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Canyon Lake Dam Access for Repair 2018

Environmental Assessment



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Introduction

The Forest Service proposes to authorize Canyon Creek Irrigation District adequate access to their facilities at Canyon Lake Dam and to prescribe terms and conditions related to this access as necessary to protect the National Forest.

We prepared this environmental assessment to determine whether effects of the proposed activities may be significant enough to prepare an environmental impact statement. By preparing this environmental assessment, we are fulfilling agency policy and direction to comply with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. For more details of the proposed action, see the “Proposed Action and Alternatives” section of this document.

Location

Canyon Lake Dam is located on the Darby Ranger District of the Bitterroot National Forest within the Selway-Bitterroot Wilderness. Canyon Lake Dam is located in the southeast of Section 27, Township 6 North, Range 22 West, P.M., in the upper Canyon Creek drainage west of Hamilton, Montana.

Public access to the dam is via Forest Service Trail No. 525. Distance to the dam from the trailhead is approximately 5 miles. This steep trail ascends over 2400 feet in elevation and crosses a steep, rocky slope within the last mile of the dam. Trail No. 525 is not recommended for stock use. The Vicinity Map is presented in Figure 1.

Purpose of Proposal

The purpose of this proposal is to authorize Canyon Creek Irrigation District (CCID) adequate access¹ to their facilities within their easement, and to prescribe terms and conditions related to this access and their subsequent work on their high hazard dam as necessary to protect public health and safety, and to protect National Forest System lands. Ultimately, this work is necessary for CCID to continue exercising their valid water right, in addition to their rights and responsibilities under terms of their pre-Forest easement.

The Forest Service has prepared the Environmental Assessment (EA) to determine whether an Environmental Impact Statement is necessary for the proposed Canyon Lake Dam – Access for Emergency Repair/Rehabilitation project in 2019 or 2020. This EA documents the analysis of the effects of the proposed project on the environment.

Need for Action

Canyon Creek Irrigation District (CCID) requests adequate access to their easement at Canyon Lake Dam so that CCID may make their facilities safe, which is consistent with their responsibilities under federal and state dam safety laws and regulations. CCID is the owner of appropriated water right, recognized under state law, which authorizes the irrigation district to legally store and use their water for beneficial uses including agricultural, domestic, stock, irrigation, lawn and garden, etc. uses.

The need for this project stems from CCID's existing rights and obligations to operate and maintain Canyon Lake Dam to meet current State and Federal Dam Safety Standards and pertinent laws and regulations governing the proponent's use and the protection of National Forest System lands. The irrigation district is authorized to operate and maintain their dam and reservoir on National Forest Lands under a pre-Forest easement which is authorized under the Act of July 26, 1866 and the Act of March 3, 1891, granted by the Secretary of the General Land Office, Department of Interior.

Canyon Lake Dam is a century-old dam originally constructed in 1891. Canyon Lake dam is classified as a high hazard structure with the capability of causing damage to downstream property and environmental resources in the event of a failure. Canyon Lake Dam could also present a threat to public safety if the dam failed.

The repairs will correct deficiencies that have resulted in significant seepage through the dam embankment, which have been documented and monitored by Hydrometrics Inc. over the past several years during routine safety inspections.

In the past 12 years, three sinkholes have been repaired. Silty sand embankment soils are prone to piping (internal erosion). Localized piping and high seepage velocities can lead to development of more sinkholes and/or a total dam breach failure. The most recent sinkhole developed near the south abutment of the auxiliary spillway in 2017.

¹ Defined at FSM 2320.5.15 as *“The combination of routes and modes of travel that the Forest Service has determined will have the least-lasting impact on the wilderness resource and, at the same time, will serve the reasonable purposes for which State or private land or right is held or used.”*

In 2004, work was completed on the dam for the purpose of increasing inadequate spillway capacity, repairing failing outlet works, and addressing surface erosion problems along the upstream embankment. However, this project did not correct embankment stability problems and internal erosion or piping potential.

Helicopter access to the dam is requested to transport bulky equipment, and heavy construction materials needed to accomplish the repair work within generally accepted industry standards. It is not safe or feasible to physically pack this equipment and heavy construction materials in with stock.

Proposed Action

In early April 2018, the Darby District Ranger received a letter from Canyon Creek Irrigation District's engineering representative, Hydrometrics Inc., initiating the Canyon Lake Dam Rehabilitation project and requesting support for a grant to partially fund the project (through a grant application submitted to the Montana Department of Natural Resources and Conservation, or DNRC). The project includes use of mechanized transport (helicopter) to airlift motorized equipment and heavy, bulky construction materials to repair and stabilize the embankment beginning in early fall of 2019 or possibly late summer 2020.

The Forest Service is proposing to authorize approximately thirty-two (32) round trip helicopter flights to allow for the work to be done on Canyon Lake Dam, safely and effectively, starting as early as September 2019.

The estimated number of helicopter flights (32) needed to complete the project is based on estimates from Hydrometrics Inc. and includes the following:

- 11 flights for mobilization of equipment and materials
- 8 flights for resupply of construction materials
- 9 flights for demobilization
- 4 additional contingency flights for unforeseen problems at this remote site.

Helicopter flights will be staged on private property east of Canyon Lake Dam and National Forest System lands. The majority of flights will be concentrated at the beginning and end of the project during mobilization and demobilization.

Proposed Project Schedule

CCID is pursuing grant money through the state legislature and Montana DNRC in April 2019. Depending on outcomes and timing of availability of the grant funding, CCID will follow one of two project schedules.

First, a fast-track schedule may be pursued to complete construction in 2019. The design and specifications for the project would be finalized, then bids solicited in July and August 2019. The project would likely occur in September and early October 2019, and requires approximately 4 to 6 weeks to complete.

