

SCOPING DOCUMENT 1
GIBSON DAM HYDROELECTRIC PROJECT

FERC No. 12478

Prepared By:

Gibson Dam Hydroelectric Co., LLC

3633 Alderwood Ave.
Bellingham, WA 98225

October, 2005

(Revised March, 2006)

TABLE OF CONTENTS

LIST OF TABLES	<i>iii</i>
LIST OF FIGURES	iv
INTRODUCTION AND BACKGROUND.....	1
PROJECT CONTACT INFORMATION	1
THE LICENSING PROCESS TO DATE	2
PURPOSE OF THIS SCOPING DOCUMENT.....	2
DATE AND TIME of SCOPING MEETING and SITE VISIT.....	3
Scoping Meeting.....	3
Site Visit	4
PROCEDURES for SUBMITTING WRITTEN COMMENTS.....	4
REQUEST FOR INFORMATION	4
PROPOSED ACTION and ALTERNATIVES.....	5
GIBSON DAM and SUN RIVER PROJECT HISTORY	5
BUREAU OF RECLAMATION FEATURES.....	8
PROJECT FEATURES.....	8
PROJECT LANDS	16
PROJECT OPERATION.....	16
SUN RIVER HYDROLOGY.....	17
PROPOSED PROTECTION AND ENHANCEMENT MEASURES	17

PROJECT ALTERNATIVES	20
GDHC Proposed Action	20
Other Alternatives to be Formulated and Considered.....	20
No Action	20
Alternatives Eliminated from Further Study.....	20
RESOURCE ISSUES	20
FISHERIES	20
WILDLIFE AND BOTANICAL RESOURCES.....	21
WATER QUALITY AND QUANTITY.....	22
CULTURAL RESOURCE.....	22
AESTHETICS.....	23
RECREATION	23
SOCIOECONOMICS.....	23
CUMULATIVE EFFECTS.....	23
APPLICABLE COMPREHENSIVE PLANS.....	24
PROCESS PLAN AND SCHEDULE.....	24
PRELIMINARY DRAFT EA OUTLINE.....	26
GLOSSARY OF ACRONYMS AND ABBREVIATIONS	29
REFERENCES.....	30

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>
1	Map Locations of Gibson Dam Project Features	16
2	Mean, Max. & Min. Flows, Sun River at Simms, 1964-2004.....	18

LIST OF FIGURES

<u>Figure</u>	<u>Title</u>	<u>Page</u>
1	Gibson Dam Project Vicinity Map	7
2	Upstream Alternative, Parallel Powerhouse Alignment.....	10
3	Upstream Alternative, Perpendicular Powerhouse Alignment.	11
4	Downstream Alternative (powerhouse).....	12
5	Transmission Line Alternatives	14
6	Project Boundary and Facilities.....	15
7	Average, Min. and Max. flows, Sun River as Simms	18
8	Exceedance graph, Sun River at Simms.....	19
9	FERC Licensing Process	25

SCOPING DOCUMENT 1

GIBSON DAM HYDROELECTRIC PROJECT

FERC No. 12478

Gibson Dam Hydroelectric Company, LLC

October, 2005

(Revised March, 2006)

INTRODUCTION AND BACKGROUND

Gibson Dam Hydroelectric Company LLC (GDHC), Applicant, of Bellingham, Washington, holds a Preliminary Permit (Permit) from the Federal Energy Regulatory Commission (FERC) in Washington D.C. to develop a hydroelectric generating facility on an existing dam near Augusta, Montana. The proposed hydroelectric generating facility, called the Gibson Dam Project (Project), is located at the existing Gibson Dam on the Sun River. The Permit, specifying a 15 megawatt (MW) generating capacity project, was issued on April 20, 2004 and expires on March 31, 2007. The Permit was issued for the purpose of allowing the Applicant protection under the Federal Power Act (FPA) from competitive applications while conducting the studies and processes necessary to complete a FERC application for license.

PROJECT CONTACT INFORMATION

The name, business address and telephone number of Applicant are:

Gibson Dam Hydroelectric Company, LLC
3633 Alderwood Ave.
Bellingham, WA 98225
360-738-9999, extension 122

The name, business address and contact numbers of person authorized to act as agent for Applicant is:

Steven C. Marmon
Project Manager
Gibson Dam Hydroelectric Company, LLC
3633 Alderwood Ave.
Bellingham, WA 98225
360-738-9999, extension 122
e-mail: smarmon@tollhouseenergy.com

All questions, comments, or correspondence related to licensing for the Project should be directed to Mr. Marmon at the above address. Changes in this contact information will be notified directly to all interested parties and through announcements in a local newspaper.

