square miles of drainage above the diversion dam, the mean annual runoff is 82,200 acre-feet. This supply has varied in individual years from 37,600 acre-feet to 132,100 acre-feet. Flows in Mill Creek are generally low July through October and high during the winter and spring months. The high flows can be caused by intensive rainstorms, excessive snowmelt, or a combination of rainfall and snowmelt. Usual snowmelt, commonly occurring from the first of March through May, does not result in damaging quantities of runoff (snowmelt plus rainfall); a representative 14-year average for the amount of runoff from April through July is 25,000 acre-feet. Floods of damaging proportions are usually the result of intense rainfall occurring when the soil moisture content is high. Above the diversion dam, Mill Creek falls with an average slope of 72 feet per mile. Below Walla Walla, the stream falls with an average slope of 40 feet per mile.¹

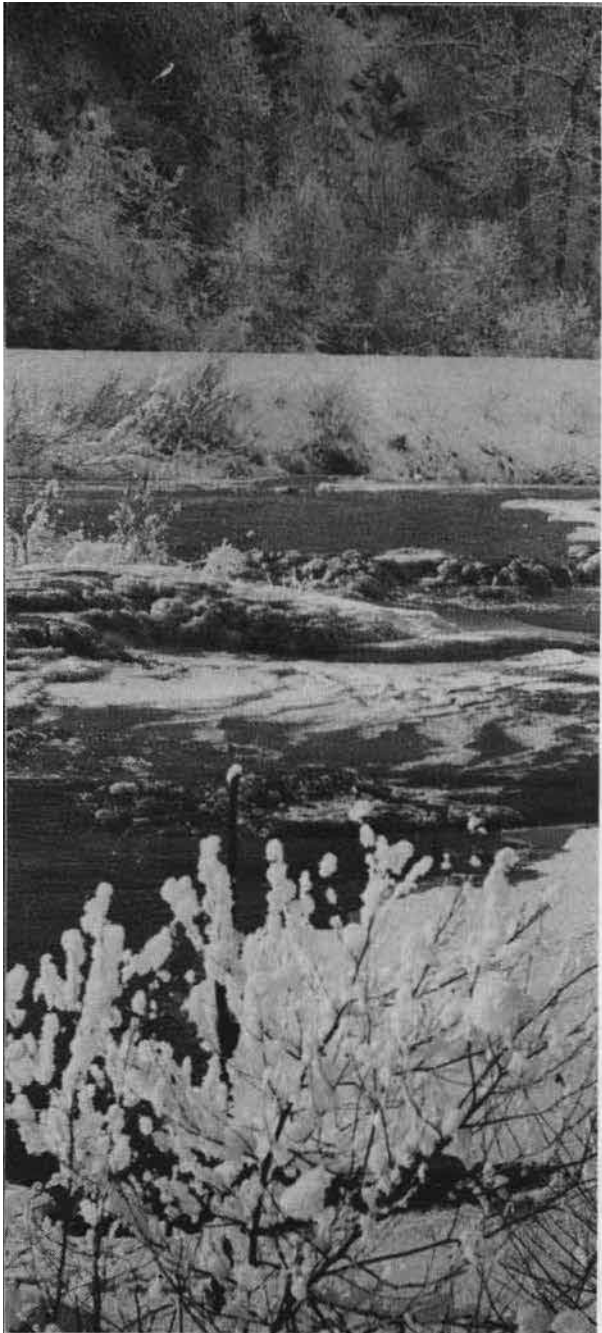


Stabilized Mill Creek channel

¹ Streambed gradient (slope) is an important factor because stream velocity and width of flood plain are dependent in part on the streambed gradient.



mill creek watershed



Yellowhawk and Garrison Creeks are diverted from Mill Creek about 1.75 miles east of the city limits, and flow in a westerly direction over the southern portion of the Mill Creek fan until they join the Walla Walla River, a distance of about eight miles for each creek. Estimated streamflow capacities in 1968 were 100 cubic feet per second in Yellowhawk and 20 cfs in Garrison. These stream capacities are being reduced by the increasing residential development along the banks. Present regulation plans during floods allow initial diversion of 60 cfs to Yellowhawk and 10 cfs to Garrison. Russell Creek, draining an area south and west of Mill Creek's drainage area, joins with Yellowhawk Creek about four miles below the Yellowhawk diversion point. The flows of these two streams, plus another stream which joins these waters further downstream, run into the Walla Walla River approximately five miles southwest of Walla Walla.

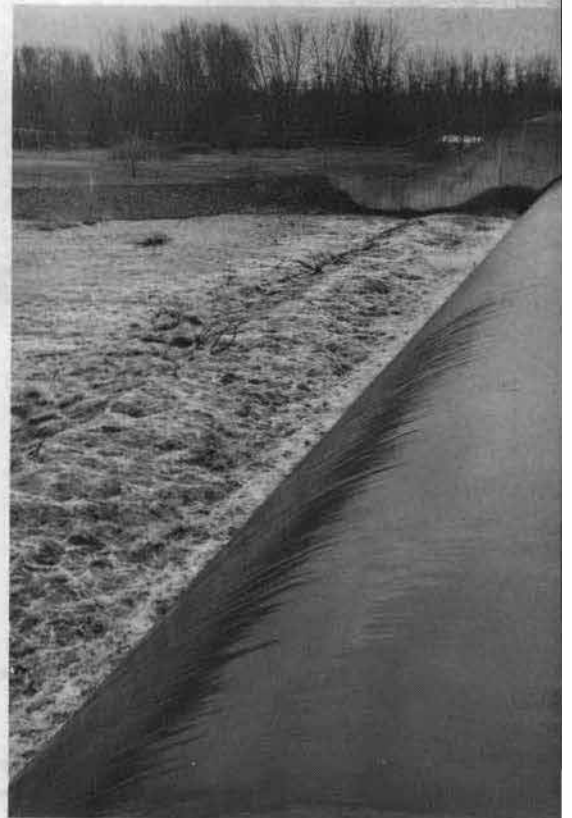
FLOOD CONTROL OPERATIONS

Seventeen floods of damaging proportions occurred in the Walla Walla area between 1878 and 1973. The largest floods on Mill Creek for which there is record, and their respective flood peaks at Walla Walla, were those of 31 March 1931 (6,000 cfs), 30 May 1906 (5,200 cfs), 28 December 1945 (2,760 cfs) and 23 December 1964 (2,400 cfs).* As indicated above, the main flood seasons for this area are the winter and spring months, although potential does exist for summer thunderstorm floods.

Without control large floods inundate extensive areas, cause severe channel and land erosion, deposit vast amounts of sediment and other undesirable debris, and cause great damage to developments in the flood plain. Fast flowing water which occurs in large floods poses the threat of loss of life. Such floods also present health hazards and cause disruption of activities.

16. * The natural peak above the project for the 23 December 1964 flood was 3,300 cfs. The regulated peak discharge through Walla Walla was 2,400 cfs.

Mill Creek diversion dam
and channel in action during
high water.





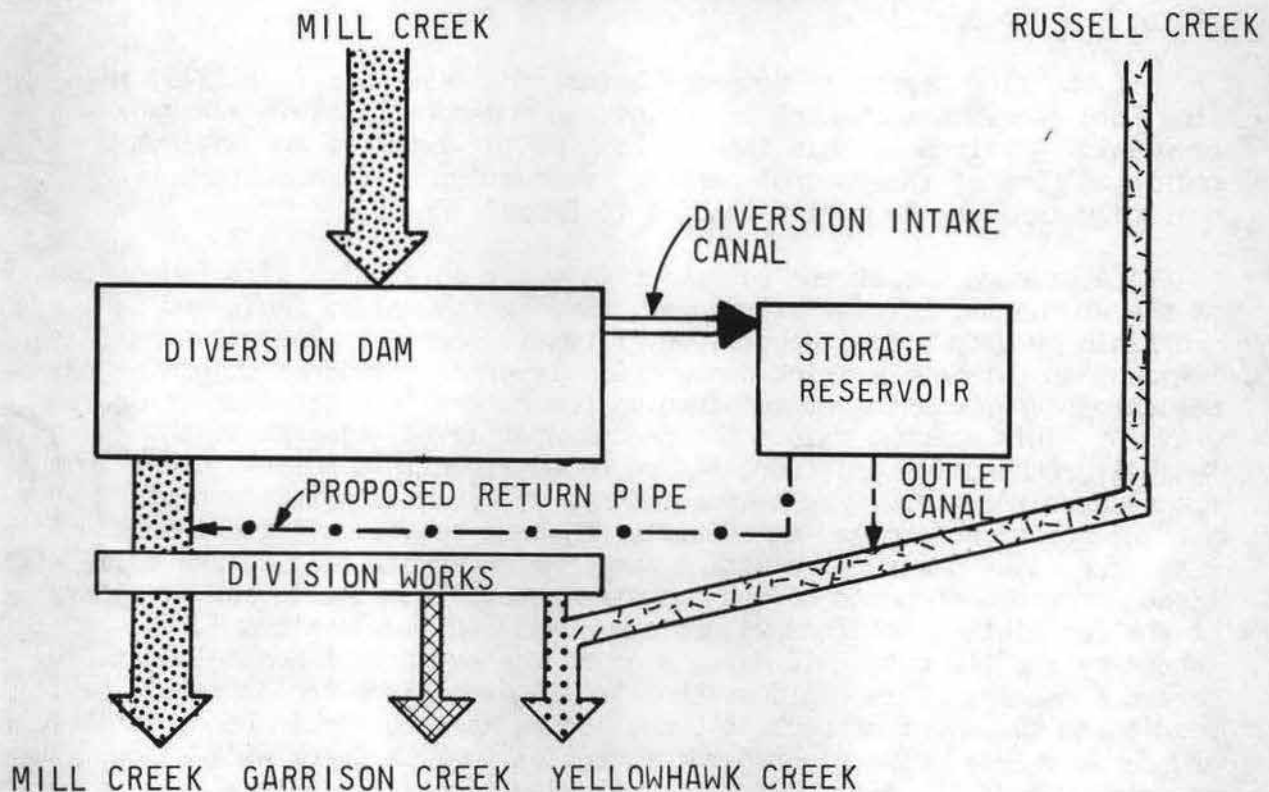
The aftermath of the 1931 Mill Creek flood in residential Walla Walla

Potentials for future large floods are best expressed by the Intermediate Regional and Standard Project Floods. These floods are defined by analysis of past floods, weather conditions which cause floods, and drainage area features related to flood generation. Intermediate regional floods are those expected to be equalled or exceeded once in about 100 years. Peaks of these floods are 5,700 cfs in Mill Creek above the existing project, and 4,500 cfs on Mill Creek below Walla Walla. The discrepancy in these flows represents regulation by the diversion dam.

Comparable flows on Lower Russell Creek and at the mouth of Yellowhawk Creek are 2,400 cfs and 4,600 cfs, respectively. These floods would produce critical and widespread inundation, erosion, and damages in flood plain areas. Standard project floods are not the largest floods which could occur, but represent reasonable upper limits of floods likely to occur. Peaks of these floods are 11,300 cfs on Mill Creek above the project; 7,000 cfs on Mill Creek below Walla Walla; 5,400 cfs on Lower Russell Creek; and 10,300 cfs at the mouth of Yellowhawk Creek. These floods would cause extreme overflow, inundation, and damages.

Reservoir regulations, in conjunction with the channel project through town, protect most of the city of Walla Walla from floods in Mill Creek, and provide partial protection on Yellowhawk Creek above Russell Creek. The project affords only partial reduction of flooding downstream from Walla Walla and on Lower Yellowhawk Creek. Some small local channel improvements, such as farmland levees, have been constructed along Lower Mill Creek and Yellowhawk Creek, but these are entirely inadequate for big floods.

SCHEMATIC DIAGRAM FLOOD CONTROL OPERATION

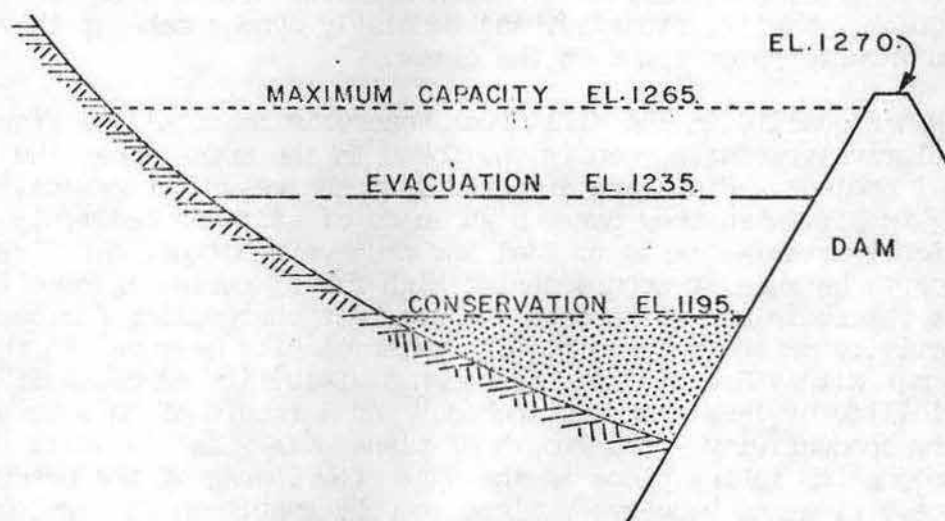


Flows in Mill Creek normally run less than 400 cfs and are frequently below 10 cfs. Flood retention procedures usually go into effect when flows at the diversion site reach 1,470 cfs; however, if major flooding is forecasted, diversion may be delayed to reserve sufficient reservoir storage space to control the flow as forecasted. At initial diversion, 70 cfs are channeled through the first division works, and are further divided between Yellowhawk and Garrison Creeks at the second division works. As flows continue to increase, consideration is given to increasing primary division to a maximum of 300 cfs. This causes minor flooding downstream on Yellowhawk and Garrison Creeks but is done to minimize overall flood damages.

Water is also channeled through the intake channel leading to the reservoir when flows reach 1,470 cfs. Discharges into the reservoir are regulated by a rule curve designed to provide protection for prolonged high flows; that is, the reservoir is not allowed to fill too quickly. However, the regulated discharge passing the diversion dam would never be allowed to exceed 5,470 cfs while space remains in the reservoir or while diversion capacity remains at the diversion dam. If the natural flow were to continue to rise after the reservoir has been filled to capacity at elevation 1,265 msl, it would be allowed to flow down Mill Creek without diversion into the reservoir to assure safety and stability of the storage facilities.

If the flow begins to decrease before the reservoir is filled, the flow into the intake channel is reduced in order to maintain a steady flow down stream. This flow is kept at the level of the maximum regulated flow of the control period. Evacuation of flood waters is presently through the outlet leading to Russell Creek.

The storage dam at the reservoir is built on a thick silt foundation at the abutments, but the silt layer thins in the valley floor and is underlain by deep gravel deposits over basalt bedrock. The reservoir bottom does not have a thick enough silt layer to provide a complete sealant and percolation of retained waters enters into the foundation gravels. This seepage raises the groundwater level adjacent to the Russell Creek outlet and increases released flows into Russell Creek from the reservoir outlet. The seepage causes detrimental saturation of surface soils in farmland immediately adjacent to the outlet channel. Also, the water pressure resulting from the reservoir head causes additional stresses on parts of the dam structure. In order to assure safety of the facilities, retained waters are evacuated to elevation 1,235 (about half full) within 15 days, even at the expense of nominal downstream flooding. This rapid evacuation allows project facilities to be readied in the event of back-to-back floods, as occurred in December 1964 and January 1965. The planned return outlet to Mill Creek will allow the reservoir to be evacuated from pool elevation 1,257.5 to elevation 1,235 in approximately 13 days, at a maximum discharge of 190 cfs using that outlet only. By using concurrent discharges of 190 cfs through the return pipe to Mill Creek and 50 cfs through the lower conduit to Russell Creek, evacuation time could be cut to approximately 10 days.



SCHEMATIC DIAGRAM
STORAGE SPACE ALLOCATION IN MILL CREEK RESERVOIR

WATER QUALITY

Mill Creek is a low alkaline, soft water stream. The land drained by the creek above the project generally consists of soils composed of loess and weathered basalt and loess and silty clay loam, underlain by gravels. The headwaters region is developed with certain restrictions because of its use as a water supply source for the city of Walla Walla. Limited numbers of private recreational sites and cabins are located along the creek below the watershed area. As the creek reaches the lowlands, increases in summer cabins, population, and agricultural intensity are reflected in the quality of the creek water. Increases in temperature, pH, turbidity, and phosphorus have been recorded. Nitrate nitrogen in the upper reaches of the stream varies from 0.0 milligrams per liter (mg/l) to concentrations greater than 3 mg/l below the city of Walla Walla. Stream temperatures vary from near freezing in the winter to as high as 72 degrees in the summer. Daily temperatures have been observed to fluctuate as much as 21 degrees in the creek above Walla Walla. Due to the natural turbulence of the stream, dissolved oxygen concentrations maintain near 100 percent saturation along the majority of the stream.

Few planktonic algae are present in Mill Creek, with the exception of an occasional diatom.* Periphyton, or those organisms "attached" to underwater objects, consist mainly of encrusting diatoms. Some Cladophora

* Diatom: minute planktonic algae with silicified skeletons. Can be either unicellular or colonial.

and other filamentous algae have been observed attached to the rocks in Mill Creek. Mayfly, stonefly, and caddisfly nymphs make up the bulk of stream invertebrates found in the creek.