Second, a less aggressive schedule provides more flexibility and involves completing the design and permitting process in 2019, after executing the grant agreement. Bids would be solicited in early 2020, and work would be scheduled to begin in late summer 2020 at the end of irrigation

season. Construction work could begin a couple weeks earlier in the season, which reduces the risk of encountering winter weather at the dam. In this scenario, the project could start as early as late August, and requires approximately 4 to 6 weeks to complete.

For both schedules, the intent is to schedule the project during late summer and early fall before winter weather events arrive at this remote, high elevation site. The engineer's preliminary estimate for project completion is 4 to 6 weeks within one season. Rehabilitation work will be confined to the dam and reservoir footprint, which are within CCID's recognized easement.

Regulatory Framework

The ID Team identified and addressed the narrow scope of the Agency's decision space, based on the regulatory and legal framework under categories outlined below: 1. Dam Safety/Legal Liability (including Montana Dam Safety laws and regulations), 2. Pre-Forest Easement Authorities/Wilderness Act, 3. Montana Water Quality standards and Stream Permitting requirements.

Dam Safety/Legal Liability

Dams can pose risks to those living downstream if they are not maintained and operated correctly. The legal framework has been established by the courts, and the dam owner (Canyon Creek Irrigation District) is responsible for maintaining and operating the dam to assure that the dam does not fail.

Because Canyon Lake Dam is a high hazard privately owned dam, the dam owner has an obligation to reduce liability and a duty, or reasonable standard of care, to ensure that their property does not pose a danger to others. This duty includes working with the State of Montana, DNRC Water Operations Bureau to comply with dam safety standards, necessary to protect public health and safety and the environment. The State of Montana regulates such dams as applicable in Montana Code Annotated Title 85 Water Use, Chapter 15 Dam Safety Act (PF Folder - Dam Safety Act Montana). CCID will need to comply with state and local regulations associated with these repair and maintenance activities.

The authorities through which the U.S. Forest Service regulates safety of dams on National Forest System lands do not apply to dams authorized by a pre-Federal Land Policy Management Act right-of-way or to congressionally withdrawn water projects.

Easement Authorities and Wilderness Act

The Forest Service is required by both the Wilderness Act² and the Alaska National Interest Lands Conservation Act³ (ANILCA) to authorize reasonable access to valid occupancies. The irrigation district (CCID) is authorized to operate and maintain their dam and reservoir on National Forest Lands under a pre-Forest easement which is authorized under the Act of July 26, 1866 (43 U.S.C. 661) and the Act of March 3, 1891 (43 U.S.C. 946-949) granted by the Secretary of the General Land Office, Department of Interior. Therefore, the authorization of adequate access to CCID for the valid use of its easements is non-discretionary.

² Wilderness Act, Sec. 5 (b); codified at 16 U.S.C § 1134; and the implementing regulations at 36 CFR 293.13 Access to Valid Occupancies.

³ ANILCA, Pub. L. 96-487, title XIII, Sec. 1323; codified at U.S.C. § 3210

Section 5(b) of the Wilderness Act (16 U.S.C. § 1134) provides for access to the dam for operation and maintenance of the facilities, within provisions of Forest Service regulations 36 CFR 251 subpart D and CFR 293.13 which implement these statutes.

In this case, the Wilderness Act also requires the Forest Service to “*prescribe the routes of travel to and from the surrounded occupancies, the mode of travel, and other conditions reasonably necessary to preserve the National Forest Wilderness*”. Based on these authorities, the Forest Service may not deny reasonable use of or access to the dam and reservoir, but may impose reasonable terms and conditions on the dam owner’s use and access for the protection of the National Forest.⁴

These acts prescribe a narrow scope to the Agency’s discretion, balanced between requirements to allow for the proponent’s rights and responsibilities pertaining to the use of their easement and the Agency’s responsibility to provide protections for National Forest and Wilderness values.

CCID has requested access to their Canyon Lake facility so they may perform work necessary to meet the requirements of federal dam safety standards. The Forest Service has reviewed the CCID’s preliminary technical proposal and request for access and has determined that:

1. The CCID’s proposed use is consistent with the purpose, terms and limits of the easement. Act of 1866, Section 9 states: “*And be it further enacted, that whenever, by priority of possession, rights to use of water for mining, agricultural, manufacturing, or other purposes, have vested and accrued, and the same are recognized and acknowledged by the local customs, laws, and decisions of the courts, the possessors and owners of such vested rights shall be maintained and protected in the same; and the right of way for the construction of ditches and canals for the purposes aforesaid is hereby acknowledged and confirmed.*” The Act of March 3, 1891 (26Stat.1101, as amended; 43 U.S.C. 946-949 states: “*to the extent of the ground occupied by the water of any reservoir and of any canals, and laterals and fifty feet on each side of the marginal limits thereof, and, upon presentation of satisfactory showing by the applicant, such additional right-of-way as the Secretary of Interior may deem necessary for the proper operation and maintenance of said reservoirs, canals, and laterals; also the right to take from the public lands adjacent to the line of the canal or ditch, material, earth, and stone necessary for the construction of such canal or ditch.*”.

2. As the owner of their high hazard dam, CCID is responsible for obtaining a construction permit from Montana DNRC Dam Safety Section, which includes review of plans and specifications for the proposed construction/reconstruction, prepared under the direction of an engineer experienced in dam design and construction/reconstruction. Montana code (85-15-208) also requires that construction be pursued in a secure manner: “*No person may construct or cause to be constructed a dam or reservoir for the purpose of accumulating, storing, appropriating, or diverting any of the waters of this state, except in a thorough, secure, and substantial manner.*”⁵

⁴ Concomitantly, the Forest Service also has authority under its general grant from Congress to protect the National Forests (16 U.S.C. § 551) to regulate reasonably the easement in order to achieve the purposes for which the national forests were reserved, and the Selway-Bitterroot Wilderness was designated.