THE LICENSING PROCESS to DATE

The licensing process for the hydroelectric project at Gibson Dam has been active since April, 2004, including the following activities:

- Distribution of an Initial Consultation Document (ICD, GDHC, 2005) describing the Project, the licensing process and preliminary environmental information, on February 15, 2005. The ICD contains detailed descriptions of existing resources, expected impacts and environmental studies, as known at the time of writing, and is a good source of background information;
- Initial Consultation Meetings (a technical agency meeting and a public meeting) and a site visit held in Helena, Fairfield and at the Project site on March 28 and 29, respectively, 2005;
- Study planning for potentially-affected fish and wildlife, water quality and cultural resources, including distribution of draft water quality and cultural resource study plans. Consultation on those plans occurred at an inter-agency meeting held on September 1, 2005 in Helena and a teleconference held on October 4, 2005;
- Submission to FERC and consulting agencies of a request to utilize the Alternative Licensing Procedures (ALP) for Project licensing. The ALP is a method for licensing which allows the applicant to prepare a preliminary draft environmental assessment, in lieu an Exhibit E, as part of the license application, thus saving overall licensing time (see following section). Subsequently, the ALP process was approved by the FERC on February 7, 2006.

All documents, meeting minutes, and submissions from these early licensing activities are available from GDHC at the contact address on page 1 of this document.

PURPOSE OF THIS SCOPING DOCUMENT

Scoping Document 1 addresses Scoping requirements outlined in the FERC regulations for licensing and implementing the National Environmental Policy Act (NEPA) of 1969. FERC's NEPA regulations are found in 18 CFR Subchapter W-Revised General Rules, Part 380.

Under the ALP, the applicant conducts Scoping in collaboration with the FERC to fulfill the FERC's NEPA responsibilities. The primary purpose of the Scoping process is to solicit, from agencies, the public, Non-Governmental Organizations (NGO's) and Tribe(s) (collectively, "Stakeholders") input on existing information and environmental and development-related impact issues.

The purposes of the Scoping process are to:

- identify important environmental and developmental issues related to the proposed Project licensing;
- identify reasonable alternatives that should be evaluated in the Environmental Assessment (EA);
- determine the scope and depth of analysis for Project purposes and environmental issues identified for evaluation in the Environmental Assessment; and
- identify issues that do not require detailed analysis.

Two formal documents will result from the Scoping process, Scoping Documents 1 and 2 (SD1 and SD2). All issues raised during the Scoping comment period will be reviewed and decisions made as to the level of analysis needed in the preparation of the EA.

GDHC will revise SD1 according to comments and additional information received, and will issue SD2. SD2 will outline the results of the Scoping process and will provide the framework for issues and concerns to be addressed in the Preliminary Draft Environmental Assessment (PDEA), to be prepared by GDHC with agency review and under FERC guidance. A copy of SD2, including a summary of comments and input received during the Scoping process will be distributed to the Participant list.

DATE and TIME of SCOPING MEETING and SITE VISIT

SCOPING MEETING

In addition to written comments solicited by the SD1, GDHC will hold a Scoping Meeting to discuss issues and to solicit oral comments and viewpoints from meeting participants. The Scoping Meeting is an important part of the NEPA process. All interested individuals, organizations, and agencies are urged to attend the meeting. The meeting times and cities are as follows:

Public Meeting: **Tuesday, April 11, 2006 7:00 – 9:00 PM in Fairfield, MT at the Fairfield Community Center**
Agency Meeting: **Wednesday, April 12, 2006 9:00 AM - Noon in Helena, MT at the Montana Association of Counties building., 2715 Skyway Drive**

The Scoping meetings will be professionally transcribed or videotaped, and all statements (oral and written) will become part of the public record for the Project licensing. Individuals participating in the meetings will be asked to clearly identify themselves for the record. Interested parties who choose not to participate or who are unable to attend either Scoping meeting may submit written comments or statements until **May 12, 2006**, that will become part of the public record and the official Project file.

SITE VISIT

A visit to the Gibson Dam Project site is intended to give participants first-hand view of the Project site. The time and location of the site visit is as follows:

Date: April 11, 2006.

Place: Gibson Dam Project

Time: 9:00 am

Those wishing to attend the site visit should notify Steve Marmon at the Project contact address and number(s) below at least 3 days prior to April 11.

PROCEDURES for SUBMITTING WRITTEN COMMENTS

Written comments must be received at the contact address below, via regular or e-mail at the contact addresses below, **within 30 days after the Scoping meeting, or by May 12, 2006** at the following address:

Steven C. Marmon
Project Manager
Gibson Dam Hydroelectric Company, LLC
3633 Alderwood Ave.
Bellingham, WA 98225
360-738-9999, extension 122
e-mail: smarmon@tollhouseenergy.com

REQUEST FOR INFORMATION

An important aspect of Scoping is information gathering. Participants are asked to provide, either by comment at the Scoping meeting or in separate written material or contact with GDHC, any information which they believe might add to the existing background on:

- Natural resources in the Project area, including fish, wildlife, vegetation, and water resources;
- Cultural resources in the general vicinity and Project area, including Native American use, historic use or development sites, settlements or artifacts;
- Socio-economic resources in the greater Augusta area to include any applicable land-use plans, property status or other relevant facts.