Water quality in the Mill Creek Reservoir is totally different from the relatively pristine conditions found in the creek above the flood control project. Flows are diverted into the reservoir generally during spring runoff, when they carry high loads of silt and sediment. This additional material tends to seal the reservoir bottom, but diversion of this sort, because it occurs during high flows, causes extreme turbidity in the reservoir and is perhaps the greatest controlling factor for productivity in the reservoir. The water clarity measured in the lake in summer with a Secchi disc has shown a visibility of one-half foot to a visibility of less than two inches.* As a result of this turbidity, primary productivity - the growth of plant life - is low, with the maximum production taking place in the upper few inches of the reservoir surface. Floating blue-green algae are observable on the surface of the lake during the summer; however, they do not generally reach bloom proportions (greater than 500 cells per ml). Accumulations of blue-green algae occur around the shoreline because of the prevailing wind directions. Few algae are found below the surface of the lake. These forms are mainly diatoms and some green algae. Total numbers of algae in the lake are low. Some zooplankton, chiefly *Daphnia*, have been observed. The major blue-green algal species is *Aphanizomenon flos-aquae*, with occasional *Microcystis*, while the major green algae present is *Euglena*. The major diatom present is *Navicula*. Coliform bacteria are generally low; total coliforms averaging about 100/100 ml. with a one-time high of 2500/100ml. of water. Fecal coliform vary from 10 to about 40 per/100ml of water. Nutrient concentrations in the reservoir water are generally higher than those measured in the stream, and range from about .3 mg/l to 1.5 mg/l nitrate-nitrogen and about .3 mg/l to 1.0 mg/l ortho-phosphate.

An unstable thermal stratification occurs in the reservoir in the summer during periods of low wind and high temperatures. However, due to the shallow water depth in the lake, wind mixing of the water column will break up stratification. As a result, dissolved oxygen varies during the summer, with concentrations ranging from the near saturation values at the surface and 0.0 mg/l at the bottom to constant values of dissolved oxygen from surface to the bottom in the range of 6.0 mg/l to 8.0 mg/l. In the summer, during relatively calm conditions, the sediment will settle out, thereby increasing water clarity. However, the slightest wind tends to reduce clarity significantly. Total hardness of the reservoir is slightly higher than that observed in Mill Creek, with calcium hardness of the water accounting for the increase in total hardness. The lake bottom consists of fine sands and sediments devoid of vegetation. Oligochaetes and Chironomids are the most common benthic organisms.

*A Secchi disc is a black and white plate that is lowered into the water until it disappears from sight. At that point, the depth of the water is measured.

Temperature and dissolved oxygen profiles for the reservoir are graphed in Appendix Three.

Mill Creek Reservoir offers minimal recreational opportunity due to the high turbidity associated with flood flow releases into the lake. A technique attempted on several lakes in the Northwest has shown the feasibility of treating the water with aluminum sulfate (alum) to settle out obnoxious algal blooms and reduce the levels of phosphorus lake water. Laboratory tests are planned for Fiscal Year 1976 on Mill Creek Reservoir water to test the possible application of this treatment technique to reduce turbidity. If the laboratory tests do not reveal gross environmental effects on the biota of the reservoir or potential health hazards, and if funding is available, the lake may be experimentally treated in Fiscal Year 1977 to reduce turbidity in order to establish a warmwater fishery in the lake. If successful, the lake would be stocked with crappie, blue gill, and bass.

VEGETATION AND WILDLIFE

The Mill Creek project site hosts diverse and productive terrestrial habitats supportive of a variety of small mammalian populations and abundant with birds. Limited development along the banks of Mill Creek allows the creek to serve as a corridor from the Blue Mountains to the project site, and this accounts for the variety of wildlife found around the project. The trees, brush, and grasses along the stream above the project provide cover and food for wandering animals. Raccoon, beaver, mink, muskrat, and the belted kingfisher are among those animals attracted by the riparian habitat and woodlots in and around Rooks Park. The park area, together with small spots of undeveloped private land adjacent to the park, offers a variety of cover in the form of honeysuckle, elderberry, wild clematis, snowberry, and wild rose bushes. Cottonwood, black locust, sumac, and birch grow among the bushes and along the streambanks. Open spaces between these heavily vegetated clusters provide grassy areas and create an edge effect. Heavy willow growth is predominant in the sediment basin above the diversion dam, although it is partially removed periodically there and in the stabilized channel to prevent retardation of floodwaters. In these settings may be found occasional white-tailed deer, striped skunk, rabbits, coyote, bobcat, and numerous birds, including the red-shafted flicker, mourning dove, Chinese pheasant, quail, and various swallows, sparrows, and thrushes.

The rolling land around the reservoir maintains modified Palouse prairie vegetation. This area is leased until 1989 to the Washington State Department of Game and managed to facilitate conditions favorable to the hunting of game birds. The Game Department has planted approximately 5,000 trees and shrubs, including Russian olive, Chinese elm, black locust, prune, peach, mugho pine, and juniper. Shrubs they have



Oregon Wildlife
Commission sketch

planted are carigana, honeysuckle, service-berry, and southern wood. Tall wheat and Sherman big blue grass have also been planted. Dodder, Canada thistle, and morning glory grow in the reservoir area; however, the Department sprays annually with 2-4-D to inhibit such growth. Coyote, badger, cottontail rabbit, ring-necked pheasant, California quail, and several species of hawks are found there. The prairie falcon, an endangered species not resident in this area, may be seen as an occasional transient. This is the only endangered species known to be found around the project.

The reservoir site is an intensely hunted area for upland birds, due to its proximity to Walla Walla. The Game Department supplements the natural population by stocking the area with 1,000 to 1,500 male ring-necked pheasants each hunting season. Some chukars are also stocked.

Approximately 20 species of fish live in the Mill Creek system, with many of these found in the reservoir. Sculpins, suckers, and a limited number of steelhead are present in Mill Creek. Steelhead were once plentiful in Mill Creek waters, but through the years local urban, industrial, and irrigation streamway projects, as well as downstream pollutants have sizeably reduced their numbers. The project diversion dam presently blocks the pathway to the upper reaches of Mill Creek, with only a temporary fish ladder installed. However, unless the streamway below the project were to be substantially rehabilitated, the steelhead run would remain small, and adequate fish passage facilities at the diversion dam would have little effect toward recovery of a productive anadromous fish run.

Rainbow trout are planted in both the reservoir and in Mill Creek, on a put-and-take basis by the Washington State Department of Game. Between 9,000 and 17,000 rainbow trout are planted each year in the reservoir, with estimated harvests between 1,790 and 14,500 for individual years. The amount of turbidity in the lake caused by diversion negatively affects fishing success and has been a factor in recent years. When necessary, a lake rehabilitation program has been implemented using rotenone. Applied in the autumn, this kills all fish in the lake. The lake has been restocked with trout which grow at a faster rate than before, since competition from forage fish no longer exists. Data covering the rainbow trout management for the reservoir and Mill Creek are shown on the table in Appendix Two.

As noted in the preceding water quality discussion, a change to a warmwater fishery is being considered.

RECREATION

The Mill Creek site offers varied recreational opportunities and is easily accessible to people of all ages. The Rooks Park area has facilities for picnicking, including tables, fireplace grills, and running water. At present, there is an open field between the trees of the park and the creek which invites football, soccer, frisbees, and other group sports. Recreational opportunities around the reservoir consist of bird hunting and fishing in the proper seasons, and hiking or horseback riding any time of the year. There is a non-vehicular trail which follows Mill Creek from the park area to the edge of Walla Walla. This trail, open to any foot travelers, horsemen, or bicyclists, is maintained by the Corps within the project's boundaries and by other parties for the remainder of its length. Swimming is not allowed in the reservoir, due to muddiness, general water quality considerations, and because of its intensive use as a fishing pool. However, swimming is a popular pastime of the young in Mill Creek above the diversion dam. The old-fashioned American swimmin' hole still exists for Walla Walla, Washington. Attendance figures for both Rooks Park and the lake area are cited below.

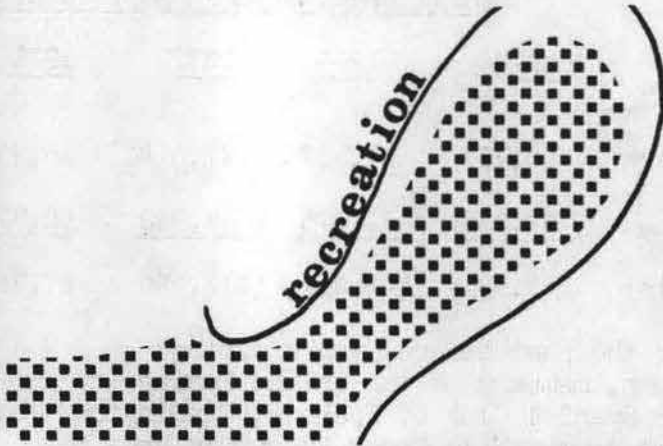
Mill Creek Attendance Tabulation

	<u>1974</u>	<u>1973</u>	<u>1972</u>	<u>1971</u>	<u>1970</u>	<u>1969</u>
Rooks Park	83,157	91,937	67,518	36,936	61,918	36,684
Lake Area	<u>99,834</u>	<u>51,375</u>	<u>44,938</u>	<u>50,772</u>	<u>46,414</u>	<u>25,393</u>
Total	182,991	143,312	112,456	87,708	108,332	62,077

For the past several years during the autumn, members of the Inland Empire Springer Spaniel Club of Spokane, Washington, have come to the Mill Creek Reservoir area to hold their nationally sanctioned dog trials. The dogs are put through several tests, including flushing pheasants out of the field and retrieving them both in the field and out of the water in the reservoir. The performance of the dogs is judged as they are put through the maneuvers. Dogs which have won two sanctioned field trials are eligible to compete in the English Springer Spaniel Field Trial Association's National Amateur Championship. This event was first held at Mill Creek in 1971, the first time the amateur classic was held west of the Mississippi River. An article in the Springer Bark* described the pheasant cover at Mill Creek as "something out of this world."

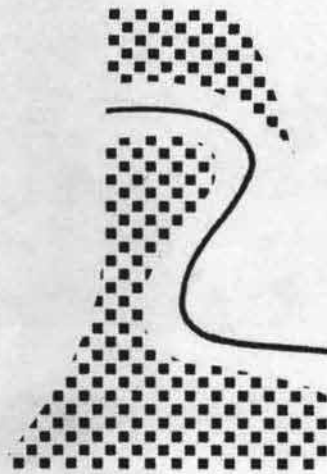
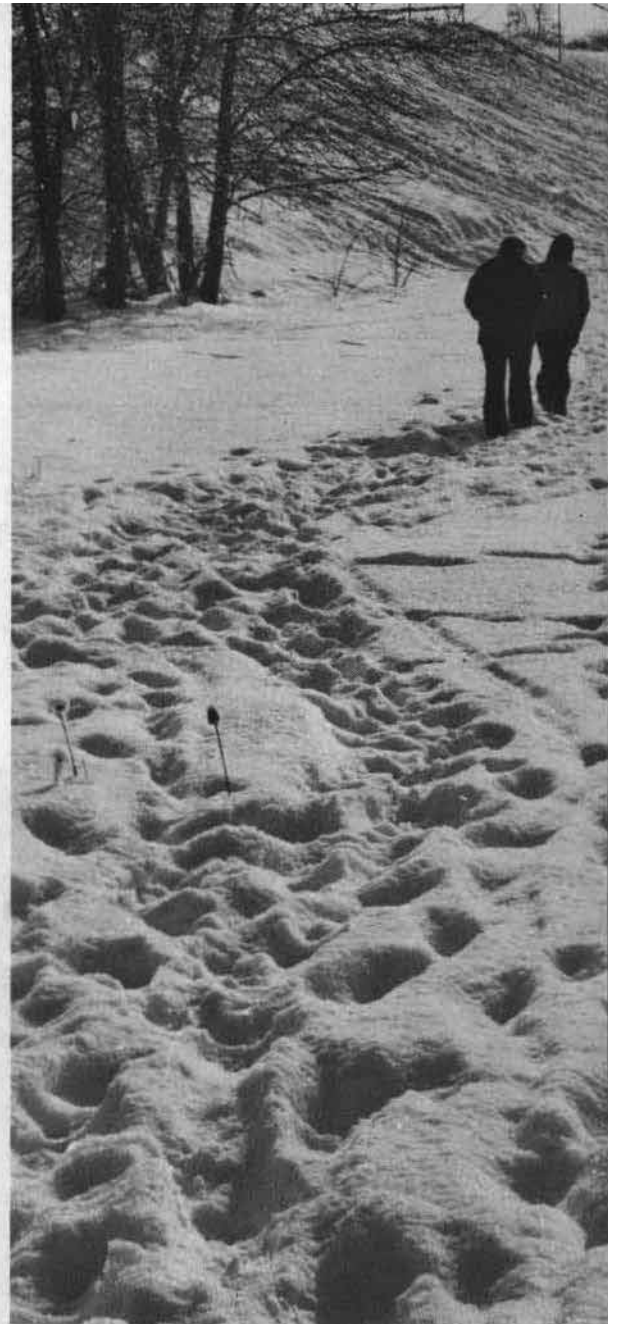
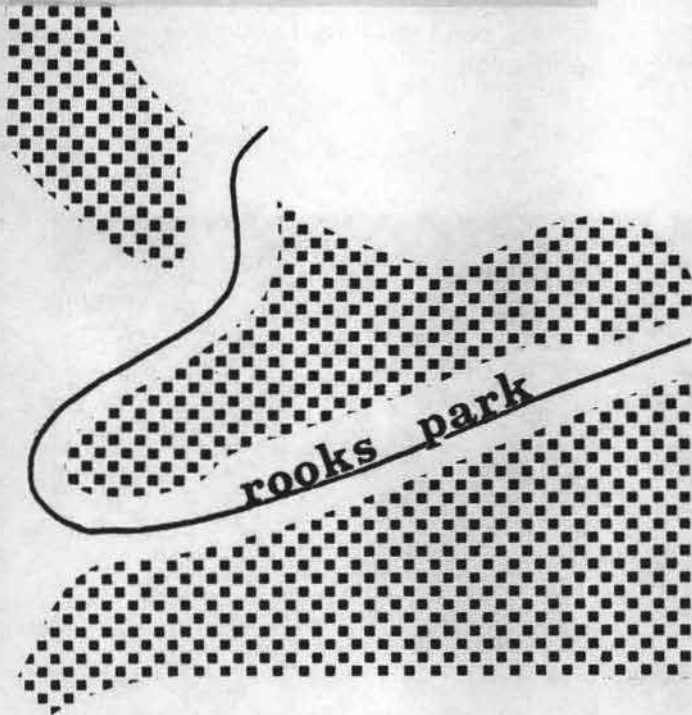


* "National Amateur Championship" by Harry Leeding; Spring, 1972, Springer Bark.



26.





HISTORY AND ARCHEOLOGY

The Walla Walla Valley is well noted for the early-day settlement associated with Marcus Whitman and other religious missionaries. Whitman Mission, a National Historic Site operated by the National Park Service, is located in the valley about 15 miles to the west of the Mill Creek Flood Control Project. During the founding of the mission, the settlers operated a mill, which was located adjacent to Mill Creek about six miles to the east of the flood control project. The area is part of the territory once occupied by the Cayuse Indians.

The Fort Walla Walla Timber Reserve, believed to have been abandoned in 1910, was also located in the project area.



CAPTAIN ROOKS PARK

THIS PARK IS DEDICATED TO THE MEMORY OF CAPTAIN ALBERT MARCUS ROOKS, UNITED STATES NAVY, WHO WAS A POSTHUMOUS RECIPIENT OF THE CONGRESSIONAL MEDAL OF HONOR DURING WORLD WAR II.

CAPTAIN ROOKS WAS BORN DECEMBER 28, 1888 IN WHITMAN COUNTY, JUST WEST OF WALLA WALLA HIGH SCHOOL AND GRADUATED FROM THE US NAVAL ACADEMY IN 1914. IN WORLD WAR II HIS FINAL COMMAND WAS THE CRUISER "HOUSTON".

THE "HOUSTON" AND THE AUSTRALIAN CRUISER "PERTH" WERE DAMAGED IN THE BATTLE OF MODERNA STRAITS AND WERE ATTEMPTING TO MAKE THEIR ESCAPE AT NIGHT ALONG THE COAST OF JAVA. THE TWO SHIPS WERE DETECTED BY THE JAPANESE FLEET OF 28 SHIPS AND THE "PERTH" WAS SUNK AT ONCE.

CAPTAIN ROOKS DIRECTED THE UNEVEN FIGHT FROM THE BRIDGE OF HIS SHIP, INSPIRING HIS CREW BY HIS COURAGEOUS EXAMPLE. AFTER BEING STRUCK MANY TIMES THE "HOUSTON" WENT DOWN ON MARCH 24, 1942 WITH HER CAPTAIN AND OVER 400 OTHERS AFTER INFlicting SEVERE DAMAGE TO THE ENEMY. NAVAL EXPERTS HAVE DECLARED THE BATTLE OF THE JAVA SEA TO BE ONE OF THE MOST GALLANT IN ALL NAVAL ANNALS.

ERECTED BY THE CITIZENS COMMITTEE FOR THE HISTORICAL LIFE DEVELOPMENT IN COOPERATION WITH THE WALLA WALLA POSTS OF VETERANS OF FOREIGN WARS, AMERICAN LEGION AND VETERANS OF WORLD WAR I.