⁵ The State of Montana DNRC is the agency responsible for regulating this dam under the current dam safety laws and regulations (Montana Code Annotated 2017, Title 85. Water Use Chapter 15. Dam Safety Act, Part 2. Construction, Inspection, and Repair of Dams). In their regulatory oversight role, Montana DNRC reviews and approves (or disapproves) the dam owner/irrigation district’s engineering designs,

3. A minimum requirements process was used to assist with the analysis of CCID's request.⁶ The process indicates the proposal would meet Region 1 requirements for authorization to use mechanized transport and/or motorized tools within wilderness.⁷ (PF-REC-006)

Water Quality/Hydrology and Fisheries

Since Canyon Lake Dam and reservoir is recognized as an easement, as defined per 43 U.S.C. 946-949, under the Act of 1866 and 1891 granted by the Secretary of the GLO, regulatory authority for assessment of water quality and quantity effects associated with the proposed dam repair activities falls outside the purview of the Forest Service. Project activities as they relate to water resource effects would be regulated through the Montana Natural Streambed and Land Preservation Act (MCA 75-7-101 through 124) (via the 310/318 permit process administered by the Montana Department of Fish, Wildlife, and Parks) and Section 404 of the Clean Water Act (via the permit process administered by the U.S. Army Corps of Engineers). In light of the aforementioned regulatory framework, project-related water resource effects on NFS-administered lands will not be analyzed under the 2018/2019 Canyon Lake Dam EA.

Design Criteria

In addition to Forest Service policy and Forest Plan requirements, the interdisciplinary team identified project-specific design criteria. The environmental impacts of the proposed action discussion are based on implementation of the listed design criteria.

Because Canyon Lake Dam is designated as a high hazard dam, the burden to repair deficiencies lies with the dam owner/easement holder. Failure to repair the dam could result in damage to downstream private property and the environment, including damage to National Forest System lands. Therefore, based on authorities described in the previous section, in addition to the standard of care imposed by the courts for a responsible dam owner to uphold, the Forest Service may not deny reasonable use of, or deny access to the dam and reservoir, but may impose reasonable terms and conditions on the dam owner's use and access for the protection of the National Forest. Terms and conditions associated with the proposed action are listed in Tables 1 and 2 below.

plans and specifications. The plans must meet strict dam engineering standards, considering, amongst other things, design, and choice of materials, methods of placing materials, and the risks and uncertainties inherent in the existing structure. It is the irrigation district's responsibility to develop the engineering plans.

⁶ The Minimum Requirement Decision Process was developed by federal agencies to help provide consistency to the way project proposals in wilderness are evaluated. This decision guide is a means to document the analysis process.

⁷ Regional Forest Service Manual Supplement 2300-98-1 requires proposals for use of mechanized transport to be evaluated based on the "minimum tool" necessary to accomplish the project and that one or more of the following conditions be met in order to approve requests for use of motorized transport or mechanized tools in association with wilderness dams:

1. Emergencies (Immediate threat to life and property)
2. Where impacts to wilderness/resources would be greater using non-motorized/non-mechanical methods
3. Where physically infeasible to use non-motorized methods
4. When costs make the use of primitive tools infeasible.

Table 1 lists the terms and conditions that are the responsibility of the recognized easement holder and dam owner, Canyon Creek Irrigation District (CCID). Table 2 includes design criteria that are the responsibility of the US Forest Service.

Table 1: Terms and Conditions (CCID)

Canyon Lake Access – Terms and Conditions
Wilderness Resource, Recreation, Wildlife and Air Quality
1. Whenever possible, helicopters will avoid flying directly over trails. All flights are likely to occur in September and October. The bulk of the helicopter flights will occur at the beginning and end of the project.
2. Canyon Creek Trailhead will be posted by CCID by early September alerting the public to the helicopter activity. Visitors passing through and camping around Canyon Creek Lake will still be allowed.
3. Where feasible and safe to do so, helicopters will avoid flying over mountain goats.
4. Prior to commencing work on the dam, CCID will communicate their plans to start the project, including their start date for helicopter access, to the Forest Supervisor. CCID will report when the last helicopter flight has occurred, and when the overall project is finished. CCID will schedule helicopter use and other motorized equipment use to weekdays and non-holiday days if possible.
5. All solid wastes will be removed from National Forest lands.
6. Burning of non-woody material is prohibited . All repair and other non-burnable garbage will be flown out.
7. Camps and sanitary facilities shall follow wilderness guidelines (minimum 200' from water's edge). Latrines will be located at least 200' from water and filled in after completion of project.
8. Latrines will be used for human wastes and kitchen wastewater.
Cultural Resource
1. Avoid known cultural sites by landings, equipment and supply staging, material excavation and crew camps. If previously unknown cultural sites are discovered during implementation, project activities in the vicinity of the site must be halted and the Forest's Heritage program manager notified. If necessary, additional mitigation protection or avoidance measures will be devised in consultation among the Forest Service, Montana State Historic Preservation Office, Confederated Salish and Kootenai Tribal Preservation Department, and the CCID.
TE &S Plant Species
1. Avoid disturbance within 15' of Whitebark pine trees. Avoid injury and destruction of any Whitebark pine.
Weed Control Measures, Revegetation and Reclamation
1. All equipment and supplies, including cargo netting, transported to the dam site will be cleaned prior to entering the wilderness to ensure weeds are not introduced. Workers should be sure that the helicopter base used for staging equipment transfer into the Wilderness is free of noxious weeds (FSM 2080).
2. If weed seeds are found on clothing, materials or equipment, then they will be removed and properly disposed of off-site.
3. Low impact camping techniques should be used to reduce the risk of introducing weeds or creating habitat suitable for seed germination.