Any information contributed as part of the licensing will be treated with sensitivity to private property, tribal and spiritual values, and applicable access restrictions.

PROPOSED ACTION and ALTERNATIVES

GENERAL

The Project would be located at or near Gibson Dam on the Sun River about 18 miles NW of Augusta, MT (Figure 1). Gibson Dam is a water storage and supply facility owned and operated by the US Bureau of Reclamation (USBR) through a Memorandum of Understanding with the USDA Forest Service (USFS). The Project power generating facilities would be constructed at or near the base of Gibson Dam on USBR land.

GIBSON DAM AND SUN RIVER PROJECT HISTORY

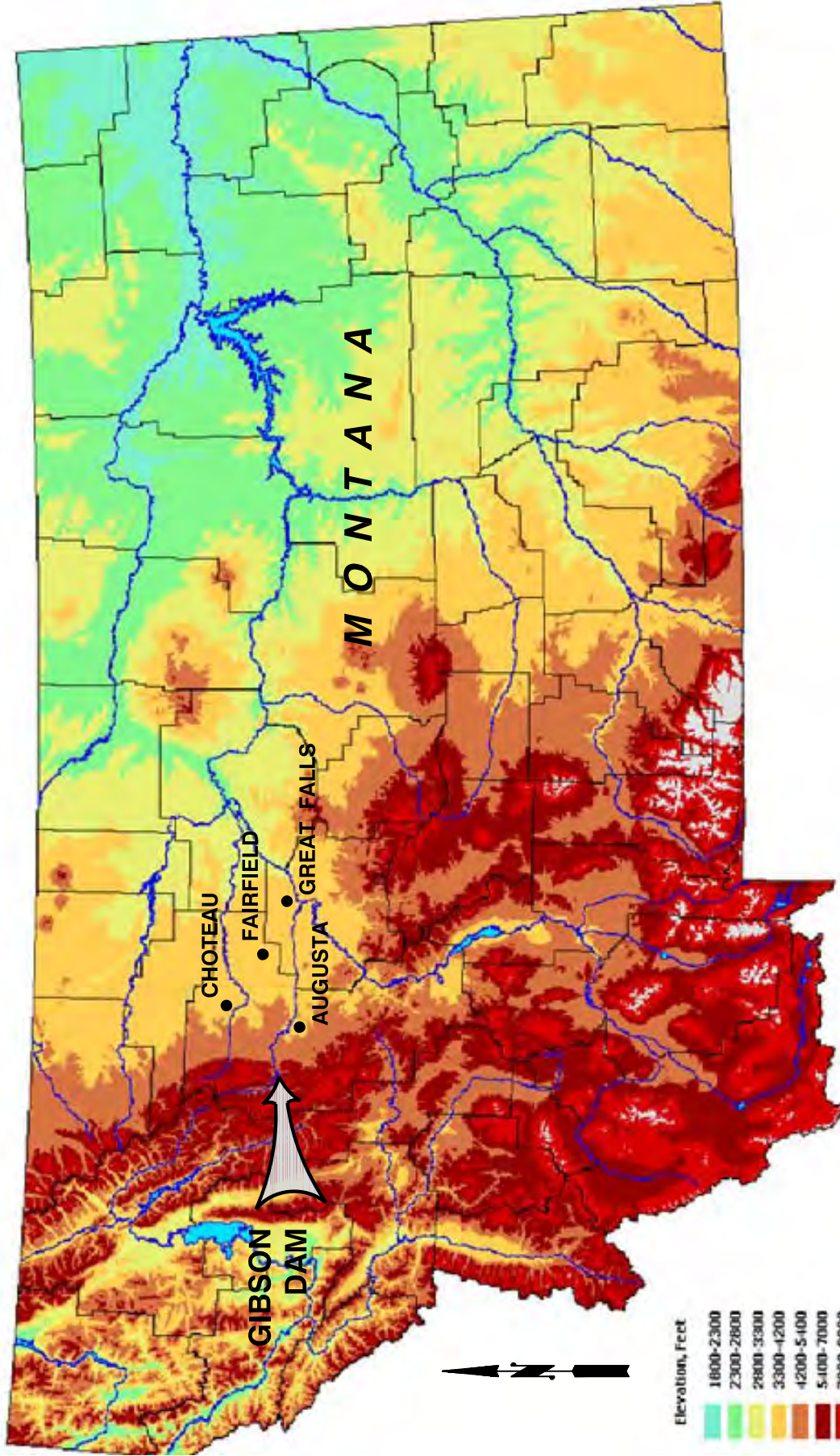
Gibson Dam was constructed in 1926-1929 by the USBR as part of the Sun River Project. The project purpose for Gibson Dam was irrigation; however, during the construction two penstock outlets were provided for future hydroelectric generation. Gibson Dam lies within the Lewis & Clark National Forest, administered by the USFS.