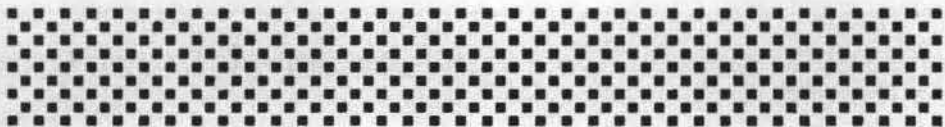
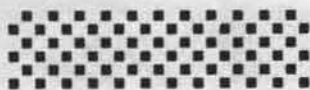
At present, historical or archaeological resources are not known to exist in the actual Mill Creek Reservoir area or in proximity to the Federally operated part of the channel.* Further downstream, within the community of Walla Walla, are a number of buildings of historical and architectural interest which are protected from flooding as a result of the project.

AESTHETIC RESOURCES

The varied landscape of the project area offers considerable aesthetic interest throughout the seasons of the year. Rooks Park is a setting of informal composition, dominated by deciduous plants which provide views of spring and summer green, fall color, and winter contrast. Prairie hills, broken by a stretch of riprapped dam, surround the reservoir and the appearance here is more arid than that of the park. There are other places on the project lands to get lost in as one explores paths through thick willow cover and discovers wildflowers that lead to yet wilder retreats. Tall grasses wave on banks above the stream in summer, as field mice scurry, hidden within the grass jungle. The project area has spots attractive to many different outdoor persuasions. The photographs in this Environmental Impact Statement give illustration of the site.



* Letter of 30 October 1973 from Washington State Office of Archeology and Historic Preservation.



30.

three.....

relationship of the proposed project to land use plans

The project land consists exclusively of land owned by the Federal government and controlled by the Corps of Engineers. Land use allocations for the project are designated on the map on page 3. Following is a brief discussion of each of the land use allocations.

Project Operation Lands are lands acquired and allocated for safe, efficient operation of the project for authorized purposes other than recreation and fish and wildlife. Project Structures is a subcategory of Project Operation Lands and refers to lands required for operation and maintenance of project structures or for care and management of the project. Low-density recreation or wildlife habitat management will be permitted when not in conflict with the basic project requirements.

Operations: Recreation - Intensive Use refers to lands allocated on which facilities have been or will be provided to accommodate the recreation needs of visitors in concentrated numbers. These lands, including developed facilities thereon, may be administered under lease agreements by state or local agencies or commercial concessionaires. Private or long-term, exclusive group use of these public recreation lands will not be permitted. Licenses, permits, or easements will not be issued on Intensive Use recreation lands for non-compatible, man-made intrusions, unless there is a demonstrated public need for which no reasonable alternative is available.

Operations: Recreation - Low-Density Use involves lands allocated for low-density recreation activities by the visiting public. They are required to provide open space between intensive recreational developments or to provide buffer zones between intensive recreational development and land which is incompatible with the recreational development and would detract from the quality of the public use. Such incompatible land may be located either on the project or adjacent to the project. Development on low-density lands will be kept to the minimum necessary to allow a dispersed visiting public, with non-motorized access through the area, to participate in nature-related activities. Limited facilities such as benches, tables, sun shelters, vault toilets, and waste receptacles will be allowed. All such facilities will be in harmony with the natural surroundings, so as not to be intrusive to the environment. Landscaping, when necessary, will utilize plants native or naturalized to the area. Man-made intrusions such as pumping plants, pipelines, etc., will

be permitted with appropriate controls to minimize adverse visual or other negative impacts upon the natural character of the areas. Measures leading to habitat improvement for benefit of wildlife will be a management objective. These lands are generally administered by the Corps of Engineers.

Operations: Wildlife Management Lands have been allocated for development and management of habitat for fish and wildlife or for propagation of such species. Private or exclusive group use of these lands will not be permitted. Licenses, permits, or easements for man-made intrusions will be permitted only where necessary to serve a demonstrated public need where no reasonable alternative is available. Intensive Management lands will be available for low-density recreation activities such as hiking, primitive camping, nature study and photography, bird watching, and other related activities. Hunting and fishing will be allowed as commensurate with management objectives. Lands designated for wildlife management at Mill Creek project are leased to the State Department of Game.

In general the land uses which are associated with the Mill Creek project are compatible with the regional land use patterns and desires. The project facilitates urban land uses through flood protection of downstream areas. The recreation, wildlife, and associated open space uses of the project lands are consistent with rural and agricultural qualities of the adjacent landscape of the project surroundings.

Few changes in land use are expected to result from the proposed project improvements. The area along the outlet canal which will be altered with the new buried pipeline can continue to be used for wildlife after restorative seeding and planting is accomplished. Some of the land use along Russell Creek could change as a result of the proposed new outlet operation. Lower flows in Russell Creek could influence to some degree the local groundwater conditions, thereby leading to some additional residential development. Since residential development has already occurred, and may continue to do so, without a modified outlet, the extent to which the proposed new outlet may influence land use in the Russell Creek area is not definite. Any future change in land use in that area, which can be attributed to the Mill Creek project outlet modification, could be of small magnitude.

environmental impacts of the project

The Mill Creek Reservoir-Rooks Park site provides a recreational area for diverse interests within a short distance of the town of Walla Walla. The site offers a spot for an afternoon's diversion in a quiet, rural setting; a space for watching birds and sighting other animals in quasi-natural surroundings; a place to join family and friends in picnicking and leisure activity. As such, the project site has allowed for increased general recreation in the area. Upland bird hunting is a recreational activity that has benefited from site management. The proposed recreational facility improvements listed in Section One of this Statement will expand the present recreational resources and may increase the recreational use of the project.

Solid waste from Rooks Park is disposed of at the city sanitary landfill. Sewage at the park and at the damtender's house is handled through septic tanks and drain fields. Sewage from the restrooms at the reservoir is pumped out by a commercial firm. Fires are allowed in the park in grills and, in a few places, in the open. A cautious attitude is maintained concerning these fires, particularly during the dry fall season. Some vandalism does occur, particularly in and around the restrooms at Rooks Park and the reservoir; also, signs are used as targets and there is some off-road vehicular abuse. The Corps of Engineers has implemented a training program authorizing project personnel to issue citations for offenses against Corps' resource development regulations. Applicable regulations are listed in Appendix Five.

The project lands offer homes to an assortment of wildlife creatures within varied habitats, including snakes and frogs, ground squirrels, game birds, hundreds of songbirds, rabbits, squirrels, skunks, and a few deer. This is mentioned here because one impact of the project is that the wildlife populations inhabiting the area will be maintained at the present level, as the site constitutes an unofficial refuge from intense agricultural land development throughout the surrounding hills.

Factors within the reservoir inhibiting a healthy environment for fish are siltation and turbidity due to the high loads of silt carried in with the spring runoff. As a result, there is no vegetation on the lake bottom. The water quality of the reservoir is responsible for a relatively unproductive lake in terms of algal growth,* and this in turn is a detriment to a sustained fishery. The turbidity in the lake causes the water to be very muddy and thus the reservoir's water and shoreline are not aesthetically pleasing. Swimming in the reservoir is not allowed, due, in part, to marginal water quality.

The project makes it possible to contain most floods through the community of Walla Walla and aids in the reduction of flood threat on properties below the city. The potential for a devastating flood has been considerably lessened by providing regulation on flood waters.

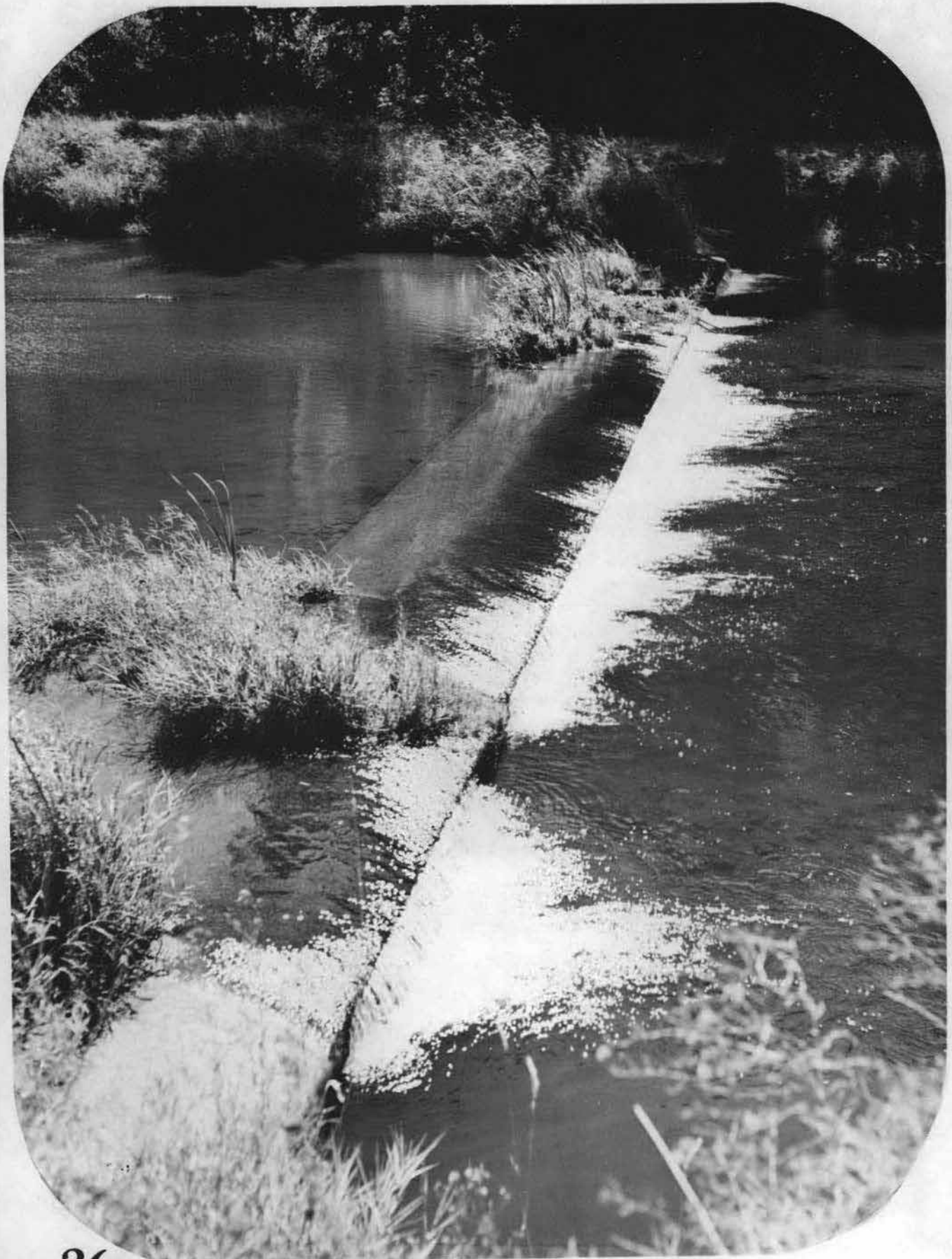
The impacts of the raising of the levee are expected to be minimal. Visibility will not be affected, and there should be little disturbance of vegetation and wildlife. No new borrow pits will be created, as the borrow material used will be purchased from Walla Walla County.

The proposed return pipeline to Mill Creek will have several environmental effects. It will allow water to be evacuated from the storage reservoir much more rapidly, so the reservoir can be emptied well within the 15-day operational requirement limit without causing destructively high flows in Russell Creek. It will reduce seepage when the reservoir is filled above Elevation 1,205. Vegetation and earth borrow removed from the sediment basin area, in order to obtain fill, will be a temporary adverse impact, in that valuable wildlife habitat will be destroyed. This action is beneficial in terms of flood control, however, in that it will clear the channel for smooth flows of water. The willows will grow back within a few years, and construction scars in the borrow area will be washed away by Mill Creek waters in the first year.

There will be no problems with turbidity in the stream, since the excavation of the borrow material will be done during low-flow periods when the sediments are dry and a good distance away from the Mill Creek channel. Disruption of the delta area may eliminate some game and song-birds, since it supports extensive willow and brush growth. However, each year more sediment is deposited in this area during the spring floods, and as a result the sediment removal area will be returned to a natural appearance in only one or two years' time and associated wildlife should move into the area. Only a small portion of the delta area will be used, since the borrow requirements are small in comparison to the large expanse of delta upstream of the diversion dam.

* Due to the high rate of turbidity, the sunlight penetrates less than eight inches.

Construction noise and activities will temporarily disturb the immediate area. This will principally affect users of the project lands, as few homes are located near the construction area. The unused ditch is presently providing a particular wildlife habitat which would be lost if the rehabilitation plan is implemented; however, fill will cover the pipe and replace that segment of the canal resulting in a productive strip of land of a different nature.



36.

The stabilized Mill Creek channel downstream from the diversion dam

The turbidity in the reservoir cannot be avoided because of the necessity to divert waters into the impoundment during spring runoff. This causes a relatively unproductive impoundment in terms of strong, self-sustaining aquatic populations, and the muddiness of the reservoir detracts from the aesthetics of the area.

Temporary adverse impacts will result during construction of the new outlet pipeline. These impacts will be along the pipeline route and at the borrow area near the diversion dam.

Problems of seepage through the reservoir foundation will remain, even though rapid evacuation of the impoundment through the proposed return pipeline to Mill Creek should reduce the problem. Approximately one foot of silt is being deposited annually on the reservoir bottom, which may solve the seepage problem over the long term. The seepage that is still taking place may be considered an adverse impact until it is corrected.

five.....

adverse environmental impacts

which cannot be avoided





Some of the participants in the springer spaniel field trials which have been held at Mill Creek project. (photograph courtesy of Walla Walla UNION BULLETIN)



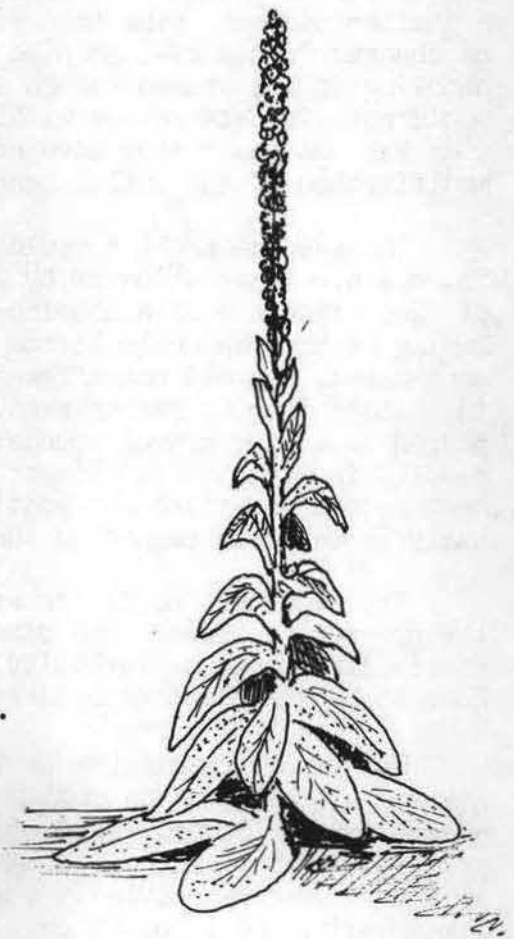
Alternatives that would lessen adverse impacts of the project include removal or abandonment of the project or a discontinuation of the flood control aspects of the project. The project presently protects residential areas, business areas, community service buildings, and two colleges, as well as historical resources within the city of Walla Walla. It also reduces agricultural land damages below the city. Flood protection of these social resources would be threatened considerably if the project were to be removed, although some protection would still be afforded by the stabilized channel below the project which is administered by Walla Walla County.

Several alternative plans were considered with respect to the return canal rehabilitation. One solution considered was less frequent diversions of flood waters into the reservoir. This plan involved the least expenditure of funds; but it would result in more frequent and higher flood damages along downstream reaches of Mill Creek through the city of Walla Walla and would not correct the reservoir evacuation problem. Another approach considered was to enlarge Russell Creek and Lower Yellowhawk Creek to carry a maximum discharge of 340 cfs, of which 240 cfs would be flood storage water from the reservoir and 100 cfs assumed natural runoff from the Russell Creek drainage area. Stored waters could be evacuated from the maximum pool elevation of 1,257.7 to the required elevation 1,235 within nine days. Real estate acquisition and flowage easements would be costly and difficult to obtain because of the developments encroaching on Russell Creek. Maintenance would be costly. The plan would undoubtedly reduce the present aesthetic value of the creeks and the aquatic habitat would be temporarily devastated and permanently altered.

six.....

alternatives

to the proposed action



Other plans considered an open, unlined canal to Mill Creek along the original outlet alignment. A buried pipeline was considered more desirable than a concrete-lined, trapezoidal channel for the following reasons:

- a. An enlarged open channel would require fencing.
- b. An open channel would be more susceptible to sediment and debris from sidehill runoff.
- c. Annual operation and maintenance cost would be higher for an open channel.
- d. A bridge crossing the open channel would be required.
- e. An open concrete channel would have greater negative aesthetic impact than the proposed buried outlet pipeline.

Three plans were considered using the buried pipe conduit. Each was similar to the adopted plan as described in Section One of this Statement. The differences were in the slope of the pipeline and in the retention of a smaller diameter pipe (the pipe extending to the upper gate house would be changed from a 32-inch pipe to a 42-inch pipe to facilitate efficient handling of the stored waters under the proposed plan). The latter plan would not evacuate waters within the 15-day safety limit. The adopted plan was the least expensive of the plans that considered structural modification of the outlet canal.