Table 2: Design Criteria that are Forest Service (FS) Responsibility

Measure
1. A Forest Service wilderness ranger will discuss resource protection standards with workers.
2. If the Forest Service closes the trail for visitor safety, then the Forest Service will post notification to the public at the trailhead.

Measure
3. Where cultural resources or human remains are encountered during project implementation, the Forest has the authority to modify or halt project activities.

NOTE: The Terms and Conditions listed in this document are only for access to the easement site. The easement holder will need to be in compliance with other federal, state and local laws and regulations for the actual repairs and maintenance on the dam (Montana Dam Safety Act, Montana Code Annotated 2017, Title 85). All contractors and representatives of CCID will also be responsible for complying with federal and state statutory and regulatory requirements.

Alternatives Considered But Dismissed From Further Analysis

During the alternative development process, the following alternatives were considered but dismissed from further analysis. These alternatives, and the reasons for dismissing them, are described below and in Minimum Requirements Analysis (PF-REC-006).

Use of traditional skills and access (non-mechanized, non-motorized means)

In the course of evaluating CCID's request, the Forest Service explored additional non-mechanized means of access the minimum requirements analysis (PF-REC-006). The responsible parties, or those liable for the project implementation, which includes CCID and their engineering representatives, plan to incorporate non-motorized methods wherever feasible. However, a totally non-motorized, non-mechanized alternative would not meet state of practice engineering techniques for this project.

It should be noted, that the Forest Service cannot decide for CCID which methods shall be used to ensure a safely rehabilitated dam. The responsibility for dam safety lies solely with CCID. This alternative was dismissed from further analysis.

Environmental Impacts of the Proposed Action

This section summarizes the potential impacts of the proposed action and alternatives.

The environmental consequences of alternative analyses for all resources in this section are based on implementation of the terms and conditions and mitigation measures listed on pages 11-12.

Mitigation measures are those controls or guidelines that allow activities to proceed with minimized environmental impacts. These required mitigation measures are designed to eliminate or minimize resource effects such as those from helicopter flights, erosion, sedimentation, human waste, fuel handling and storage, and noxious weeds.

Wilderness, Trails and Recreation

Wilderness Character

Scope of Analysis

Canyon Lake Dam is located in the headwaters of Canyon Creek approximately 8 miles west of Hamilton. The dam and lake are in the Selway-Bitterroot Wilderness. The area of analysis for the proposed project is the Canyon Creek drainage from its headwaters to the wilderness boundary, (approx. 3 miles) and from the wilderness boundary to the Canyon Creek trailhead, (approx. 2 miles) because the potential direct and indirect effects of the proposal are generally well contained within this watershed boundary. Some discussions of the larger wilderness setting are

included to provide context to these effects. The analysis area includes Canyon Creek Trail #525. The Canyon Creek drainage area inside wilderness is estimated 3,146 acres in size. See Figure 2.

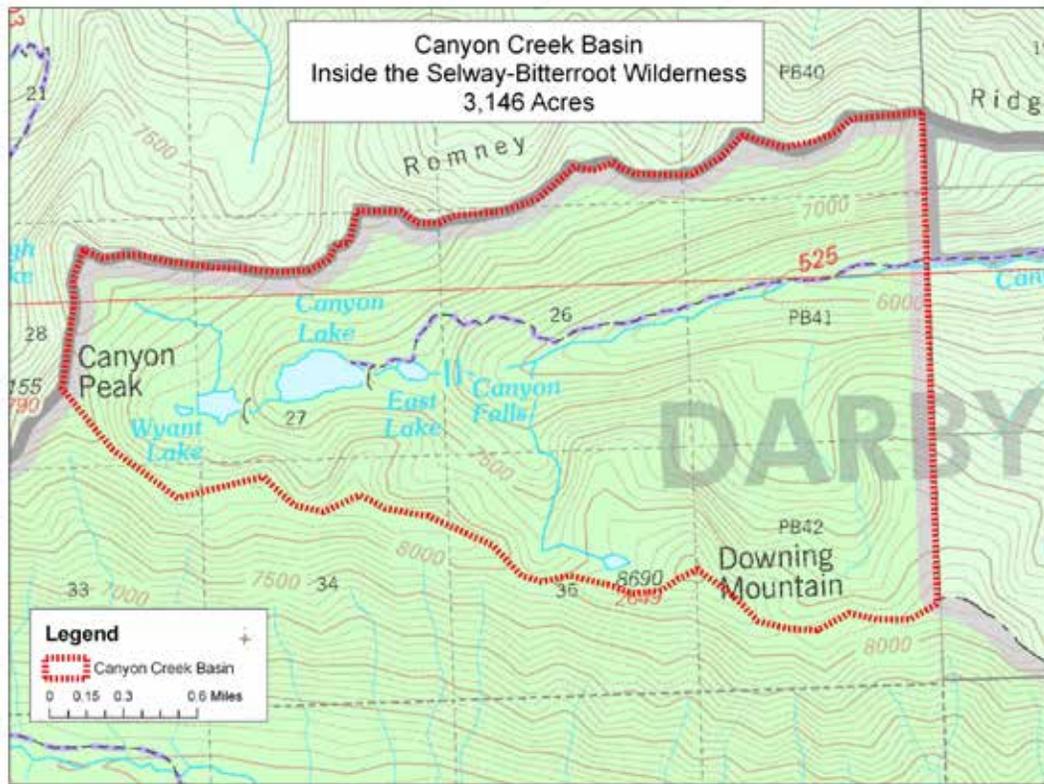


Figure 2: Canyon Creek Basin inside the Selway-Bitterroot Wilderness

Wilderness Resource (Including Wilderness, Recreation and Trails)

Regulatory Framework

The Selway-Bitterroot Wilderness (SBW) lies within the Bitterroot, Nez Perce, Clearwater, and Lolo National Forests. General management direction for the Selway Bitterroot Wilderness is contained in the SBW General Management Direction (Forest Plan Amendment #7, 1992), (PF-REC-001). This document is included as an appendix to each of the four forest plans. The Selway-Bitterroot Wilderness is the third largest wilderness in the lower 48 states and totals 1.3 million acres. The Bitterroot National Forest contains 508,000 acres of this total. The entire Selway Bitterroot Wilderness is Bitterroot National Forest Plan Management Area 7c.