Gibson Dam impounds Gibson Reservoir, a 5.5-mile long by 1-mile wide water body. The drainage area above the reservoir is approximately 575 square miles.

Gibson Dam is owned by the USBR, and is the principal storage facility for the Sun River Project. Greenfields Irrigation District (Greenfields) operates the dam and releases water from the dam under direction and control of the USBR. In addition to Gibson Dam, Greenfields operates the intake at Diversion Dam, Pishkun Reservoir, Willow Creek Reservoir and many interconnecting canals and laterals. Greenfields serves approximately 83,000 irrigated acres, and Fort Shaw Irrigation District serves approximately 17,000 irrigated acres from the Sun River Project.

In 1989 the FERC issued a license for FERC Project No. 6863 to the Grisdale Hill Company for a hydroelectric development at Gibson Dam. The license was for a Project with an installed capacity of 15 MW and a projected annual output of 46.1 GWH of energy.

A substation was to be built within a mile of the dam. A 35-mile cross-country transmission line was to be constructed between the substation and a point of delivery near Choteau, MT. The project did not go forward, primarily due to poor power market conditions. Grisdale Hill Company subsequently surrendered the FERC license.



DRAWN: RDM
 CHECKED: TAF
 DATE: 1/14/04

VICINITY MAP
GIBSON DAM
HYDROELECTRIC PROJECT

LEWIS AND CLARK CO. MT

GIBSON DAM
HYDROELECTRIC
COMPANY LLC

3633 ALDERWOOD AVE.
 BELLINGHAM WA 98225
 PH 360-738-9999

1	3/06/06	ISSUE FOR SD 1	RDM	TAF
NO.	DATE	REVISION	BY	CK

412W-915.DWG

BUREAU OF RECLAMATION FEATURES

Names of features are in bold type on first reference in this section to introduce Project terminology that will be used throughout this document. Elevations are referenced as heights in feet above mean sea level, denoted by the term “Elev.”.

Gibson Dam

Gibson Dam is a 199-ft high concrete arch dam with a crest length of 960 ft and a crest width of 15 ft. The drop inlet **spillway** has a discharge capacity of 30,000 cubic feet per second (cfs) at a reservoir water surface of Elev. 4724 ft. The **outlet works** at the base of the dam has a discharge capacity of 3050 cfs at reservoir water Elev. 4724 ft. The outlet works are comprised of two **jet flow pipes** which emanate from the **control house** at the base of the dam. There are two **power penstocks** on the downstream dam face at Elev. 4650 ft. These were installed during the initial construction to facilitate future hydroelectric development.

PROJECT FEATURES

The Project would consist of a **powerhouse** located at or near the base of Gibson Dam, a 5-35kV **transformation** located near the powerhouse, a **35kV transmission line** extending from the transformation to a 35-69kV **substation “Canyon Substation”**, and a **69kV overhead transmission line** extending from Canyon Substation to the existing South Augusta Substation. Of these features, there are alternative powerhouse and transmission locations, as described further in the following.

Powerhouse Alternatives

In the original SD1, there were two powerhouse alternatives, the Outlet Works Alternative and the Power Penstock Alternative. These alternatives differed primarily in the utilization of the power penstocks and jet flow pipes. Since the original SD1, GDHC has gained further insight into USBR Gibson Dam operations and downstream flow requirements, which have led to refinement of the original powerhouse alternatives.

Specifically, we have revised the powerhouse configuration to include two smaller turbines (about 1.5 MW each) on conduits emanating from one jet flow pipe, and two larger turbines (about 6 MW each) connected to conduits from the two power penstocks. This arrangement is similar to the power penstock alternative described in the original Scoping Document. Further, under this general arrangement, we have identified two powerhouse locations, upstream and downstream, to address various construction and geotechnical considerations to be further researched. Finally, at the upstream powerhouse location, there are two alternatives for powerhouse alignment, either parallel or perpendicular to the dam face.

It was decided to use both power penstocks in all cases because Gibson Reservoir water elevations would typically be above the elevation of the power penstock intakes at the time of year (summer through early fall) when Gibson Project discharge is highest.

The revised alternatives are:

1. **Upstream Alternative**, with the powerhouse located just downstream of Gibson Dam. Under this alternative, the powerhouse could be either **parallel** or **perpendicular** to the dam (Figures 2 and 3).
2. **Downstream Alternative**, with the powerhouse located adjacent to the access road approximately 250' downstream from the base of the dam (Figure 4).

Under the Upstream Alternative, the choice between the perpendicular or parallel alignment would depend on water quality concerns related to dewatering the work area during construction.