The seepage problem could be eliminated by the discontinuance of flood control operation or by paving of the reservoir bottom. The effects of discontinuance of authorized operations have already been discussed. Paving of the reservoir bottom with a substance such as asphalt was once considered, but did not offer a practical solution. To implement the idea would involve either removing all the silt so the sealant could be placed on a firm gravel foundation or paving over the silt. Cracks would develop in asphalt laid directly over the silt, and the dry silts would then become unsettled and possibly collapse the bottom sealant. No cost analysis was made regarding these possibilities.

The muddiness of the reservoir could again be solved by abandoning the project purposes. One other solution would be to treat the water chemically to reduce turbidity. However, the chemical treatment would have to be reapplied each time wind stirred up the settled silts.

The basic alternative to the continued operation and maintenance of the project would be to stop project operations and to abandon and/or remove the structures. With such an alternative, the lands now occupied by the project would be available for other uses if desired, although some of the present recreation and wildlife uses could continue. With abandonment, the flood control feature would be gone.

The long-term productivity of the area influenced by the Mill Creek project is enhanced by the continuing operation and maintenance of the project. The businesses and homes that are protected as a result of the flood control operation are vital to the economic and social well-being of the Walla Walla Valley. Disruption from floods and economic losses are now minimal in Walla Walla proper, and lessened in the farmlands above and below the city. The major commitment to be made in the continuing operation is the manpower necessary to operate and maintain the facilities. This investment of time and money is small when balanced against annual public benefits from project operation. Long-term security from flood damage is an intangible value gained from the continuing operation of the Mill Creek project.

The natural environment of the site suffers very little under the program for continued operation and maintenance. Radical changes of the land were made when the project was constructed, but there is no foreseeable need for such extreme change to again take place under current operating procedure. Actually, long-term wildlife benefits have been established as the site serves as a sanctuary from intense agricultural development. The intangible values that the project lands have as a human sanctuary - away from the city, a step closer to the natural world - and as a recreational area are also long-term benefits afforded by maintenance of the project.

The commitments of time, energy, money, and environmental resources necessary to the continuance of the project are outweighed by the short- and long-term benefits the project provides. This is especially true if both traditional and intangible benefits are taken into consideration.

seven.....

*the relationship between
local short-term uses of man's
environment and the maintenance
and enhancement of long-term
productivity*



eight.....

irreversible and irretrievable

commitments of resources

The time, monies, and energies necessary to maintain the project are irretrievable and irreversible commitments. The materials involved in construction of the proposed actions (the pipeline, the bridge, the asphalt to pave the parking lot) also fall into this category. However, the placement of these materials may not be irretrievable; that is, it is possible that they could be removed. In the previous section, it was stated that radical land changes were made at the time of project construction. Likewise, it was at that time that extensive commitments of resources were made to the project. The continued operation, maintenance, and improvement of the project are continuations of that early commitment.



nine.....

coordination with other agencies

Coordination with other agencies during project planning and construction is unknown, since the project was completed in 1942 and such records are unavailable for that time.

The principal agencies with which the Corps now coordinates its Mill Creek project activities are:

National Oceanic and Atmospheric Administration
Tri-State Steelheaders
Federal Bureau of Investigation
U. S. District Court, Eastern Washington District
U. S. Geological Survey
City of Walla Walla
County of Walla Walla
Walla Walla County Board of Commissioners
Walla Walla County District Court
Walla Walla County District Justice Courts
Walla Walla County Extension Service
Walla Walla County Fire District No. 4
Walla Walla County Health Department
Walla Walla County Park Board
Walla Walla County Sheriff's Department
Walla Walla County Superior Court
Walla Walla Union Bulletin
Washington State Department of Ecology
Washington State Department of Fisheries
Washington State Department of Game
Washington State Parks and Recreation Commission
Washington State Patrol

Following is a list of the contacts made during the preparation of this Statement.

a. The Historical Society of Walla Walla, the Washington Archaeological Research Center, the Washington Advisory Council on Historic Preservation, and the National Park Service were contacted concerning the existence of historical or archaeological sites on the project lands.

b. The Washington State Department of Game supplied material on fishery management in Mill Creek.

c. The Blue Mountain Audubon Society compiled the Bird List for the Statement.

d. The U. S. Fish and Wildlife Service was consulted regarding endangered species.

e. The Washington State Department of Game provided information concerning game management in the Mill Creek area.

Copies of the Draft Environmental Impact Statement were furnished to the following agencies and groups:

City of Walla Walla
Walla Walla County
Walla Walla Flood Control District
Blue Mountain Audubon Society
Walla Walla Union-Bulletin
Washington State Environmental Council
Tri-State Steelheaders
Washington State Agencies (Clearinghouse)
Washington State Department of Game - local office
Soil Conservation Service
U. S. Environmental Protection Agency
U. S. Department of Commerce
U. S. Department of the Interior (Agency Clearinghouse)
National Oceanic and Atmospheric Administration, Western Region
Pacific Northwest River Basins Commission

The public was notified of the completion of the Draft Environmental Impact Statement by newspaper announcement and was invited to request copies and offer comments. Also asked to comment were various Federal, state, and local agencies. The following is a list of those who replied to the review request, along with their comments and a response to each.

CITY OF WALLA WALLA:

Comment:

It is our joint opinion that the proposed construction of a return outlet will be of benefit to the area and that all effects will be of a beneficial nature to the environment, with the conclusion that the action as anticipated would result in a negative declaration under the State Environmental Policy Act of 1971.

Response:

Noted.

WASHINGTON STATE DEPARTMENT OF FISHERIES

Comment:

The Department of Fisheries would have no objection to the proposed change in operational or maintenance controls. These actions would not have any effects on salmon fishery uses.

We have been aware of the flooding problems of this area. The excessive, instantaneous runoff conditions are further aggravated by limited drain channel capacities. Encroachment by development of property to the very bank line edge of the streams and channels limits alternatives. We would ask if any consideration has been made for reservoir sealant to prevent seepage if this is considered as an adverse aspect.

Response:

As indicated in the text, several different sealants were considered for the reservoir, but it was determined that a practical solution is not available. It now appears as if the seepage problem may be solving itself; approximately one foot of silt is being deposited in the reservoir yearly. As this silt layer accumulates, it could serve as a natural sealant.

WASHINGTON STATE PARKS AND RECREATION COMMISSION:

Comment:

The Washington State Parks and Recreation Commission has reviewed the above-noted document and can find no adverse impact on existing or proposed recreational areas under the jurisdiction of the Commission.

WASHINGTON STATE PARKS AND RECREATION COMMISSION (Cont'd)

This Statement does not give an indication of what type of research was done to determine the location and value of possible archeological or historical sites. There is no indication that a qualified person was able to survey the proposed project sites. Further, staff finds that this proposed action has no impact on known historical sites (sites either on or proposed for the State or National Registers of Historic Places). The Registers, however, provide only a small amount of information and should not be construed to be a complete inventory.

In short, it appears that this Statement does not adequately identify whether or not significant archeological or historical sites are located in the area where the proposed action will occur.

Response:

Through correspondence with the Washington Archaeological Research Center, it was decided that an archeological survey of the Mill Creek area would be unnecessary, as the only excavation to take place in implementing the proposed project will be to obtain fill material for the diversion channel. The material used to cover the conduit will be obtained from the sediment basin area which has formed behind the diversion dam at Mill Creek. Since there will be no excavation of any previously undisturbed soils, there is no need for further archeological investigations. (See Appendix seven)

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

Comment:

The Department of Natural Resources has reviewed the Draft Environmental Impact Statement for the proposed Mill Creek project prepared by the Corps of Engineers. We have no comments to make regarding this Statement.

Response:

Noted.

WASHINGTON STATE DEPARTMENT OF GAME:

Comment:

Your report points out the unavoidable necessity of continued maintenance and operation of the Mill Creek Flood Control Project and recreational facilities. It appears imperative that seepage problems be remedied and impact to Garrison Creek be minimized, in accordance with its limited capacity to absorb present impacts from water diversion.

WASHINGTON STATE DEPARTMENT OF GAME (Cont'd)

Comment: (Cont'd)

The covered pipeline system is preferable to the open channel method. Improvement of the recreational facilities is admirable compensation for land removed by Mill Creek Reservoir. Mention should be made, however, of plans to insure that surface water runoff from the proposed paved parking lot will not degrade water quality.

Response:

The seepage problem is discussed in the comment from the Washington Department of Fisheries. Runoff from the parking lot is expected to have a negligible effect on the water quality of Mill Creek.

Comment:

Indication of an active environmental awareness was shown throughout the report. Preservation of the multitude of aesthetic and wildlife amenities, as well as protection of Walla Walla residents from flood-related damage, should continue to maintain a harmonious balance. We suggest plans for a future improvement of water quality in Mill Creek, and the reservoir should be prepared and implemented,

Response:

There is no need to improve the quality of Mill Creek as it now exists in the project area, but studies are underway concerning improvement of the water quality of the reservoir. Chemical treatment now appears to be the only practical method of treatment available. Possible effectiveness of such treatment has not yet been ascertained.

WASHINGTON STATE HIGHWAY COMMISSION:

Comment:

Our review of the subject document indicates the proposed project will have a minimal effect on existing or planned highway facilities in the Walla Walla area.

It would appear that our interest would be benefited by the proposed project, since better regulation of flood flows would provide added insurance against damage to existing highway stream crossing structures.

Response:

Noted.

WASHINGTON STATE DEPARTMENT OF COMMERCE AND ECONOMIC DEVELOPMENT

Comment:

I have reviewed the Mill Creek Project Environmental Impact Statement prepared by the U. S. Army Corps of Engineers and do not wish to comment on this.

Response:

Noted.

WASHINGTON STATE DEPARTMENT OF ECOLOGY:

Comment:

The Draft EIS appears to present adequately, in a comprehensive and objective fashion, the environmental impacts and alternatives to the proposed project. It is especially impressive to see such an excellent use of photos and maps throughout the Statement for illustrative purposes. These greatly facilitated understanding of the project and the environmental impacts involved.

A shoreline management permit and flood control permit may be required by the State prior to initiation of the canal rehabilitation section of the project.

Response:

We are aware of the State regulations covering these permits, and they will be acquired, if necessary, by contractors who may work on the project. The Shoreline Management Act of the State of Washington does not apply to the Federal Government.

U. S. DEPARTMENT OF THE INTERIOR, PACIFIC NORTHWEST REGION:

Comment:

The general area involved was at one time occupied by the Cayuse Indians and has some general historic value. It is possible that excavation will encounter burial grounds or other areas having significant artifacts. If this should be the case, we recommend that the responsible entity contact the Chairman of the Confederated Tribes of the Umatilla Indian Reservation, Route 1, Box 189, Pendleton, Oregon 97801, for disposition of artifacts found. The Cayuse Indians were one of the tribes which now make up the Confederated Tribes of the Umatilla Reservation.

U. S. DEPARTMENT OF THE INTERIOR, PACIFIC NORTHWEST REGION: (Cont'd)

Response:

Although no artifacts are expected to be discovered, since the excavation area is not a previously undisturbed area, the Washington Archaeological Research Center will be contacted to investigate in the event of a discovery of any kind. If something of active Indian interest should be involved, the tribal representative probably would be contacted by the Research Center. (See Appendix seven)

Comment:

Pages 1-4: The description of the action is an inadequate definition of the character of the rehabilitation of a return outlet canal to Mill Creek and the replacement of an abandoned open canal with buried pipe. A thorough discussion of these structural measures should be included.

Response:

The discussion of the rehabilitation of the return outlet has been expanded in the text.

Comment:

Page 6, bottom of page: We suggest deleting the definitions in the Geology Section. If further description is essential, we suggest: "Areas have been subjected to differential internal pressures which have resulted in block uplifts, bending of lava flows, readjustments of lava bed slopes; and vertical, sloping, or horizontal displacements of various lava beds caused by movement along fractures and joints in the basalt."

Response:

The definitions have been deleted and the suggested description has been added.

U. S. DEPARTMENT OF AGRICULTURE:

Comment:

This Environmental Impact Statement Draft was reviewed by our personnel at the field and State level. This letter takes all of their comments into account. Some problems pointed out were the debris removal system on existing diversions and a water seepage problem below the dam.

U. S. DEPARTMENT OF AGRICULTURE (Cont'd)

The EIS satisfies environmental impact considerations about the project. We have appreciated the opportunity to make this review.

Response:

Noted.

U. S. ENVIRONMENTAL PROTECTION AGENCY:

Comment:

We have reviewed the Draft Environmental Impact Statement for the proposed Mill Creek project. We foresee no adverse environmental impacts other than those discussed in the Draft Statement.

Response:

Noted.

LETTERS OF COMMENT FOLLOW

CITY OF WALLA WALLA

BOX 478

WALLA WALLA, WA. 99362

Office of the City Manager

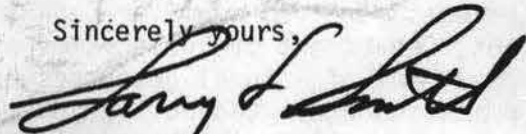
May 7, 1974

Nelson P. Conover
Colonel, CE
District Engineer
Walla Walla District
Corps of Engineers
Bldg. 602
Walla Walla City-County Airport
Walla Walla, WA. 99362

Dear Colonel Conover:

The draft environmental impact statement for the Mill Creek Project has been reviewed by the City Engineer, City Manager, Police Chief, Fire Chief, Director of Parks and Recreation and General Services Superintendent. It is our joint opinion that the proposed construction of a return outlet will be of benefit to the area and that all effects will be of a beneficial nature to the environment with the conclusion that the action as anticipated would result in a negative declaration under the State Environmental Policy Act of 1971.

Sincerely yours,



Larry L. Smith
City Manager

LLS:js



STATE OF WASHINGTON

OFFICE OF THE GOVERNOR

OFFICE OF PROGRAM PLANNING AND FISCAL MANAGEMENT

HOUSE OFFICE BUILDING

OLYMPIA, WASHINGTON 98504

WALLACE G. MILLER
DIRECTOR

DANIEL J. EVANS
GOVERNOR

June 4, 1974

206-753-5450

Mr. Nelson P. Conover, Colonel, CE
District Engineer
Department of the Army
Walla Walla District, Corps of Engineers
Building 602, City-County Airport
Walla Walla, Washington 99362

Dear Colonel Conover:

Review of the draft environmental impact statement for the Mill Creek Flood Protection Project, has been completed by agencies of the State of Washington. The review process was coordinated by the Office of Program Planning and Fiscal Management, acting in its role as the state clearinghouse.

Comments received from the Department of Commerce and Economic Development, Department of Ecology, Department of Highways, Department of Game, Department of Natural Resources and the State Parks and Recreation Commission are attached for your consideration in preparing the final statement. Also, the Department of Fisheries comments are attached.

Thank you for the opportunity to review the statement. I hope you will find these comments useful in preparing the final statement.

Sincerely,

STATE PLANNING DIVISION

Nicholas D. Lewis
Assistant Director

NDL:dc

Enclosures



WASHINGTON
Department of
FISHERIES

ANIEL J. EVANS
GOVERNOR

ROOM 115, GENERAL ADMINISTRATION BUILDING • PHONE 753-6600
OLYMPIA, WASHINGTON 98504

THOR C. TOLLEFSON
DIRECTOR

May 21, 1974

Office of Program Planning & Fiscal Management
House Office Building
Olympia, Washington 98504

Attention Mike Mills, State Planning Division

RE: Draft Environmental Impact Statement - Corps - Mill Creek Project.

Gentlemen:

The draft environmental Impact Statement has been reviewed. The considerations deal mainly with operational changes within the bounds of existing control structures.

The Department of Fisheries would have no objection to the proposed change in operational or maintenance controls. These actions would not have any effects on salmon fishery uses.

We have been aware of the flooding problems of this area. The excessive instantaneous runoff conditions are further aggravated by limited drain channel capacities. Encroachment by development of property to the very bank line edge of the streams and channels limits alternatives. We would ask if any consideration has been made for reservoir sealant to prevent seepage; if this is considered as an adverse aspect.

We appreciate the opportunity to comment on this project.

Very truly yours,

DEPARTMENT OF FISHERIES
Thor C. Tollefson, Director

Ralph B. Anderson
Ralph B. Anderson, Asst. Chief
Stream Improvement & Hydraulics

RBA:ljf

cc: Department of Game
Gil Holland - M&R

GOVERNOR
DANIEL J. EVANS

COMMISSIONERS:
JEFF D. DOMASKIN
THOMAS C. GARRETT
MRS. KAY GREEN
RALPH E. MACKAY
JAMES G. McCURDY
JAMES W. WHITTAKER
WILFRED R. WOODS

DIRECTOR
CHARLES H. ODEGAARD



WASHINGTON STATE
PARKS & RECREATION COMMISSION

LOCATION: THURSTON AIRINDUSTRIAL CENTER

PHONE 753-5755

P. O. BOX 1128

OLYMPIA, WASHINGTON 98504

May 15, 1974

Mr. Mike Mills, State Planning Division
Office of Program Planning and Fiscal Management
House Office Building
Olympia, Washington 98504

Draft EIS - Mill Creek Project

Dear Mr. Mills:

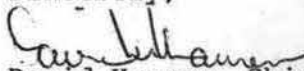
The Washington State Parks and Recreation Commission has reviewed the above-noted document and can find no adverse impact on existing or proposed recreational areas under the jurisdiction of the Commission.