A unique characteristic of this wilderness is the presence of sixteen irrigation dams; all were established before the 1964 Wilderness Act and some established before designation of the Bitterroot National Forest.

General wilderness characteristics of this drainage are summarized in four categories:

1. Untrammled or “apparent naturalness” is essentially unhindered and free from modern human control or manipulation. Human activities are primarily confined to the narrow trail corridor and the area immediately adjacent to the dam and reservoir. The remainder of the area is topographically extreme and discourages human activity.

2. Natural quality refers to the extent to which Wilderness ecological systems are substantially free from the effects of modern civilization and is measured by the presence and magnitude of human induced change.
3. Undeveloped quality refers to Wilderness retaining its primeval character and influence, and is essentially without permanent improvement or modern human occupation. The impacts of human activity are generally light, with the exception of the Canyon Lake Dam, Canyon Creek Trail #525 and campsites.
4. Solitude or Primitive and Unconfined Recreation quality refers to how Wilderness provides outstanding opportunities for solitude or primitive and unconfined recreation. Solitude is a personal, subjective value defined as "isolation from the sight, sound and presence of others and the developments of humans". The feeling of solitude in its purest sense is not available within the trail corridor or lake basin. Encounters are more frequent within the first few miles of Canyon Creek Trail #525 and decrease as one gets closer to the lake.

Remoteness is a perceived condition of being secluded, inaccessible and out of the way. The presence of humans is apparent in the trail corridor and immediate lake area. Any remoteness is experienced due to topographic relief and vegetation screening and increases as one gets further up Canyon Creek Trail #525.

The Selway Bitterroot wilderness is divided into four Opportunity Classes (OC), developed to allow for and provide a range of wilderness experiences, from the most pristine Opportunity Class 1 to most heavily used Opportunity Class 4. By allocating different opportunity classes, overall degradation of the wilderness resource can be prevented, while simultaneously establishing realistic objectives for those areas that receive more use, and consequently more impacts. However, each area will be managed to meet the limits of acceptable change prescribed for its designated opportunity class. The opportunity class descriptions provide managers with a hypothetical framework for managing towards the desired further conditions for the wilderness and by outlining the desired resource, social and managerial settings. These descriptions are in narrative form in the SBW General Management Direction (p. A-3 to A-6 and B-2, as well as summarized on Table A-1, p. A-2, and Table A-2 and 3 p. A-7, 8, (PF-REC-001).

The analysis area is in Opportunity Class 4. Although the natural environment is generally unmodified, there are many locations substantially affected by the actions of users. Environmental impacts are relatively high in areas along major travel routes. Impacts often persist from year to year, and there may be vegetation loss and soil disturbance at some sites. Opportunity Class 4 allows for some sign of human modification and more human interaction than would be expected in pristine areas. Visitors can expect to encounter other users on the trail and at campsites, and to have a reduced opportunity to experience solitude or remoteness. The Canyon Creek drainage receives relatively high use during the summer season but low use in late spring, late fall, and winter.

Affected Environment

Wilderness and Recreation

Most campsites in the Canyon Creek drainage have baseline monitoring information dating back to the 1970's. All sites were monitored during the early 1990's using the Cole Site Inventory

Worksheet method. Although the natural environment is generally unmodified, there are many locations substantially affected by the actions of users. The area in the immediate vicinity of Canyon Reservoir is classified as a problem area. Problem areas are defined as "locations within the Selway Bitterroot Wilderness where conditions do not meet one or more specified standards." Within this area are six sites within a square mile. A "site" includes any area of human impact, including discontinuous areas where use is likely to be by the same group, such as stock holding areas, or separate tent pads. For purposes of determining sites per square mile, this also includes dams and administrative sites, but does not infer that either will be removed. Impacts are evaluated by using standardized procedures that gauges the degree of various impact parameters including vegetation loss, soil disturbance, damage to trees, developments, cleanliness, etc.

On the six sites, one is heavily impacted, two are moderately impacted, and three are lightly impacted. The Forest Plan standard for areas in Opportunity Class 4 is: 1) A maximum of four sites per square mile; and, 2) Of the sites in the area, a maximum allowable of one lightly impacted site, two moderately impacted sites and one heavily or extremely impacted site per square mile. The Canyon Lake area exceeds both standards.

Recreation

The Recreation Opportunity Spectrum (ROS) is a land management tool used to classify lands based on the different recreation settings they provide. The system considers several indicators including remoteness, access, naturalness, facilities and site management, social encounters, visitor impacts, and visitor management. The setting, activities, and opportunities for experiences have been arranged along a continuum divided into six classes: primitive, semi-primitive (motorized and non-motorized), roaded natural, rural and urban (USDA Forest Service ROS users Guide). The Canyon Creek drainage portion outside wilderness is classified semi-primitive (non-motorized) with the portion within wilderness classified as primitive.

Canyon Lake's proximity to Hamilton and Missoula make it a popular day and overnight use area during the snow-free season. Visitors have diverse recreational opportunities, including hiking, hunting, fishing, rock climbing, and photography.