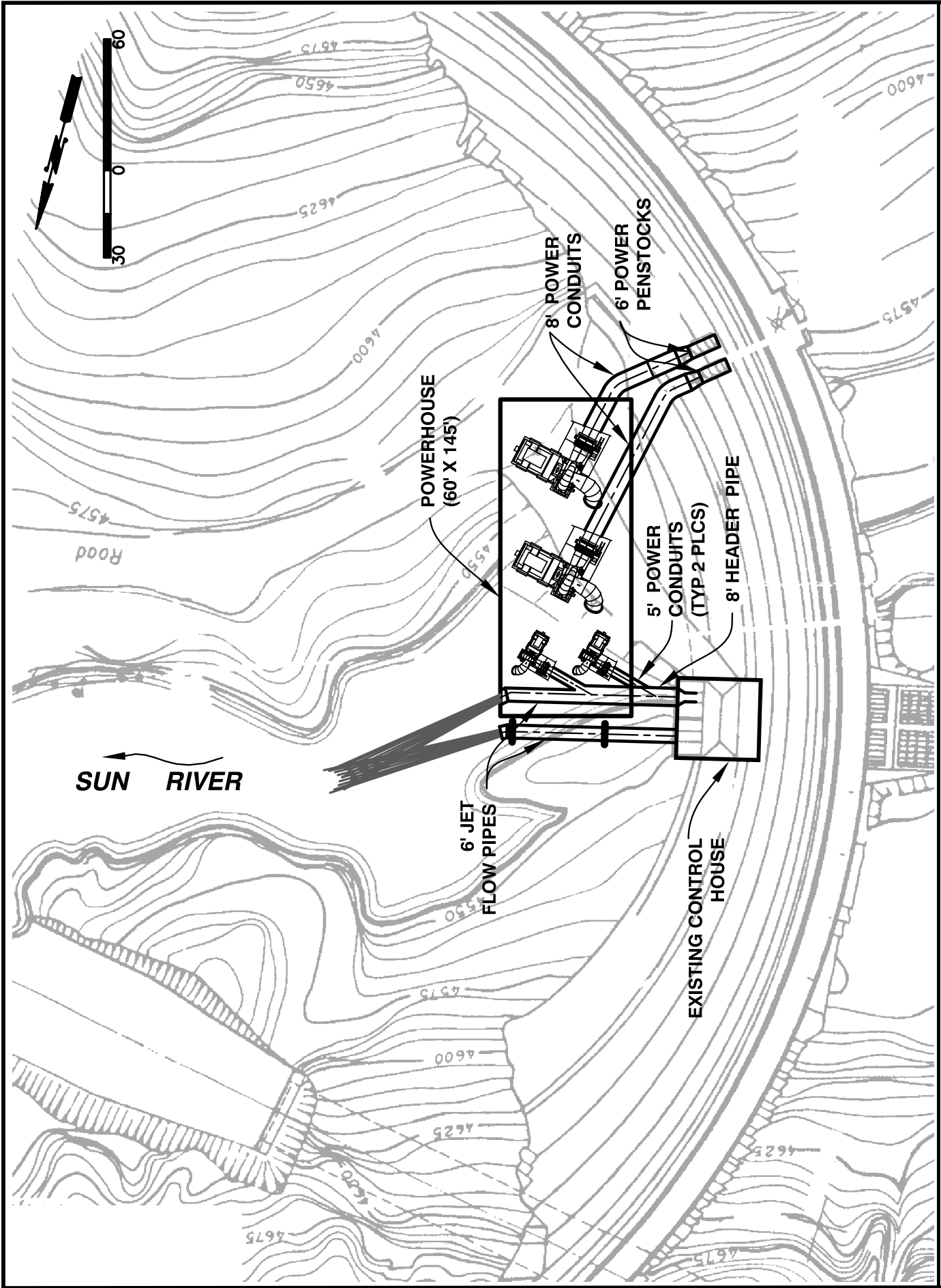
Under the Downstream Alternative, geotechnical findings would be important in final powerhouse location. This alternative was added from concerns and potential difficulties that might arise from the need to blast near the base of Gibson Dam during construction, and also concerns relating to de-watering requirements of the upstream alternatives.

All alternatives would involve a roughly 60 ft X 160 foot **powerhouse** which would house two 6 MW and two 1.5 MW horizontal shaft Francis-type **turbine/generators**.