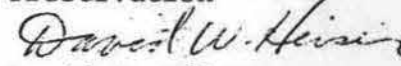
This statement does not give an indication of what type of research was done to determine the location and value of possible archeological or historical sites. There is no indication that a qualified person was able to survey the proposed project sites. Further, staff finds that this proposed action has no impact on known historical sites (sites either on/or proposed for the State or National Registers of Historic Places). The Registers, however, provide only a small amount of information and should not be construed to be a complete inventory.

In short, it appears that this statement does not adequately identify whether or not significant archeological or historical sites are located in the area where the proposed action will occur.

Thank you for the opportunity to review and comment on this statement.

Sincerely,


David Hansen, Chief of
Archeology and Historic
Preservation


David W. Heiser,
Assistant Chief
Research, Planning
and Acquisition



STATE OF WASHINGTON

Department of
Natural Resources

COMMISSIONER
BERT COLE
DON LEE FRASER
SUPERVISOR

OLYMPIA, WASHINGTON
98504

May 13, 1974



Mike Mills, Administrative Assistant
State Planning Division
OPP & FM
Olympia, WA 98504

Dear Mr. Mills:

The Department of Natural Resources has reviewed the draft environmental impact statement for the proposed Mill Creek Project, prepared by the Corps of Engineers. We have no comments to make regarding this statement.

We appreciate having an opportunity to review this proposal.

Sincerely,

BERT L. COLE
Commissioner of Public Lands


Bruce W. Reeves
Executive Assistant

BWR:dj



EXPO 74

8076



Director / Carl N. Crouse

Assistant Directors / Ralph W. Larson
Ronald N. Andrews

Game Commission

Arthur S. Coffin, Yakima, Chairman
James R. Agen, LaConner
Elmer G. Gerken, Quincy
Claude Bekins, Seattle
Glenn Galbraith, Wellpinit
Frank L. Cassidy, Jr., Vancouver

DEPARTMENT OF GAME

600 North Capitol Way / Olympia, Washington 98504

May 21, 1974

Mr. Mike Mills
State Planning Division
Office of Program Planning & Fiscal Management
House Office Building
Olympia, Washington 98504

Attention: Corps of Engineers, Walla Walla District

Dear Mr. Mills:

Your draft environmental impact statement - Mill Creek Project - was reviewed as requested; comments follow.

Your report points out the unavoidable necessity of continued maintenance and operation of the Mill Creek Flood Control Project and recreational facilities. It appears imperative that seepage problems be remedied, and impact to Garrison Creek be minimized in accordance with its limited capacity to absorb present impacts from water diversion.

The covered pipeline system is preferable to the open channel method. Improvement of the recreational facilities is admirable compensation for land removed by Mill Creek Reservoir. Mention should be made, however, of plans to insure that surface water runoff from the proposed paved parking lot will not degrade water quality.

Indication of an active environmental awareness was shown throughout the report. Preservation of the multitude of aesthetic and wildlife amenities, as well as protection of Walla Walla residents from flood-related damage, should continue to maintain a harmonious balance. We suggest plans for a future improvement of water quality in Mill Creek and the reservoir should be prepared and implemented.

Thank you for the opportunity to review your draft statement. We hope our comments will be of benefit in preparation of your final document.

Sincerely,

THE DEPARTMENT OF GAME

E. S. Dziedzic

Eugene S. Dziedzic, Asst. Chief
Environmental Management Division

ESD:jb
cc: Kirkendall
Agencies

WASHINGTON STATE
HIGHWAY COMMISSION
DEPARTMENT OF HIGHWAYS

Highway Administration Building
Olympia, Washington 98504 (206) 753-6005



Daniel J. Evans - Governor
C.H. Andrews - Director

May 15, 1974

Mr. Wallace G. Miller, Director
Office of Program Planning
and Fiscal Management
106 House Office Building
Olympia, Washington 98504

Attn: Mr. Mike Mills

Mill Creek Project
Corps of Engineers
Draft Environmental Statement

Gentlemen:

Reference is made to your transmittal letter dated April 24, requesting our review of the Draft Environmental Statement for the above referenced project.

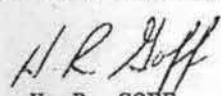
Our review of the subject document indicates the proposed project will have a minimal effect on existing or planned highway facilities in the Walla Walla area.

It would appear that our interest would be benefitted by the proposed project since better regulation of flood flows would provide added insurance against damage to existing highway/stream crossing structures.

Thank you for the opportunity to review this information.

Sincerely,

G. H. ANDREWS
Director of Highways


By: H. R. GOFF
Assistant Director for
Planning, Research and State Aid

GHA:eh
HRG

A. H. Parker Chairman
Bellingham

Harold Walsh
Everett

Baker Ferguson
Walla Walla

Virginia K. Gurby
Seattle

Howard Sorensen
Ellensburg

Harold L. Boulac
Seattle 907

WASHINGTON STATE

DEPARTMENT OF COMMERCE
AND ECONOMIC DEVELOPMENT
GENERAL ADMINISTRATION
DEPARTMENT BUILDING

DEVELOPING THE ECONOMY THRU • TOURISM • INDUSTRY • RESEARCH • FOREIGN TRADE • NUCLEAR PROGRESS



David I. Evans GOVERNOR

May 13, 1974

TO: Mike Mills, State Planning Division
Office of Program Planning & Fiscal Management

FROM: John E. Harter, Special Program Coordinator *JH*
Industrial Development Division

I have reviewed the Mill Creek project Environmental Impact Statement prepared by the U.S. Army Corps of Engineers and do not wish to comment on this.

IE:16/6



expo'74
World's Fair
Spokane, USA
May-Oct., 1974

SEATTLE OFFICE:
312 FIRST AVE. NO. (98109)

SPOKANE OFFICE:
ROOM 307, GREAT WESTERN BLDG. (99201)

May 27, 1974

State of
Washington
Department
of Ecology



State of Washington
Office of Program Planning
and Fiscal Management
House Office Building
Olympia, Washington 98504

Attention: Mike Mills, State Planning Division

Subject: Draft EIS - Mill Creek Project
Walla Walla

Gentlemen:

In accordance with regulations under the National Environmental Policy Act, our comments follow on the draft impact statement by the Corps of Engineers regarding the operation and maintenance of the Mill Creek Project.

The draft EIS appears to present adequately, in a comprehensive and objective fashion, the environmental impacts and alternatives to the proposed project. It is especially impressive to see such an excellent use of photos and maps throughout the statement for illustrative purposes. These greatly facilitated understanding of the project and the environmental impacts involved.

A Shoreline Management Permit and Flood Control Permit may be required by the State prior to initiation of the canal rehabilitation section of the project.

Thank you for the opportunity to review the draft environmental impact statement. Should you have any questions regarding these comments, please contact Mr. Hugh H. Graham of our Environmental Review and Evaluation Section.

Sincerely,

A handwritten signature in cursive script that reads "Fred D. Hahn".

Fred D. Hahn, Assistant Director
Planning and Program Development

FDH:sm



United States Department of the Interior

OFFICE OF THE SECRETARY
PACIFIC NORTHWEST REGION
P.O. Box 3621, Portland, Oregon 97208

May 29, 1974

ER-74/587

Colonel Nelson P. Conover
District Engineer
Walla Walla District, Corps of Engineers
Department of the Army
Building 602, City-County Airport
Walla Walla, Washington 99362

Dear Colonel Conover:

We have reviewed the draft environmental statement on Mill Creek Flood Protection Project, Walla Walla County, Washington. Our comments are as follows:

GENERAL COMMENTS

The general area involved was at one time occupied by the Cayuse Indians and has some general historic value. It is possible that excavation will encounter burial grounds or other areas having significant artifacts. If this should be the case, we recommend that the responsible entity contact the Chairman of Confederated Tribes of the Umatilla Indian Reservation, Route 1, Box 189, Pendleton, Oregon 97801, for disposition of artifacts found. The Cayuse Indians were one of the tribes which now make up the Confederated Tribes of the Umatilla Reservation.

SPECIFIC COMMENTS

Pages 1-4 -- The description of the action is an inadequate definition of the character of the rehabilitation of a return outlet canal to Mill Creek and the replacement of an abandoned open canal with buried pipe. A thorough discussion of these structural measures should be included.

Page 6, bottom of page -- We suggest deleting the definitions in the Geology section. If further description is essential, we suggest, "Areas have been subjected to differential internal pressures

which have resulted in block uplifts, bending of lava flows; readjustments of lava bed slopes; and vertical, sloping, or horizontal displacements of various lava beds caused by movement along fractures and joints in the basalt."

We appreciate the opportunity afforded us for reviewing this draft environmental statement. If we can be of further assistance in this review, please let us know.

Sincerely yours,

Roy H. Sampsel

Roy H. Sampsel *ap*
Special Assistant
to the Secretary

cc:
Assistant Secretary--Program Development
and Budget
Council on Environmental Quality (10)
Director, Office of Environmental Project
Review
Commissioner, Bureau of Reclamation
Commissioner, Bureau of Indian Affairs
Director, Bureau of Land Management
Director, National Park Service
Director, Bureau of Outdoor Recreation
Director, Bureau of Mines
Director, Geological Survey
Director, Bureau of Sport Fisheries & Wildlife
Regional Director, Pacific Northwest Region,
Bureau of Reclamation
Area Director, Portland Area Office, Bureau
of Indian Affairs
State Director, Bureau of Land Management,
Oregon
Regional Director, Pacific Northwest Region,
National Park Service
Regional Director, Pacific Northwest Region,
Bureau of Outdoor Recreation
Chief, Western Field Operation Center,
Bureau of Mines
District Chief, WRD, Geological Survey, Washington
Regional Director, Pacific Northwest Region,
Bureau of Sport Fisheries & Wildlife

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Room 360 U.S. Courthouse, Spokane, Washington 99201

May 23, 1974

Nelson P. Conover, Colonel, CE
District Engineer
Department of the Army
Walla Walla District, Corps of Engineers
Bldg. 602, City-County Airport
Walla Walla, Washington 99362

Re: Review of Environmental Impact Statement Draft;
Corps of Engineers, Mill Creek Flood Protection Project

Dear Sir:

This environmental impact statement draft was reviewed by our personnel at the field and state level. This letter takes all of their comments into account. Some problems pointed out were the debris removal system on existing diversions and a water seepage problem below the dam.

The EIS satisfies environmental impact considerations about the project. We have appreciated the opportunity to make this review.

Sincerely,

 ACTING

Galen S. Bridge
State Conservationist

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION X

1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101



REPLY TO
ATTN OF:

10E1 - M/S 325

May 31, 1974

Colonel Nelson P. Conover, P.E.
Department of The Army
Walla Walla District, Corps of Engineers
Building 602, City-County Airport
Walla Walla, Washington 99362

Dear Colonel Conover:

We have reviewed the draft environmental impact statement for the proposed Mill Creek project.

We foresee no **adverse** environmental impacts other than those discussed in the **draft statement**.

Thank you **for the opportunity** to review this draft statement.

Sincerely,

Assistant Regional Administrator
for Management

Appendices

Appendix one-----Pertinent Project Data

Appendix two-----Game Fish Management

Appendix three-----Water Chemistry

Appendix four-----Wildlife

Appendix five-----Vegetation

Appendix six-----Public Use Rules and
Regulations

Appendix seven-----Letters Concerning
Archeological Resources

MILL CREEK

PERTINENT DATA

1. General

Location

State	Washington
Stream	Mill Creek
Miles above Walla Walla, Washington	3

2. Diversion Dam

Dike

Type	Rolled earth-fill
Crest length - feet	1,700
Crest width - feet	10
Crest elevation - m.s.l.	1,268
Maximum height - feet	23
Freeboard, standard project flood	3.0 feet

Diversion Spillway

Type	Ambursen, Ogee Crest
Length of crest - feet	250
Crest elevation - m.s.l.	1,261
Height - feet	14
Design discharge, (W.S. elev. 1,268)-c.f.s.	17,000

Sluice Gates

Type	Radial gates
Size - feet	6 x 8
Number	2
Elevation of sill - m.s.l.	1,247
Control	Manual, with portable gas engine drive

3. Head-works

Type	Radial gates
Size - feet	8 x 18
Number	4
Elevation of sill - m.s.l.	1,252
Control	Manual

4. Intake Canal

Type	Trapezoidal concrete-lined
Size	
Bottom width - feet	60
Side slopes	1 on 1
Capacity - c.f.s.	7,000
Length - feet	1,800

Off-Stream Storage Works

5. Reservoir

Full pool elevation - m.s.l.	1,265
Pool area at elevation 1265 - acres	225
Storage at elevation 1265 - acre-feet	8,200

6. Storage Dam

Type	Rolled earth-fill
Crest length - feet	3,050
Crest width - feet	20
Side slopes - upstream	1 on 4
Side slopes - downstream	1 on 3
Crest elevation	1,270
Maximum height	120

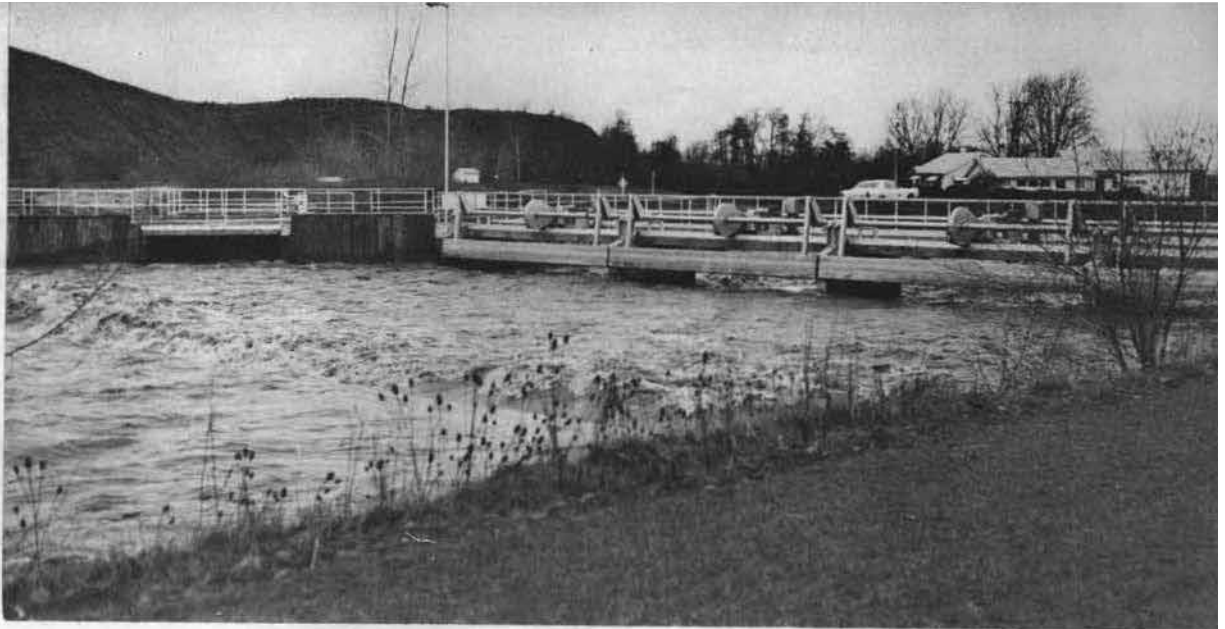
7. Outlet Works

Type	Steep pipe
Size	
Beneath dam	
Diameter - inches	42
Length - feet	900
To Russell Creek	
Diameter - inches	36
Length - feet	125
Capacity at elevation 1265 - c.f.s	260
Capacity elevation 1186.0 - c.f.s	150

Elevation of intake sill - m.s.l.

Gates

Upstream toe of dam	Circular slide
Diameter - inches	54
To Russell Creek	Howell-Bunger
Diameter - inches	36



First Division Works

Downstream Division Works

8. First Division Works

Type	Wood needle
Size of openings	
Mill Creek	
Total width of openings - feet	97
Height - feet	6
To Yellowhawk and Garrison Creeks	
Total width of openings - feet	46
Height - feet	6

9. Second Division Works

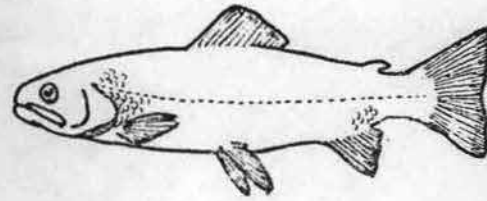
Type	Wood needle
Size of openings - feet	
Yellowhawk Creek	
Total width of openings - feet	32
Height - feet	5.75
Garrison Creek	
Width - feet	17.5
Height - feet	5.75



upper: intake channel headworks at the diversion dam. The forebay, cleared of vegetation and filled with high water, is in the background.

middle:-storage dam and lake

left: diversion dam with the intake channel leading toward the lake. The forebay area, left of the spillway, is here filled with willow growth.