Trails

The Canyon Creek Trail #525 is the only trail in the Canyon Creek drainage. It follows the canyon and then climbs a "headwall" at the west end of the drainage which Canyon Lake is perched. The trail climbs steep side slopes in the 60-70% side slope range giving stock users pause. It is one of the few trails on the Bitterroot Forest that we do not recommend to stock users. There are rockslides with mixed size rocks including refrigerator-sized and Volkswagen-sized boulders, with large voids in between. Rock ribs run on the fall line on these steep slopes. Slick rock outcrops also characterize these headwall slopes. Often the trail is climbing between sections of rock and /or rock ribs. Two of these sections below the lake that climb through a rough boulder area are hazardous to stock. Few users are willing to negotiate these sections with their trail stock.

Due to the nature of the trails location in a very challenging landscape, visitor use on Canyon Creek Trail #525 is primarily hiking, most often as day use in the first 2-3 miles. The trail is managed as a mainline route and maintained to the lake annually to accommodate heavy foot traffic during summer use season. Typically, maintenance is done by Forest crews rather than by contract to allow for flexibility in clearing the route to the dam. The trail receives "custodial" trail

maintenance annually, so that existing drainage is cleaned, downed and leaning trees removed and loose debris on trail tread cleared to specified sizes.

In 2003, FS and MCC crews did some work to better accommodate pack support for Canyon Lake Reconstruction project. One section of trail was relocated w/ 2 switchbacks constructed to avoid a steep pitch; another section they built log steps pinning them on slick rock slab sections. This work was determined to not be a successful and safe route for stock. Other years (98- 99) work was identified but not done due to other forest priorities.

When built this trail was not professionally surveyed and engineered to create a well laid out and sustainable trail, with appropriate grades averaging 10 – 15%. Instead, it was established by the dam workers in places that “worked” in this very difficult terrain sometimes having grades reach 45% on slick rock. To fix the current steep climb which begins at the 3.5 mile point and is approximately 1 mile in length with side-slope of 70% and create a better trail with sufficient grades for horse travel, the section of trail would need to be lengthened/rerouted by approximately 3 miles. **This new construction would need to occur over multiple seasons which would delay work on the dam for years and increase the danger of possible failure of the dam.**

There are also many other locations on the trail, before the steep climb that would need to be fixed. Big steps and steep grades are just a few. This would need reconstruction and lengthy reroutes. Some of this rerouted area would go into Opportunity Class 1. The SBW General Management Direction indicates that Opportunity Class 1 areas within the Selway Bitterroot Wilderness, should have no new trail construction.

See detailed Trail Condition Surveys dated 6/29/2004, (PF-REC-002) Trail review dated 1/21/2009, (PF-REC-003) and Canyon Creek Trail survey dated 06/26/2018, (PF-REC-004) for more in depth trail condition information.

Visitor use numbers are primarily estimates including tallies coming from a registration box at the trailhead. Once high water recedes and summer begins, Trail #525 sees its highest use. Daily fishing outings, swimming and hikes occur. Overnight backpacking trips seem popular. There is no system trail leading up to Wyant Lake but it is a popular destination for hikers. Weekend use is typically heaviest during summer months. The trailhead does not have a stock ramp and has limited turning space or parking for stock trailers.

Environmental Consequences

Wilderness and Recreation

This section will disclose the environmental effects of this project on the wilderness and recreation resources of the Canyon Creek drainage.

Effects are measured using parameters determined through public scoping and by using criteria in the Forest Plan (1987), and in the Selway Bitterroot Wilderness General Forest Plan Management Direction (Amendment #7). These documents disclose standards and management direction for the Selway Bitterroot Wilderness, and recreation.

The environmental consequences of each alternative will be evaluated the following way: the wilderness resource setting (untrammled, undeveloped, natural and outstanding opportunities for solitude or a primitive and unconfined type of recreation) and the general recreation setting.

Effects Common to All Alternatives

In all alternatives, the presence of Canyon Lake Dam affects the wilderness resource. The natural integrity of water flows is restricted by the storage and release of water from the reservoir. Apparent naturalness and visitor's need of remoteness are affected by visual evidence of human structure. These effects are considered acceptable within the parameters of the Wilderness Act and subsequent legislation because Congress recognized these irrigation facilities existed at the time of the Wilderness Act, and as required by both the Wilderness Act and ANILCA access to valid occupancies such as these dam facilities held by the CCID is required.

The Canyon Lake drainage is in Opportunity Class 4 and receives relatively high use during the summer season but low use in mid-April to mid-May. Opportunity Class 4 allows for some sign of human modification and more human interaction than would be expected in pristine areas. Visitors can expect to see some human impacts that persist from year to year, to encounter other users on the trail and at campsites, and to have a reduced opportunity to experience solitude or remoteness.

Direct and Indirect Effects

Wilderness Resource Setting

Visitor expectations of apparent naturalness, remoteness, and solitude would be impacted by the sight and sound of the helicopter and its landing at the lake. Apparent naturalness is indicated by how the environment looks to most people using the area. Repair and maintenance activities at the dam site will have short-term effects on sight and sound (estimated 4-6 weeks) qualities of solitude. Apparent naturalness would be directly affected by the sight and sound of helicopters, ground transport of personnel up Trail #525, and those activities associated with the actual repair of the dam. Effects of helicopter noise and visibility would occur during the transport phases of the project.

The largest negative effect would result from the noise and sights of the activities directly associated with repair of the dam. Repair and maintenance activities at the dam site will have short-term effects on sight and sound perception of visitors. Remoteness is a perceived condition of being secluded, inaccessible, and out of the way. Sights and sounds of the repair work will be apparent near the dam and reservoir, affecting the feeling of remoteness for people actually in the drainage at the time of activities.

Solitude or primitive and unconfined quality is a personal, subjective value defined as an isolation from the sights, sounds, presence of others and the developments of man. The presence of workers and equipment and the resulting noise will affect the feeling of solitude of the area during the repair work.