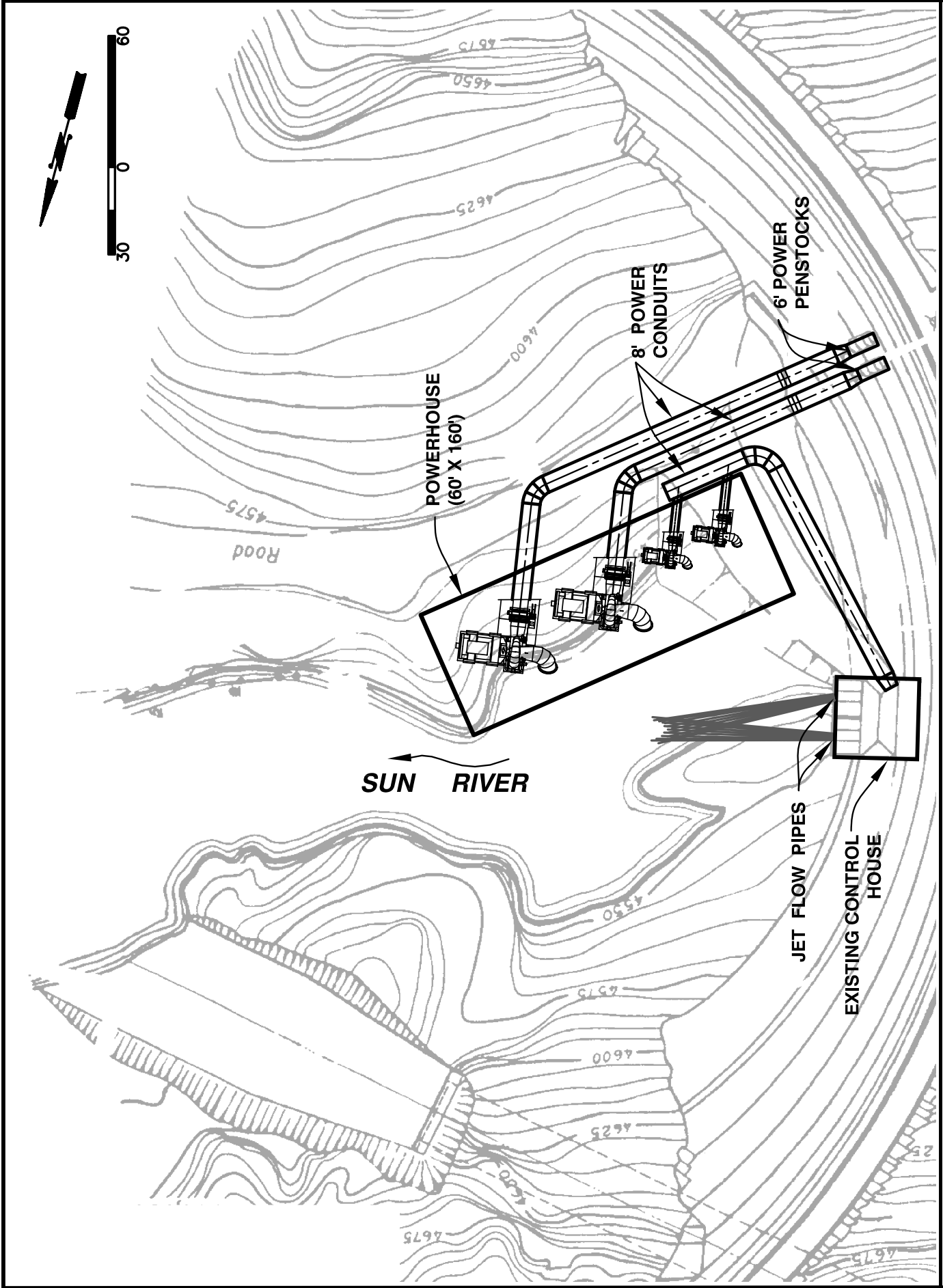
All three alternatives would require a total of three eight-foot diameter pipes, one emanating from one of the jet flow pipes and two from the power penstocks. The second jet flow pipe would remain in its current condition to discharge flows into Sun River, as required for irrigation, when the flow is greater than the discharge capability of the power plant. Routing of these pipes would be determined by final powerhouse location and geotechnical findings.

Powerhouse Control, Storage & Maintenance Building “Maintenance Building”