GAME FISH MANAGEMENT

MILL CREEK RESERVOIR

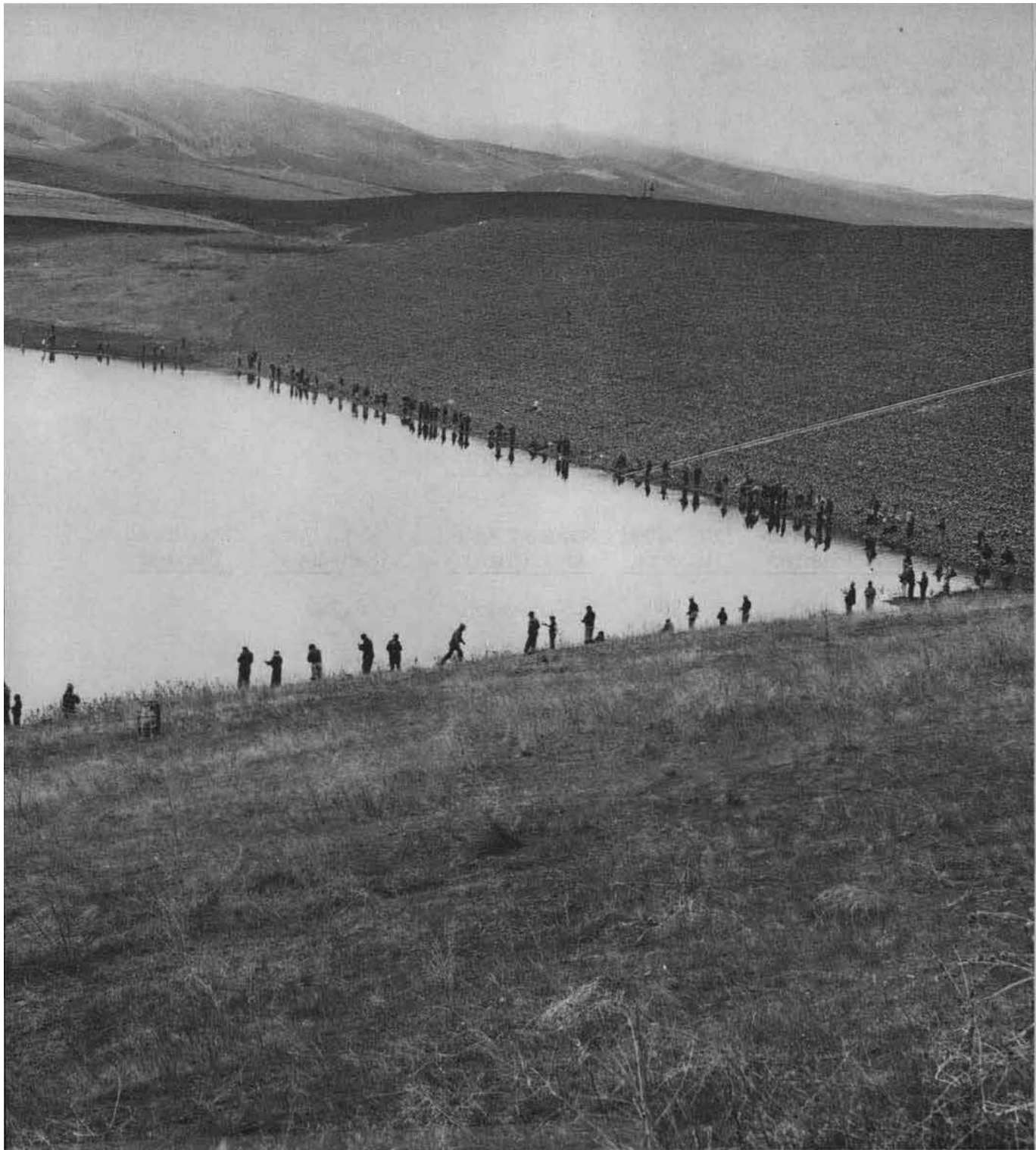
<u>Year</u>	<u>Number Rain- bow Planted</u>	<u>Estimated Harvest</u>	<u>Success Rate (Fish/man)</u>	<u>Est. Use (Man-days)</u>	<u>Steelhead Harvest</u>
1966	17,000	14,500	2.54/season	5,700	
1967	--	--	--	--	
1968	15,000	11,150	2.75/season	4,055	
1969	14,100	8,200	3.04/season	2,700	
1970	16,284	11,340	4.00/season	2,835	
1971	15,050	--	3.80/season	--	
1972	9,159	1,790	0.20/opening day 1.65/season	1,080	
1973	13,599	--	6.20 opening day	--	

MILL CREEK

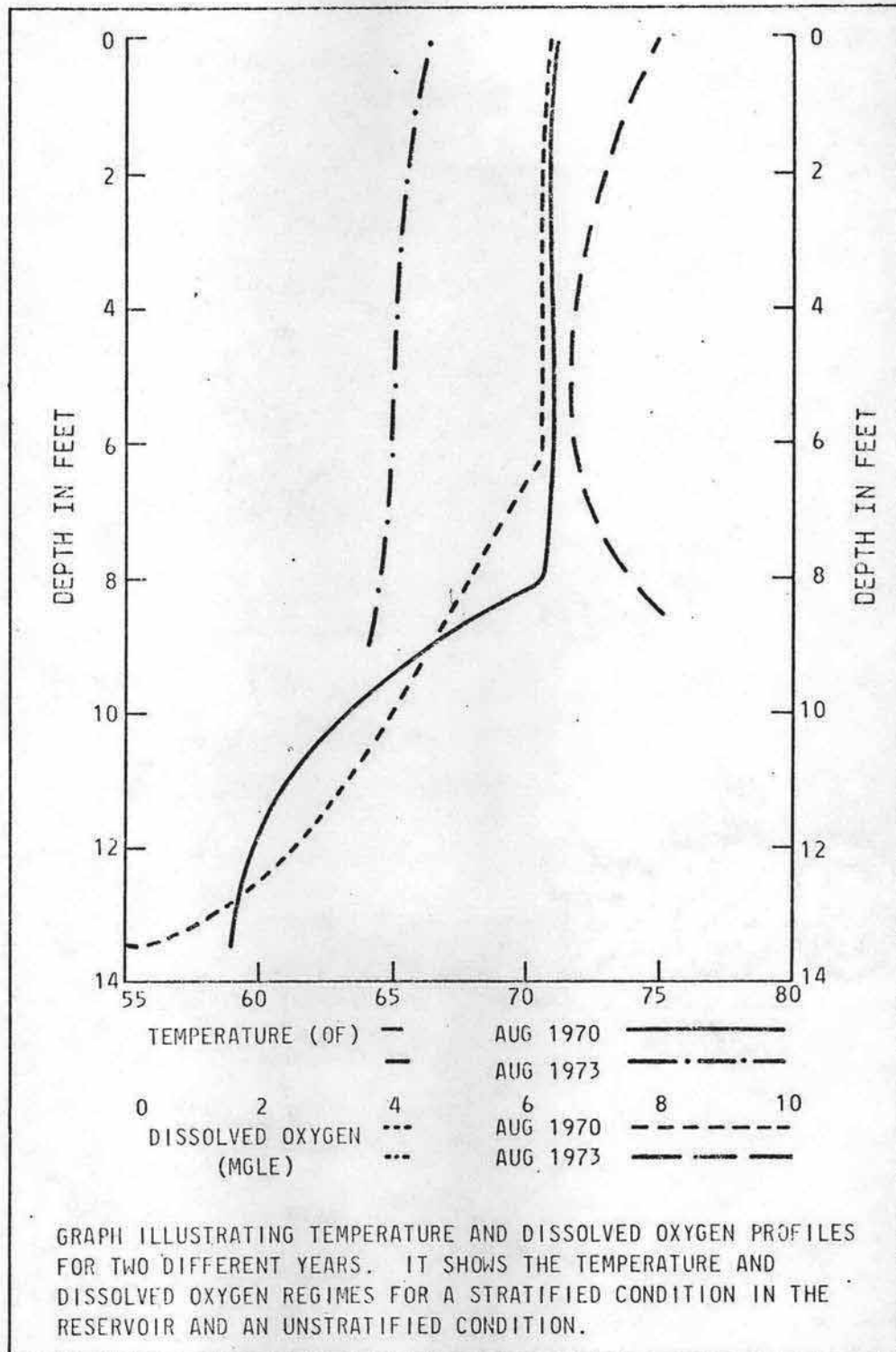
1965	--	--	--	--	12
1966	12,200	12,336	1.27/season	9,670	21
1967	--	--	--	--	24
1968	10,910	10,210	1.43/season	7,140	--
1969	12,100	10,600	1.60/season	6,630	29
1970	13,785	10,800	2.25/season	4,800	21
1971	13,585	--	4.4/opening day	--	40
1972	9,600	4,700	3.6/opening day 3.0/season	1,570	--
1973	(No plant)	--	2.43 opening day	--	--

-- No data

Information provided by the Washington State Department of Game.



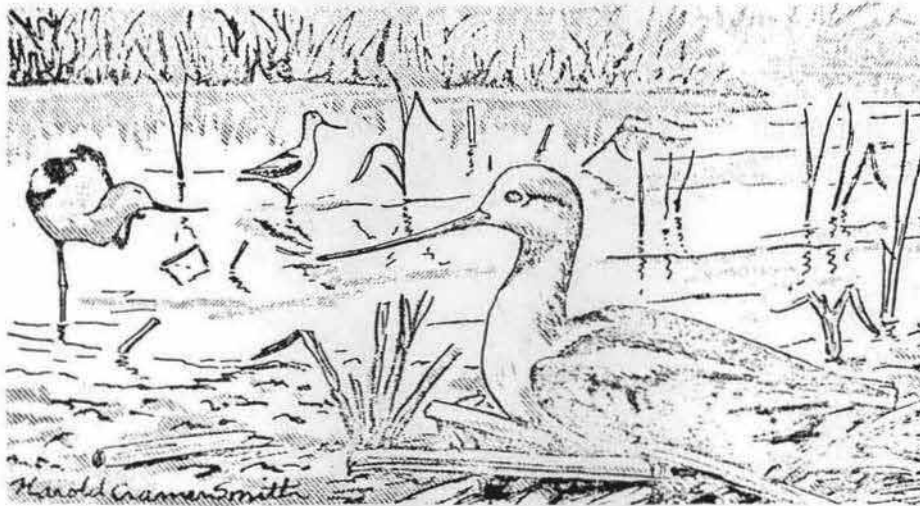
Opening Day Fishing - April 1957



WILDLIFE OF MILL CREEK

BIRDS

Red-Throated Loon	Chukar (planted)
Great Blue Heron	Hungarian Partridge
Black-Crowned Night Heron	American Coot
Whistling Swan	Killdeer
Canada Goose	Common Snipe
Mallard	Greater Yellowlegs
American Widgeon	Long-Billed Dowitcher
Shoveler	Wilson's Phalarope
Wood Duck	American Avocet
Bufflehead	California Gull
Common Merganser	Ring-Billed Gull
Red-Tailed Hawk	Rock Dove
Marsh Hawk	Mourning Dove
Swainson's Hawk	Barn Owl
Cooper's Hawk	Screech Owl
Sharp-Shinned Hawk	Pygmy Owl
Goshawk	Snowy Owl
Ferruginous Hawk	Long-Eared Owl
Prairie Falcon	Short-Eared Owl
American Kestrel (Sparrow Hawk)	Saw-Whet Owl
California Quail	Common Nighthawk
Ring-Necked Pheasant	Townsend's Warbler

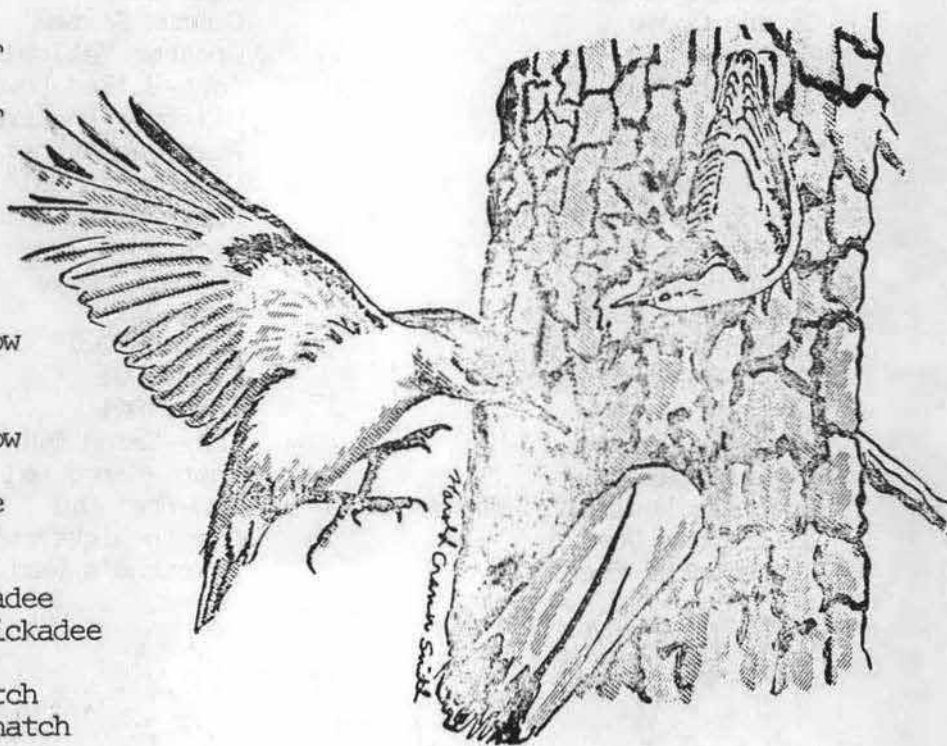


American Avocet
Oregon Wildlife Commission sketch

WILDLIFE OF MILL CREEK (Cont'd)

BIRDS (Cont'd)

Yellow-Breasted Chat
Vaux's Swift
Black-Chinned Hummingbird
Rufous Hummingbird
Calliope
Belted Kingfisher
Red-Shafted Flicker
 (Common Flicker)
Pileated Woodpecker
Lewis' Woodpecker
Downy Woodpecker
Hairy Woodpecker
Western Kingbird
Eastern Kingbird
Say's Phoebe
Violet-Green Swallow
Tree Swallow
Bank Swallow
Rough-Winged Swallow
Stellar's Jay
Black-Billed Magpie
Common Raven
Common Crow
Black-Capped Chickadee
Chestnut-Backed Chickadee
Mountain Chickadee
Red-Breasted Nuthatch
White-Breasted Nuthatch
Brown Creeper
House Wren
Winter Wren
Robin
Varied Thrush
Hermit Thrush
Western Bluebird
Mountain Bluebird
Townsend's Solitaire
Ruby-Crowned Kinglet
Golden-Crowned Kinglet
Bohemian Waxwing
Cedar Waxwing



White-breasted Nuthatch
Oregon Wildlife Commission sketch

WILDLIFE OF MILL CREEK (Cont'd)

BIRDS (Cont'd)

Northern Shrike	Dark-Eyed Junco (Oregon Junco)
Figurehead Shrike	Golden-Crowned Sparrow
Starling	Fox Sparrow
Red-Eyed Vireo	House Sparrow
Yellow Warbler	Western Meadowlark
Yellow-Rumped Warbler	Red-Winged Blackbird
(Audubon's Warbler)	Brewer's Blackbird
MacGillivray's Warbler	Black-Headed Grosbeak
Yellowthroat	Purple Finch
Yellow-Headed Blackbird	House Finch
Northern Oriole	Pine Siskin
(Bullock's Oriole)	Rufous-Sided Towhee
Brown-Headed Cowbird	White-Crowned Sparrow
Evening Grosbeak	Song Sparrow
Cassin's Finch	Savannah Sparrow
Gray-Crowned Rosy Finch	
American Goldfinch	

* Bird List was prepared with the aid of the Blue Mountain Audubon Society.