Mitigations for signing, personal contacts and monitoring by wilderness rangers and pre-announcing when various activities will be taking place will allow most potential users the opportunity for solitude and remoteness in the remaining 1.3 million acres of the SBW or another wilderness area close by during the time the project is ongoing. (EA p. 10-11 and PF-REC-006).

Trails and General Recreation Setting

Canyon Trail #525 would be used by personnel hiking in with personal gear. No stock use would occur due to the condition and safety concerns of the trail. Thus there would be no stock impacts to trail tread and drainage structures. Effects on the campsites associated would be comparable to past work projects. These campsite and trail impacts are considered traditional and are able to be

mitigated. While use would be somewhat increased it would be similar to what recreationists would normally encounter along the trail. Areas not directly involved in work projects would remain open for use. Trail use information would be provided, in part, by using a wilderness ranger to monitor progress and to inform users. Public notices posted at the trailhead and in local newspapers would also be used

Cumulative Effects Common to All Alternatives

Because of the ephemeral and geographically limited nature of this proposal's effects on the wilderness setting, (4 to 6 weeks) there doesn't appear to be cumulative effects (overlapping in both time and space) with other past, present or reasonably foreseeable actions (PF-Effects). But, there may be both concurrent, similar activities (ongoing trail and dam maintenance, etc.) and reasonably foreseeable activities (trail and dam maintenance) in the broader wilderness area.

The Selway Bitterroot Wilderness includes approximately 1,340,360 acres. The Canyon Creek drainage is approximately 3,146 acres. Thus, the analysis area for the Canyon Lake Dam Access for Repair, 2018 project is approximately 0.24% of the entire Selway Bitterroot Wilderness. Estimated length of project is approximately 4 to 6 weeks with mechanized transport estimated only 8 to 10 days of that total time. While the project is ongoing, users' choices of destinations in the Canyon Creek drainage may be limited for short periods but wilderness visitors would continue to have the opportunity to visit another portion of the remaining 1,337,214 acres within the SBW to obtain the wilderness experience they have come to expect.

Consistency with Law, Regulations, Policy or Forest Plan

The Wilderness Act of 1964 directs that wilderness be administered "... for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness..." By definition, wilderness has "outstanding opportunities for solitude or a primitive and unconfined type of recreation" (PF-REC-005).

The Wilderness Act of 1964 does not specifically address the method of access to wilderness dams. It does, however, specifically address "valid occupancies" such as Canyon Lake Dam. In Section 5(b) it states "In any case where valid mining claims or other valid occupancies are wholly within a designated forest wilderness area, the Secretary of Agriculture shall, by reasonable regulations consistent with the preservation of the area as wilderness, permit ingress and egress to such surrounding areas by means which have been or are being customarily enjoyed with respect to such other areas similarly situated."

The Act specifically addresses motorized/mechanized prohibitions stating "...*except as necessary to meet requirements for the administration of the area for the purposes of this Act there shall be no...use of motor vehicles...no landing of Aircraft, no other form of mechanical transport*" [sec.4(c)].

The Regional Forest Service Manual Supplement 2300-98-1, 2326.1 - requires proposals for use of mechanized transport to be evaluated based on the "minimum tool" necessary to accomplish the project and that one or more of the following conditions be met in order to approve requests for use of motorized transport or mechanized tools in association with wilderness dams:

- Emergencies (Immediate threat to life and property)
- Where impacts to wilderness/resources would be greater using non-motorized/non-mechanical methods
- Where physically infeasible to use non-motorized methods

- When costs make the use of primitive tools infeasible.

(See PF-REC-006, Minimum Requirements Analysis: Protection of public safety and the emergency repair of Canyon Lake Dam, in accordance with current dam safety laws and regulations is part of the purpose and need for this project).

The project is located in the Forest Plan Management Area 7c, which is the SBW. The goals for Management Area 7c are to *"manage in accordance with the Wilderness Act of 1964... to ensure an enduring system of high quality Wilderness..."*

Direction for the management of the Wilderness portion of the affected area is contained in the Selway-Bitterroot Wilderness General Forest Plan Management Direction (Forest Plan Amendment #7, 1992) (PF-REC-001). This amendment established the following goals for the Selway-Bitterroot Wilderness:

- Preserve the integrity of the Selway-Bitterroot Wilderness resource to meet the purposes described in the Wilderness Act; to protect and preserve natural conditions so that the wilderness generally appears to have been affected primarily by the forces of nature, with the imprint of human work substantially unnoticeable, and has outstanding opportunities for solitude or primitive and unconfined recreation.
- Provide for limiting and distributing visitor use of specific portions in accordance with periodic estimates of the maximum levels of use that allow natural processes to operate freely and that do not impair the values for which wildernesses were created.
- Apply a Prevention of Significant Deterioration (PSD) approach to prevent a net degradation of the wilderness resource while acknowledging that wilderness, and the impacts caused therein, is dynamic.

The Bitterroot National Forest Plan notes in Amendment #7, page M-1 (PF-REC-001) that many special use dams exist in the Wilderness, that they need to be maintained to a safe condition, and may need mechanical access and motorized equipment to maintain at least some of them.

The Bitterroot National Forest Plan specifies in Amendment #7, Section II, M-2 (PF-REC-001): Environmental assessments or environmental statements will be prepared for all reconstruction and heavy maintenance work on reservoirs within the wilderness. These reports will include analysis of non-motorized vs. motorized means of doing work. Motorized equipment or other non-conforming activities will be authorized when it can be demonstrated that:

- It is the only feasible means of accomplishing the necessary maintenance.
- The continued existence of the reservoir is more in the public interest than its breaching.

Section II, A-1 specifies: "The minimum tool principle will be applied to the management of all resources within the Selway Bitterroot Wilderness. This means that the minimum management actions necessary to correct a given problem will be identified. These will be implemented using the methods and equipment that accomplish the objective with the least impact on the physical, biological and social characteristics of wilderness."