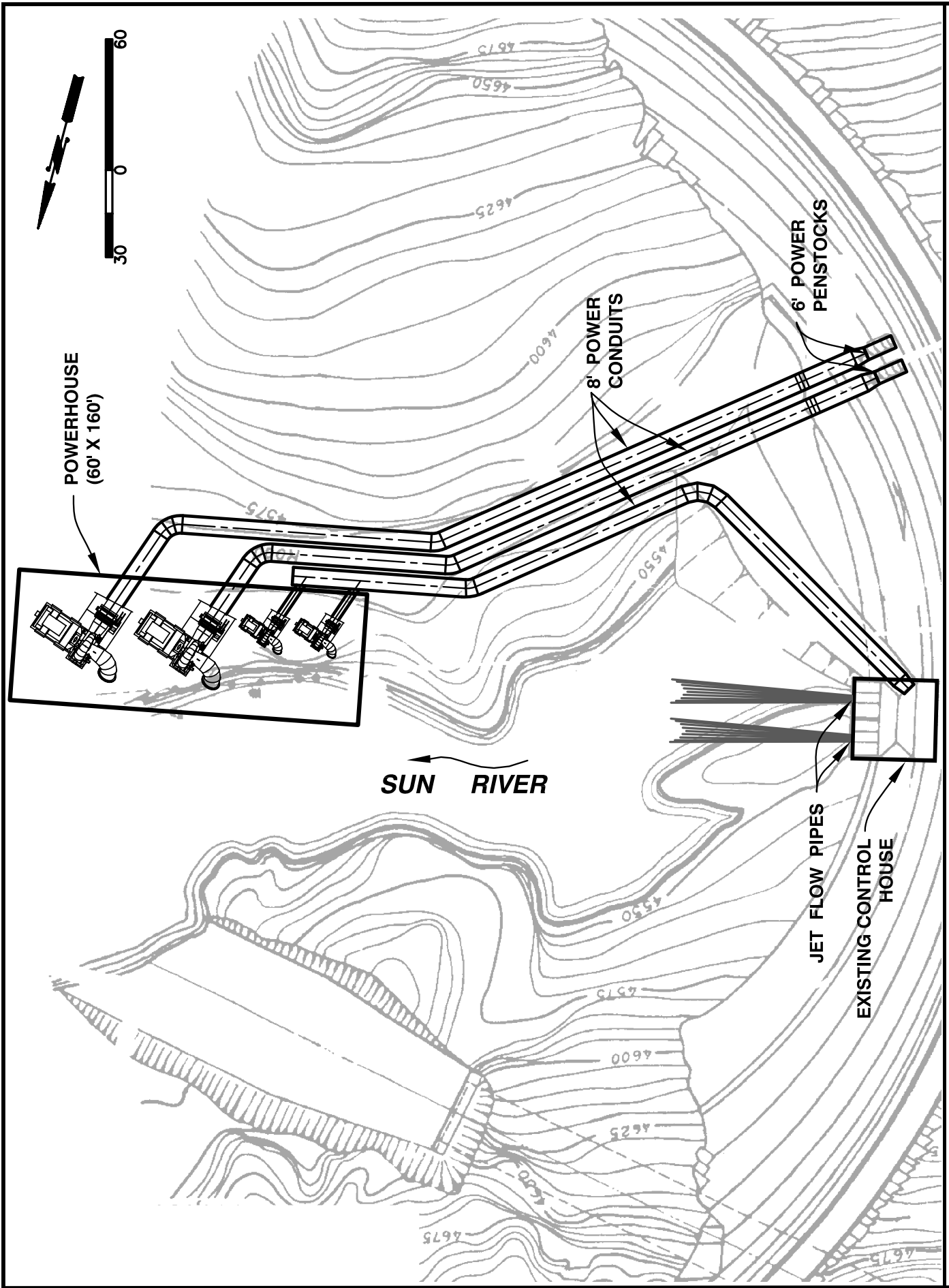
The **Maintenance Building** will house some of the powerhouse controls. This enables the powerhouse to have a smaller footprint. The maintenance building will also house spare parts for the turbine/generators and the transmission line, and equipment for Project maintenance. The building will be used to house personnel during construction, and during overhaul and maintenance of the Project. The Maintenance Building will be approximately 1400 feet downstream of the dam near existing reclamation maintenance facilities.



**FIGURE 2. UPSTREAM ALTERNATIVE, PARALLEL POWERHOUSE ALIGNMENT
GIBSON DAM HYDROELECTRIC PROJECT**



**FIGURE 3. UPSTREAM ALTERNATIVE, PERPENDICULAR POWERHOUSE ALIGNMENT
GIBSON DAM HYDROELECTRIC PROJECT**



**FIGURE 4. DOWNSTREAM ALTERNATIVE
GIBSON DAM HYDROELECTRIC PROJECT**

Transmission Facilities

As with proposed Project powerhouse design, GDHC has further evaluated transmission facilities since distributing the original Scoping Document I in October, 2005. In that document, GDHC proposed the following two alternatives:

1. **Cross-Country Alternative**, which would involve a 69 kV cross-country transmission line that would leave Sun River Canyon Road half way to Augusta, and run due east cross-country approximately seven miles to one of two existing substations near SR 287.
2. **County Road Alternative**, which would involve a 69 kV wood pole transmission line extending approximately 18 miles along Sun River Canyon County Road to the existing electrical grid facilities (the South Augusta Substation) near Augusta, Montana.

After further evaluation, GDHC has eliminated the Cross-Country Alternative because of land access and routing difficulties which might be encountered.