MAMMALS

Little Brown Bat
Coyote
Mink
Beaver
Cottontail Rabbit
White-Tailed Deer
Pacific Mole
Badger
Raccoon
Vagrant Shrew
White-Footed Mouse
Meadow Mouse
Striped Skunk
Pocket Gopher
Columbia Ground Squirrel
Hoary Bat
Silver-Haired Bat



WILDLIFE OF MILL CREEK (Cont'd)

REPTILES AND AMPHIBIANS

Blue-Tailed Skink
Fence Lizard
Tree Toads
Leopard Frog
Western Garter Snake
Gopher Snake
Racer
Western Painted Turtle

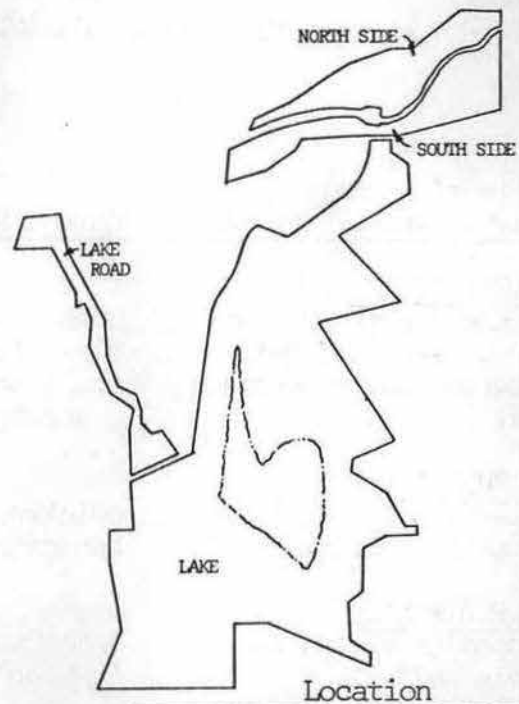
FISH

Large-Scale Sucker
Fine-Scale Sucker
Red-Side Shiner
Chiselmouth
Sculpin (1 to 3 species)
Speckled Dace
Leopard Dace (possibly)
Brook Lamprey
Brown Bullhead
Rainbow Trout
Steelhead (in the creek only)

A few bass and crappie were recently stocked in Mill Creek lake.

appendix five

MILL CREEK VEGETATION



Abundance Rating Key:

- R = Rare
- O = Occasional
- C = Common
- A = Abundant

Scientific Name (Family, Genus, & Species)	Common Name	Location			
		North Side	Lake Road	Lake	South Side
<u>ACERACEAE</u>					
<i>Acer glabrum</i> , Torr. var. <i>douglasii</i> (Hook.) Dippel	Douglas' maple		R		C
<u>ANACARDIACEAE</u>					
<i>Rhus glabra</i> , L.	smooth sumac	C	O	O	C
<u>APOCYNACEAE</u>					
<i>Apocynum cannabinum</i> , L.	Common dogbane			R	
<u>ASCLEPIADACEAE</u>					
<i>Asclepias speciosa</i> , Torr.	showy milkweed		R	O	O
<u>BETULACEAE</u>					
<i>Alnus rhombifolia</i> , Nutt.	white alder	C			O
<u>BORAGINACEAE</u>					
<i>Amsinckia lycopoides</i> , Lehm.	tarweed fiddle- neck	R	C	C	C
<i>Amsinckia retrorsa</i> , Suksd.	rigid fiddle- neck		R	R	R

MILL CREEK VEGETATION (Cont'd)

Scientific Name (Family, Genus, & Species)	Common Name	Location			
		North Side	Lake Road	Lake	South Side
		Abundance Rating			
<u>CAPRIFOLIACEAE</u>					
<i>Lonicera utahensis</i> , Wats.	Utah honeysuckle		0	C	
<i>Sambucus cerulea</i> , Raf.	blue elderberry	C	C	0	C
<i>Symphoricarpos oreophilus</i> , Gray	mountain snowberry	C	C	C	C
<u>CARYOPHYLLACEAE</u>					
<i>Stellaria media</i> (L.) Cyrill.	chickweed		R		
<i>Saponaria officinalis</i> , L.	bouncing bett		C		
<u>CHENOPODIACEAE</u>					
<i>Chenopodium album</i> , L.	lambsquarter		R	0	0
<i>Salsola kali</i> , L.	Russian thistle		R	0	C
<u>COMPOSITAE</u>					
<i>Achillea millefolium</i> , L.	common yarrow		0	C	0
<i>Anthemis cotula</i> , L.	mayweed chamomile		0	0	0
<i>Arctium minus</i> (Hill), Bernh.	common burdock		0	0	0
<i>Centaurea cyanus</i> , L.	cornflower		0		0
<i>Centaurea solstitialis</i> , L.	yellow star- thistle		0	C	A
<i>Chrysopsis villosa</i> (Pursh) Nutt.	hairy goldaster			0	C
<i>Cichorium intybus</i> , L.	wild succory		0		0
<i>Cirsium avense</i> , (L.) Scop.	Canada thistle		R	R	0
<i>Cirsium vulgare</i> , (Savi) Tenore	common thistle				0
<i>Gaillardia aristata</i> , Pursh.	blanket-flower			R	
<i>Grindelia squarrosa</i> (Pursh) Dunal	resin-weed				R
<i>Helianthus annuus</i> , L.	common sunflower				0
<i>Lactuca serriola</i> , L.	prickly lettuce		C	C	C
<i>Matricaria matricarioides</i> (Less.) Porter	pineapple-weed		A	C	C
<i>Onopordum acanthium</i> , L.	Scotch thistle		0	C	0
<i>Solidago gigantea</i> , Ait.	smooth goldenrod				0
<i>Solidago species</i> , L.	goldenrod		0		0
<i>Sonchus oleraceus</i> , L.	common sow- thistle		0		R

MILL CREEK VEGETATION (Cont'd)

Scientific Name (Family, Genus, & Species)	Common Name	Location			
		North Side	Lake Road	Lake Side	South Side
		Abundance Rating			
<u>COMPOSITAE (Cont'd)</u>					
<i>Taraxacum officinale</i> , Weber	common dandelion	C	0	0	0
<i>Tragopogon dubius</i> , Scop.	yellow salsify	C	C	A	C
<i>Tragopogon pratensis</i> , L.	meadow salsify	R			R
<u>CONVOLVULACEAE</u>					
<i>Convolvulus arvensis</i> , L.	field morning-glory	0	C	A	C
<u>CORNACEAE</u>					
<i>Cornus stolonifera</i> , Michx.	creek dogwood				R
<u>CRUCIFERAE</u>					
<i>Capsella bursa-pastoris</i> (L.) Medic	shepherd's-purse	R	0		0
<i>Conringia orientalis</i> (L.) Dumort.	hare's-ear mustard	0	C	C	0
<i>Lepidium perfoliatum</i> , L.	clasping peppergress	R	0		0
<i>Sisymbrium altissimum</i> , L.	Jim Hill mustard	C	C	A	C
<i>Sisymbrium officinale</i> (L.) Scop.	hedge mustard	0			0
<u>CUPRESSACEAE</u>					
<i>Juniperus sabina</i> , L.	tam juniper	R			
<i>Juniperus scopulorum</i> , Sarg.	Rocky Mountain juniper	R			
<u>DIPSACACEAE</u>					
<i>Dipsacus sylvestris</i> , Huds.	Gypsy-combs	0	C	C	C
<u>ELAEAGNACEAE</u>					
<i>Elaeagnus angustifolia</i> , L.	Russian olive	R	C	C	0
<u>EQUISETACEAE</u>					
<i>Equisetum arvense</i> , L.	common horsetail	C			0
<i>Equisetum laevigatum</i> , A. Br.	smooth scouring-rush	0	0	C	0
<u>GERANIACEAE</u>					
<i>Erodium cicutarium</i> (L.) L'Her	alfilaria	0	C	C	C
<i>Geranium viscosissimum</i> , Fisch. & Mey.	geranium				0

MILL CREEK VEGETATION (Cont'd)

Scientific Name (Family, Genus, & Species)	Common Name	Location			
		North Side	Lake Road	Lake Side	South Side
		Abundance		Rating	
<u>GRAMINEAE</u>					
Agropyron elongatum (Host.) Beauv.	tall wheatgrass	0	C	C	C
Agropyron species, Gaertn.	wheatgrass	C	C	C	C
Avena fatua, L.	wild oat	0	A	A	A
Bromus brizaeformis, Fisch. & Mey.	rattlesnake grass			R	
Bromus rigidus, Roth.	ripgut	A	A	A	A
Bromus tectorum, L.	cheat grass	A	A	C	A
Dactylis glomerata, L.	orchard-grass	0	0	0	0
Elymus cinereus, Scribn. & Merr.	giant wildrye	R	R	R	R
Elymus glaucus, Buckl.	blue wildrye	C	C	C	C
Eragrostis pectinacea (Michx.)	purple eragrostis	0			
Festuca idahoensis, Elmer	Idaho fescue	0			
Festuca species, L.	fescue-grass	0	0	C	0
Hierochloe odorata (L.) Beauv.	sweetgrass	0			
Hordeum leporinum, Link.	charming barley	A	A	A	A
Lolium perenne, L.	perennial ryegrass	0			
Panicum capillare, L.	common witchgrass				0
Phalaris arundinacea, L.	reed canarygrass	C	0	0	C
Phleum pratense, L.	common timothy	0			
Poa compressa, L.	Canada bluegrass	0			
Poa juncifolia, Scribn.	alkali bluegrass		C	C	0
Poa pratensis, L.	Kentucky bluegrass	C	0	0	0
Poa species, L.	bluegrass	C	C	C	C
Secale cereale, L.	cultivated rye	C	0		
Triticum aestivum, L.	cultivated wheat	0	C	0	R
<u>GUTTIFERAE</u>					
Hypericum perforatum, L.	Klamath weed	0	R	0	C
<u>HYDRANGEACEAE</u>					
Philadelphus lewisii, Pursh.	mockorange	C	0		C
<u>HYDROPHYLLACEAE</u>					
Phacelia hastata, Dougl. var. leucophylla (Torr.) Cronq.	whiteleaf phacelia	R			

MILL CREEK VEGETATION (Cont'd)

Scientific Name (Family, Genus, & Species)	Common Name	Location			
		North Side	Lake Road	Lake Side	South Side
		Abundance Rating			
<u>JUNCACEAE</u>					
<i>Juncus drummondii</i> , E. Meyer	Drummond's rush	R			
<i>Juncus ensifolius</i> , Wikst.	dagger-leaf rush	R			R
<i>Luzula campestris</i> (L.)DC.	Sweep's brush	R			
<u>LABIATAE</u>					
<i>Marrubium vulgare</i> , L.	horehound	C			C
<i>Mentha piperita</i> , L.	peppermint	O			O
<i>Mentha spicata</i> , L.	spearmint	R			
<i>Nepeta cataria</i> , L.	catnip	O	R	R	R
<i>Prunella vulgaris</i> , L.	self-heal	O			
<u>LEGUMINOSAE</u>					
<i>Amorpha fruticosa</i> , L.	bastard indigo	R			R
<i>Caragana arborescens</i> , Lam.	pea tree		C	C	
<i>Lathyrus pauciflorus</i> , Fern.	few-flowered peavine		R		
<i>Lupinus leucophyllus</i> , Dougl.	velvet lupine		C	O	O
<i>Medicago lupulina</i> , L.	black medic	C	O	C	C
<i>Medicago sativa</i> , L.	alfalfa	O	O	A	C
<i>Melilotus officinalis</i> , (L.) Lam.	yellow sweet-clover		O	C	C
<i>Robina pseudo-acacia</i> , L.	black locust	C	R	O	C
<i>Trifolium latifolium</i> , (Hook.) Greene	twin clover	A			
<i>Vicia villosa</i> , Roth.	hairy vetch			C	O
<u>LEMNACEAE</u>					
<i>Lemna minor</i> , L.	duckweed	O			
<u>LILIACEAE</u>					
<i>Asparagus officinalis</i> , L.	asparagus	R	R	R	R
<u>MALVACEAE</u>					
<i>Tiliamna rivularis</i> , (Dougl.) greene var. <i>rivularis</i>	streambank globemallow	O			O
<i>Malva neglecta</i> , Wallr.	dwarf mallow	O			O
<u>ONAGRACEAE</u>					
<i>Epilobium paniculatum</i> , Nutt.	autumn willow-herb	R	O	R	O

MILL CREEK VEGETATION (Cont'd)

Scientific Name (Family, Genus, & Species)	Common Name	Location			
		North Side	Lake Road	Lake Side	South Side
		Abundance Rating			
<u>PAPAVERACEAE</u>					
<i>Papaver rhoeas</i> , L.	corn poppy				R
<u>PINACEAE</u>					
<i>Pinus nigra</i> , Arnold	Austrian pine	R	O	C	R
<u>PLANTAGINACEAE</u>					
<i>Plantago lanceolata</i> , L.	English plantain	O	C	C	C
<i>Plantago major</i> , L.	common plantain	O			
<u>POLEMONIACEAE</u>					
<i>Collomia linearis</i> , Nutt.	narrow-leaf collomia				R
<u>POLYGONACEAE</u>					
<i>Polygonum aviculare</i> , L.	doorweed	O	O	C	C
<i>Rumex acetosella</i> , L.	sheep sorrel	O	O	O	O
<i>Rumex crispus</i> , L.	curly dock	C	C	C	C
<i>Rumex salicifolius</i> , Weinm.	willow dock	O	O	O	O
<u>PORTULACACEAE</u>					
<i>Montia perfoliata</i> , (Donn) Howell	miner's lettuce	R			
<u>POLYPODIACEAE</u>					
<i>Pteridium aquilinum</i> (L.) Kuhn.	bracken	R			R
<u>RANUNCULACEAE</u>					
<i>Clematis ligusticifolia</i> , Nutt.	western clematis	C	O	O	C
<i>Ranunculus repens</i> , L.	creeping buttercup	R			
<u>ROSACEAE</u>					
<i>Amelanchier alnifolia</i> , Nutt.	western serviceberry		O	C	O
<i>Crataegus columbiana</i> , Howell	Columbia haw				R
<i>Crataegus douglasii</i> , Lindl.	black haw	O	C	O	O
<i>Prunus avium</i> , L.	sweet cherry	R			
<i>Prunus cerasus</i> , L.	sour cherry	R			
<i>Prunus domestica</i> , L.	cultivated plum		C	C	
<i>Prunus virginiana</i> , L.	common chokecherry	C	O	C	C

MILL CREEK VEGETATION (Cont'd)

Scientific Name (Family, Genus, & Species)	Common Name	Location			
		North Side	Lake Road	Lake Side	South Side
		Abundance Rating			
<u>ROSACEAE</u> (Cont'd)					
<i>Pyrus communis</i> , L.	cultivated pear			R	
<i>Pyrus malus</i> , L.	cultivated apple	R	R		R
<i>Rosa multiflora</i> , Thunb.	cultivated rose		C	C	
<i>Rosa nutkana</i> , Presl.	bristly Nootka rose	C	O	O	O
<i>Rosa woodsii</i> , Lindl.	woodland rose	O	O		O
<i>Rubus idaeus</i> , L.	red raspberry				R
<i>Rubus laciniatus</i> , Willd.	evergreen blackberry	R			
<i>Rubus parviflorus</i> , Nutt.	thimbleberry				O
<i>Rubus ursinus</i> , Cham. & Schlecht.	Douglasberry	O			O
<u>RUBIACEAE</u>					
<i>Galium aparine</i> , L.	cleavers	O	O	O	C
<u>SALICACEAE</u>					
<i>Populus trichocarpa</i> , T.&G.	black cottonwood	C	C	O	C
<i>Salix bebbiana</i> , Sarg.	Bebb willow	R			
<i>Salix exigua</i> , Nutt.	coyote willow	R		O	
<i>Salix lasiandra</i> , Benth.	Pacific willow	R		R	R
<i>Salix rigida</i> , Muhl.	Mackenzie willow	O			O
<u>SCROPHULARIACEAE</u>					
<i>Mimulus guttatus</i> , DC.	yellow monkey-flower	R			
<i>Verbascum blattaria</i> , L.	moth mullein	O			O
<i>Verbascum thapsus</i> , L.	common mullein	O	O		O
<i>Veronica americana</i> , Schwein	American brooklime	R			
<i>Veronica peregrina</i> , L.	purslane speedwell	R			
<u>SOLANACEAE</u>					
<i>Lycium halimifolium</i> , Mill.	matrimony vine		O	C	
<i>Solanum dulcamara</i> , L.	bittersweet	R		C	O
<u>TYPHACEAE</u>					
<i>Typha latifolia</i> , L.	common cattail	O		O	O
<u>ULMACEAE</u>					
<i>Celtis reticulata</i> , Torr.	hackberry			R	
<i>Ulmus parvifolia</i> , Jacq.	Chinese elm				R

MILL CREEK VEGETATION (Cont'd)

Scientific Name (Family, Genus, & Species)	Common Name	Location			
		North Side	Lake Road	Lake Rating	South Side
<u>UMBELLIFERAE</u>					
<i>Conium maculatum</i> , L.	poison-hemlock	C	R	0	C
<i>Daucus carota</i> , L.	wild carrot		R	0	0
<i>Heracleum maximum</i> , Bartr.	cow-parsnip				0
<i>Lomatium dissectum</i> , (Nutt.) Math. & Const.	fern-leaved lomatium	0		R	
<u>URTICACEAE</u>					
<i>Urtica dioica</i> , L.	stinging nettle	0			0
<u>VERBENACEAE</u>					
<i>Verbena bracteata</i> , Lag. & Rodr.	bracted verbena	0	R	0	0
<u>VITACEAE</u>					
<i>Parthenocissus quinque- folia</i> , Planch.	Virginia creeper	0			
<u>ZYGOPHYLLACEAE</u>					
<i>Tribulus terrestris</i> , L.	puncture-vine	R			0



FEDERAL RULES and REGULATIONS

Published in the Federal Register (36 CFR Chapter III)

- 327.1 **POLICY.** (a) It is the policy of the Secretary of the Army acting through the Chief of Engineers to provide the public with safe and healthful recreational opportunities within all water resource development projects administered by the Chief of Engineers.
(b) Unless otherwise indicated herein, the term "District Engineer" shall include the authorized representatives of the District Engineer.
(c) All water resource development projects open for recreational use shall be available to the public without regard to sex, race, creed, color or national origin. No lessee, licensee, or concessionaire providing a service to the public shall discriminate against any person or persons because of sex, race, creed, color or national origin in the conduct of his operations under the lease, license or concession contract.
- 327.2 **MOTOR VEHICLES.** (a) The operation and parking of motor vehicles, including off-road vehicles as set forth in paragraph (b) of this section, is prohibited on roadways of water resource development projects at those locations and at times designated by the District Engineer and marked by the posting of appropriate signs.
(b) The operation of off-road vehicles, including but not limited to motorcycles, minibikes, trail bikes, snowmobiles, dune buggies, all terrain vehicles, and other motor vehicles designed for or capable of cross-country travel on natural terrain, when operated off the roadways of water resource development projects is prohibited except at locations and at times designated by the District Engineer and marked by the posting of appropriate signs.
(c) No person shall operate any motor vehicle including off-road vehicles in a careless, negligent, or reckless manner so as to endanger any person or property.
- 327.3 **VESSELS.** (a) It shall be a violation of these regulations to operate any vessel for a fee or profit upon the waters of water resource development projects unless such operation is authorized by lease, license or concession contract with the Department of the Army. This paragraph shall not apply to the operation of vessels upon navigable waters of the United States.
(b) No vessel shall be operated in prohibited areas of a lake, reservoir, or other body of water. Such areas shall be designated by the District Engineer and marked by the posting of appropriate signs.
(c) No person shall operate any vessel or manipulate any water skis or other similar device in a careless, negligent or reckless manner so as to endanger any person or property.
(d) The construction of floating or stationary mooring facilities or any other structure of any kind in the lake, reservoir or other body of water is prohibited unless a permit therefore has been issued by the District Engineer. No habitation of such facilities will be permitted.
(e) All vessels when not in actual use shall be removed from the lake, reservoir or other body of water unless securely moored at mooring facilities permitted by the District Engineer.
- 327.4 **AIRCRAFT.** (a) The operation of aircraft on lands or waters other than at the landing areas designated by the District Engineer is prohibited. Such designated areas shall be marked by the posting of appropriate signs.
(b) Except in extreme emergencies involving the safety of human life or threat of serious property loss, the air delivery of any person or thing by parachute, helicopter, or other means without written permission of the District Engineer is prohibited.
(c) The provisions of this section shall not be applicable to aircraft engaged on official business of the Federal Government or used in emergency rescue in accordance with the directions of the District Engineer or forced to land due to circumstances beyond the control of the operator.
- 327.5 **SWIMMING.** Swimming, snorkling or scuba diving is permitted, except in those areas of the lake, reservoir or other body of water designated by the District Engineer and marked by the posting of appropriate signs.
- 327.6 **PICNICKING.** Picnicking is permitted, except in those areas designated by the District Engineer and marked by the posting of appropriate signs.
- 327.7 **CAMPING.** (a) Camping is prohibited except in areas designated by the District Engineer. Such designated areas shall be marked by the posting of appropriate signs.
(b) Camping at a fee site without payment of designated fees as set forth in 327.25 is prohibited.
(c) The length of stay at all campgrounds shall be limited to 14 consecutive days. Occupancy of any campsite for a period greater than 14 consecutive days is prohibited without written permission of the District Engineer.
(d) Camping equipment or other property left unattended at a campsite for the purpose of holding the site for future occupancy is prohibited.
(e) The digging or leveling of any ground or the construction of any facility without written permission of the District Engineer is prohibited.
(f) Camping equipment shall be completely removed and the sites cleaned before the departure of the campers.
- 327.8 **HUNTING, FISHING AND TRAPPING.** Hunting, fishing and trapping are prohibited in areas designated by the District Engineer. Such restricted areas shall be marked by the posting of appropriate signs.