A Minimum Requirements Decision Process was used to evaluate the method of access (PF-REC-006). CCID's proposal (Alternative 1 in Minimum Requirements Analysis) most quickly meets the Montana Dam Safety Act requirements for a high hazard dam and would also affect visitor experience for the shortest amount of time, although this would be offset by effects of motorized

and mechanized use. This authorization for helicopter access would facilitate work within the easement, which would reduce the risk of severe and long lasting adverse effects to wilderness and other aspects of the human environment, including public safety, over the long term without risking significant adverse effects in the short term.

Wildlife

Helicopter access to Canyon Lake Dam would not affect habitat for any threatened, endangered, sensitive (TES) or Forest Plan management indicator species (MIS). Helicopter access could have minor, temporary disturbance impacts to several TES or MIS wildlife species that happen to be near the helicopter flight path when the helicopter is flying. See the Wildlife Biological Assessment (BA) and Biological Evaluation (BE) (PF-WILD-001) for additional analysis.

Effects of helicopter access to Canyon Lake Dam on Canada lynx and grizzly bear were further evaluated using the *Programmatic Biological Assessment for Activities That Are Not Likely to Adversely Affect Canada Lynx, Grizzly Bear and Designated Canada Lynx Critical Habitat*. The effects determination for Canada lynx was May Affect – Not Likely to Adversely Affect due to the low risk of minor, temporary disturbance impacts from helicopter flights. The effects determination for grizzly bear was No Effect because grizzly bears do not currently occur in the Bitterroot Mountains. See Programmatic BA summary sheet (PF-WILD-002) for further details.

Special Status and TE&S Plant Species and Noxious Weeds

Special Status and TE&S Plant Species

Current Resource Condition:

Field surveys were conducted for the presence of threatened and endangered species, sensitive vascular, and sensitive non-vascular plant populations and potential habitats in 2002, for the Canyon and Wyant Dams EIS. Existing borrow areas on the north and south sides of the Canyon Lake Dam were also surveyed. No federally listed or proposed threatened or endangered plant species (or critical habitat) are known or suspected to occur within the project area, and none were located during field surveys. Whitebark pine *Pinus albicaulis*, a candidate species, was found in the project area.

Effects of the Proposed Action:

Because the activities associated with this project are localized in nature, and all implementation will occur in areas already disturbed, the potential for residual effects to sensitive plant species or their habitat is low. The proposed repair project is not likely to adversely impact individual sensitive plant populations, since none are known to occur in the immediate area. There may be some impact to potentially suitable habitat for Bitterroot bladderpod, storm saxifrage, western boneset, rough fleabane, whitebark pine, or Idaho douglasia, but these impacts are not likely to affect the overall population viability of any of these species.

Noxious Weeds

Current Resource Condition:

The project area was surveyed for the presence of noxious weed species. No noxious weed species are present on the Canyon Dam, but spotted knapweed (*Centaurea maculosa* {*C. biebersteinii*}) is known to be present at the Canyon Lake trailhead.

Effects of the Proposed Action:

Although the project may create soil disturbance for invasive species encroachment, adhering to guidelines suggested in the Region 1 “Weed Prevention Practices (FSM 2080)” (PF 3.9) for

construction activities should minimize the risk of noxious weed spread and invasion into disturbed areas. Implementation will also follow project design criteria and mitigation measures to eliminate or minimize any new infestations of noxious weed species from occurring into the project area by following the criteria found in chapter 2.

Heritage Resources

Canyon Lake Dam (24RA0550) was built in 1891 and underwent reconstruction in 1972 and 1996. The current dam is substantially altered from its original design, and was determined 'not eligible' for the National Register in 1997. Resources determined 'not eligible' warrant no further protection under the law and a project may proceed as planned. A precontact site, 24RA0541, is located outside the project Area of Potential Effect (APE). It is unevaluated for the National Register and must be treated as an eligible site. However, since it is well outside the project APE it does not affect this undertaking.

The area was surveyed by an archaeologist as part of compliance with Section 106 of the National Historic Preservation Act (NHPA) in 1996 and again during emergency rehabilitation work in 2001. The cultural resource condition has not changed significantly in the time since those surveys, and the surveys meet current standards for intensive pedestrian survey. A cultural resource literature review and review of existing cultural resource inventory determined that no further work was necessary to identify heritage resources within the project APE. Under the terms of the Programmatic Agreement (PA) between Region 1 of the USFS and Montana State Historic Preservation Office (SHPO), a project with sufficient background information and prior survey which does not result in any new resources within the APE may proceed as planned after review by the heritage professional or project archaeologist. A 'cultural resource clearance' form was completed on October 29, 2018 after the Forest Archaeologist reviewed the existing information and the proposed action.

Additionally, the Confederated Salish and Kootenai Tribes (CSKT) are included in the notification process and provided opportunity to comment on the proposed undertaking, as required under Section 106 of the NHPA.

Resources Not Carried Forward for Analysis

Fisheries

The project would have no effect on aquatic species or their habitat. Authorizing helicopter access to the Canyon Creek dam would have no potential to add sediment to the streams or affect any of the INFISH Riparian Management Objectives.

Water Quality/Hydrology/Water Resources

The proposed action under review by the Bitterroot National Forest is authorization of access to the dam easement. Helicopter flights would have no direct or indirect effects on water resources in the Canyon Creek drainage.

Agencies and Persons Consulted

The Forest Service consulted the following individuals, Federal, State, tribal, and local agencies during the development of this environmental assessment:

Federal, State, and Local Agencies

Montana Department of Environmental Quality
Montana State Historic Preservation Office

Tribes

Confederated Salish and Kootenai Tribes

Others

Canyon Creek Irrigation District

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