- 327.9 SANITATION. (a) Dumping or disposal in any manner of refuse, garbage, rubbish, trash, debris, or litter of any kind into the waters of or onto any land Federally owned and administered by the Chief of Engineers is prohibited except at locations and in receptacles provided for such purposes.
(b) It shall be a violation to bring onto any water resource development project any refuse, garbage, rubbish, trash, debris, or litter of any kind for dumping or in any other manner disposing of such refuse, garbage, rubbish, trash, debris or litter of any kind into the waters of or onto any land Federally owned and administered by the Chief of Engineers.
- 327.10 FIRES. (a) Gasoline and other fuels, except that which is contained in storage tanks of vehicles, vessels, camping equipment, or hand portable containers shall not be stored within the water resource development project areas without written permission of the District Engineer.
(b) Fires shall be confined to fireplaces, grills, or other facilities designed for this purpose and shall in addition be confined to those areas designated by the District Engineer.
(c) The gathering of wood for use as fuel at campsites or picnic areas is prohibited except for the gathering of dead material on the ground.
- 327.11 CONTROL OF HORSES, DOGS, CATS AND PETS. (a) No person shall bring or have horses in camping, picnic, swimming beach or other similar areas, or developed recreation areas.
(b) No person shall bring dogs, cats, or other pets into developed recreation areas unless penned, caged, on a leash no longer than six feet in length or otherwise under physical restrictive controls at all times.
- 327.12 RESTRICTIONS. (a) The District Engineer may establish a reasonable schedule of visiting hours for all or portions of a project area and close or restrict the public use of all or any portion of a project by the posting of appropriate signs indicating the extent and scope of closure. All persons shall observe such posted restrictions.
(b) Quiet shall be maintained in all public use areas between the hours of 10 p.m. and 6 a.m. Excessive noise during such times which unreasonably disturbs persons is prohibited.
(c) The operation or use of any audio or other noise producing device including but not limited to communications media and motorized equipment or vehicles in such a manner as to unreasonably annoy or endanger persons is prohibited.
- 327.13 EXPLOSIVES, FIREARMS, OTHER WEAPONS AND FIREWORKS. (a) The possession of loaded firearms, ammunition, projectile firing devices, bows and arrows, crossbows, and explosives of any kind is prohibited unless:
(1) in the possession of a law enforcement officer or Government employee on official duty;
(2) used for hunting or fishing during the hunting or fishing season as permitted under Section 327.8 of this regulation or
(3) unless written permission has been received from the District Engineer.
(b) The possession or use of fireworks is prohibited unless written permission has been received from the District Engineer.
- 327.14 PUBLIC PROPERTY. Destruction, injury, defacement or removal of public property including natural formation, historical and archeological features and vegetative growth is prohibited without written permission of the District Engineer.
- 327.15 ABANDONMENT OF PERSONAL PROPERTY. (a) Abandonment of personal property is prohibited. Personal property shall not be left unattended upon the lands or waters of the project except in accordance with these regulations. After a period of 24 hours, abandoned or unattended personal property shall be impounded and stored at a storage point designated by the District Engineer. The District Engineer shall assess a reasonable impoundment fee, which shall be paid before the impounded property is returned to its owner.
(b) The District Engineer shall by public or private sale or otherwise, dispose of all lost, abandoned or unclaimed personal property that comes into his custody or control. However, property may not be disposed of until diligent effort has been made to find the owner, his heirs or next of kin, or his legal representative. If the owner, his heirs or next of kin, or his legal representative is determined but not found, the property may not be disposed of until the expiration of 120 days after the date when notice, giving the time and place of the intended sale or other disposition, has been sent by certified or registered mail to that person at his last known address. When diligent effort to determine the owner, his heirs or next of kin, or his legal representatives is unsuccessful, the property may be disposed of without delay, except that if it has a fair market value of \$25 or more the property may not be disposed of until three months after the date it is received at the storage point designated by the District Engineer. The net proceeds from the sale of property shall be converted into the Treasury of the United States as miscellaneous receipts.
- 327.16 LOST AND FOUND ARTICLES. All lost articles shall be deposited by the finder at the Resource Manager's Office or with a Ranger. The finder shall leave his name, address and phone number. All lost articles shall be disposed of in accordance with the procedures set forth in Section 327.15, above.
- 327.17 ADVERTISEMENT. Advertising by the use of billboards, signs, markers, audio devices or any other means whatever is prohibited unless written permission has been received from the District Engineer.
- 327.18 COMMERCIAL ACTIVITIES. The engaging in or solicitation of business without the express written agreement of the District Engineer is prohibited.
- 327.19 PERMITS. (a) It shall be a violation of these regulations to refuse to comply with the terms of conditions of any permit issued under the provisions of this regulation by the District Engineer.
(b) (1) Permits for floating structures of any kind in waters of water resources development projects, whether or not such waters are deemed navigable waters of the United States but where such waters

are under the management of a Corps of Engineers lake Resources Manager, shall be issued under the authority of this regulation. District Engineers will delineate those portions of the navigable waters of the United States where this provision is applicable and post notices of this designation, in the vicinity of the lake Resource Manager's Office.

(2) Permits for non-floating structures of any kind constructed, placed in or affecting waters of water resource development projects where such waters are deemed navigable waters of the United States, shall be issued under the provisions of Section 10 of the Act approved March 3, 1899 and Section 290.120 of Title 33, Code of Federal Regulations.

(3) Permits for non-floating structures of any kind in waters of water resources development projects where such waters are under the management of a Corps of Engineers lake Resource Manager and where such waters are not deemed navigable waters of the United States shall be issued as set forth in sub-paragraph (1) of this paragraph.

327.20 **UNAUTHORIZED STRUCTURES.** The construction or placing of any structure of any kind under, upon or over the project lands or waters is prohibited unless a permit therefor has been issued by the District Engineer. Structures not under permit are subject to summary removal by the District Engineer.

327.21 **SPECIAL EVENTS.** Special events such as water carnivals, boat regattas, music festivals, dramatic presentations, or other special recreation programs are prohibited unless a permit therefor has been issued by the District Engineer. The public shall not be charged any fee by the sponsor of such event unless the District Engineer has approved in writing the proposed schedule of fees.

327.22 **UNAUTHORIZED OCCUPATION OF LANDS.** (a) Occupying any lands, buildings or other facilities within water resource development projects for the purpose of maintaining same as a residence without the written authorization of the District Engineer is prohibited. The provisions of this section shall not apply to the occupation of lands for the purpose of camping in accordance with the provisions of Section 327.7.
(b) The ranging, grazing or watering of livestock on lands of water resource development projects administered by the Corps of Engineers is prohibited except when authorized by lease, license or other agreement with the District Engineer.
(c) Unless otherwise authorized by law, use of project lands or waters for agricultural purposes is prohibited except when authorized by lease, license or other agreement by the District Engineer.

327.23 **OUTGRANTED LANDS.** Applicable laws and regulations of State and local governments shall be deemed to apply on project lands or waters which are outgranted by the District Engineer by lease, license, or other written agreement to State and local governments provided, however, that the regulations in this Part 327 are deemed to apply to such outgranted project lands and waters as a minimum regulatory requirement.

327.24 **INDIAN LANDS.** The regulations in this Part 327 shall be deemed to apply to those lands and waters which are subject to treaties and Federal laws and regulations concerning the rights of Indian Nations and which lands and waters are incorporated, in whole or in part, within water resource development projects administered by the Chief of Engineers to the extent that the regulations in this Part 327 are not inconsistent with such treaties and Federal laws and regulations.

327.25 **SPECIAL RECREATION USE FEES.** (a) Section 210 of Public Law 90-483, 82 Stat. 746 and Public Law 92-347, 86 Stat. 459 authorizes the establishment of special recreation use fees for the use of specialized sites, facilities, equipment or services furnished at substantial Federal expense at all water resource development projects administered by the Secretary of the Army acting through the Chief of Engineers.
(b) The range of fees set forth in paragraph (c) of this section are established in accordance with the following criteria:

- (1) The direct and indirect amount of Federal expenditure;
- (2) the benefit to the recipient;
- (3) the public policy or interest served;
- (4) The comparable recreation fees charged by other Federal and non-Federal public agencies within the service area of the management unit at which the fee is charged;
- (5) the economic and administrative feasibility of fee collection;
- (6) the extent of regular maintenance required; and
- (7) other pertinent factors.

(c) When facilities come within the above criteria, District Engineers shall recommend to the Office, Chief of Engineers, for designation applicable fee charges within the ranges as set forth below:

Camp and trailer sites-----	Up to \$4.50 for overnight use
Group use sites-----	Up to \$0.50 per person per night
The District Engineer may select group use rates in lieu of the above "group camping sites" special recreation fee, and may establish a minimum group use charge of at least \$3.00 per night per group without regard to group size or other provisions of this Part.	
Elevators-----	At least \$0.10 per person round trip where elevators are provided as a special service to the public
Electrical hook-ups-----	\$0.50 per day
Specialized sites (highly developed day-use)-----	\$0.50 to \$1.50 per car per day

Special recreation use fees may be established for other types of specialized facilities in addition to those which are listed in this paragraph.

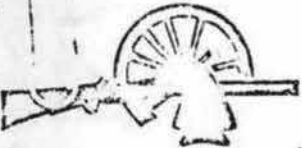
(d) The District Engineer shall post signs at areas with designated Special Recreation Use Facilities in a manner such that the visiting public will be clearly notified that special recreation use fees are charged.

(e) Failure to pay the user fee prescribed in this section is a violation of the Land and Water Conservation Fund Act, as amended, (Public Law 92-347, 86 Stat. 459) and subjects the violator to punishment by a fine of not more than \$100.

327.26 INTERFERENCE WITH GOVERNMENT EMPLOYEES. Interference with any Government employee in the conduct of his official duties pertaining to the administration of these regulations is prohibited.

327.27 VIOLATION OF RULES AND REGULATIONS. Except for violations coming within the scope of Section 327.25 of this regulation, in accordance with Section 324 of the River and Harbor Act of 1970 (84 Stat. 1818, 16 USC 460d, as amended) violations of the provisions of this regulation shall subject the violator to a fine of not more than \$500 or imprisonment for not more than six months, or both. Any person charged with such violation may be tried and sentenced in accordance with the provisions of Section 3401 of Title 18, United States Code. All persons designated by the Chief of Engineers for that purpose shall have the authority to issue a citation for violation of these regulations, requiring the appearance of any person charged with violation to appear before the United States magistrate within whose jurisdiction the water resource development project is located for trial.

LETTERS CONCERNING ARCHEOLOGICAL RESOURCES

	WASHINGTON STATE		
	ADVISORY COUNCIL ON HISTORIC PRESERVATION P. O. BOX 1128, OLYMPIA, WASHINGTON 98504		
DANIEL J. EVANS, Governor			
WALTER A. ...	MRS. GEORGE CONLEY, JR.	ALBERT CUMBERWELL	
... ..	SPUCE LE ROY	HARVEY S. RICE	DR. DAVID H. STRATTON
MRS. ERIC BLASSEY, Chairman	CHARLES H. ODEGAARD, Executive Director		

October 31, 1974

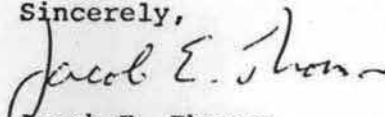
Ms. Jan Gilbert
Department of the Army
Walla Walla District, Corps of Engineers
Bldg. 602 City - County Airport
Walla Walla, Washington 99362

Dear Ms. Gilbert:

There are no State or National Register historic properties within the Mill Creek Dam project as defined in your letter dated October 16, 1974.

These registers are an ongoing survey and should not be considered an exhaustive inventory of the historic sites within any given area. The Washington Archaeological Research Center at Washington State University, Pullman, maintains a more complete listing of known archaeological resources, and we suggest that you contact them to insure a more complete review of the project.

Sincerely,



Jacob E. Thomas
Historic Preservation Specialist

jac



WASHINGTON ARCHAEOLOGICAL RESEARCH CENTER
WASHINGTON STATE UNIVERSITY, PULLMAN, WASHINGTON 99163

DIRECTOR
RICHARD D. DAUGHERTY, PH.D.
ASSISTANT DIRECTOR
HARVEY S. RICE
PHONE 509-335-6681
SCAN 426-6681

October 29, 1974

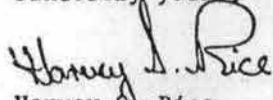
Jan Gilbert
Environmental Resources Specialist
Walla Walla District, Corps of Engineers
Building 602, City-County Airport
Walla Walla, Washington 99362

Dear Ms. Gilbert:

A review of our records does not reveal any known archaeological sites in the area of the Mill Creek Dam project. This is not to say that archaeological sites do not exist in this area, for no archaeological surveys have been done. Indeed, we have been informed that a large number of archaeological materials have been collected by amateur collectors in this area. I would suggest that prior to any construction project, an archaeological survey should be made. If you could provide us with a map showing the project and the surrounding area that the project would affect, we would be pleased to prepare an estimate for an on-foot archaeological survey.

Thank you for considering archaeological resources in your planning.

Sincerely yours,


Harvey S. Rice
Assistant Director

HSR:mch

cc. LeRoy Allen

NPWEN-PL

1 November 1974

Mr. Harvey S. Rice
Assistant Director
Washington Archaeological Research Center
Washington State University
Pullman, Washington 99163

Dear Mr. Rice:

Thank you for your reply to our letter concerning the Mill Creek project. Inclosed is a map defining the project area. The current project involves only reconstruction of the abandoned diversion channel, indicated in green on the map. The reservoir and its associated works have been in operation since 1942. Rehabilitation would entail replacement of the open canal with buried pipe conduit. The material used to cover the conduit will be obtained from the sediment delta which has formed behind the diversion dam of Mill Creek, indicated by a star on the map.

Since the proposed project does not involve excavation of any previously undisrupted soils, do you still feel an archeological investigation is in order? If so, please send us an estimate for a survey of the specified area.

Thank you.

Sincerely yours,

1 Incl
As stated

JAN E. GILBERT
Environmental Resources Specialist

CF: w/o incl
Le Roy Allen



WASHINGTON ARCHAEOLOGICAL RESEARCH CENTER
WASHINGTON STATE UNIVERSITY, PULLMAN, WASHINGTON 99163

DIRECTOR
RICHARD D. DAUGHERTY, PH.D.
ASSISTANT DIRECTOR
HARVEY S. RICE
PHONE 509-335-6681
SCAN 426-6681

November 11, 1974

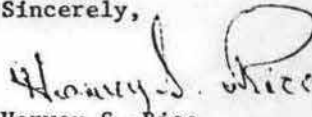
Janet E. Gilbert
Environmental Resources Specialist
Walla Walla District Corps of Engineers
Bldg. 602, City-County Airport
Walla Walla, WA 99362

Dear Ms. Gilbert:

I see no need for concern over archaeological resources in your proposed Mill Creek Project since, as you have pointed out, the proposed project will not involve the disturbance of any previously undisturbed soil.

Thank you for considering archaeological resources in your planning, and I hope that we can be of service to you in the future.

Sincerely,


Harvey S. Rice
Assistant Director

HSR:glr