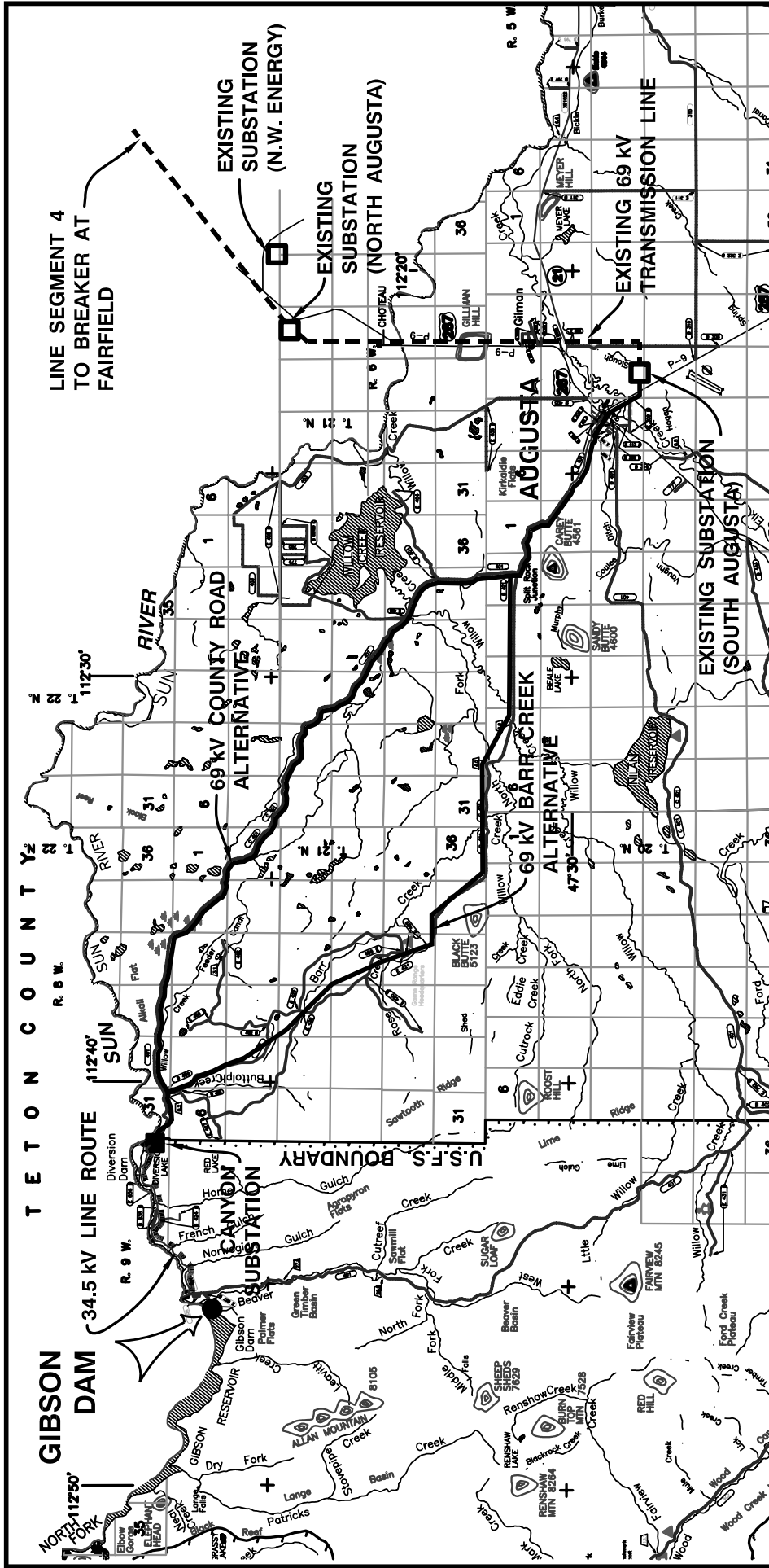
GDHC has added the following alternative:

3. **Barr Creek Alternative**, which would involve going cross country and departing from the county road at Buttolph Creek, and generally following existing 4wd roads in a southeast direction, paralleling Barr Creek, past the Sun River Range Headquarters, to the Kirkaldie Canal, then rejoins the county road at Split Rock Junction. This alternative is being evaluated for visual impact improvements.

The transmission line will be primarily overhead, however GDHC is evaluating the potential to reduce the visual or aesthetic impacts. The exact routing relative to which side of the road the line may occupy and which segments may or may not be buried will be the subject of future consultation and design/alignment refinement. GDHC will evaluate cost considerations of these alternatives during the licensing process. Figure 5 shows the proposed transmission routes.

Project Boundary.

The proposed Project Boundary includes all lands to be occupied by the Project generation facilities (Figure 6), and a 100-ft. wide corridor for the transmission line and substation that connects the powerhouse to the South Augusta substation. Within this Boundary, as partially shown on Figure 6, there are lands currently owned and/or managed by the USBR, and the USFS. The powerhouse alternatives are located on USBR lands. Access to the Project is via Forest Service Road No. 108 within the Forest Service Boundary. The transmission facilities will lie within the 100-ft. wide strip of land, 50-ft. each side of the transmission line. The transmission line will be adjacent and parallel to Forest Service Rd. No. 108 within the Forest Service Boundary. The transmission line from the Forest Service Boundary to Augusta MT. will either be adjacent and parallel to the centerline of the Sun River Canyon Road, or on the Barr Creek Alternative transmission line that traverses the Sun River Wildlife Management Area (refer to Figure 5 "Transmission Line Alternatives").

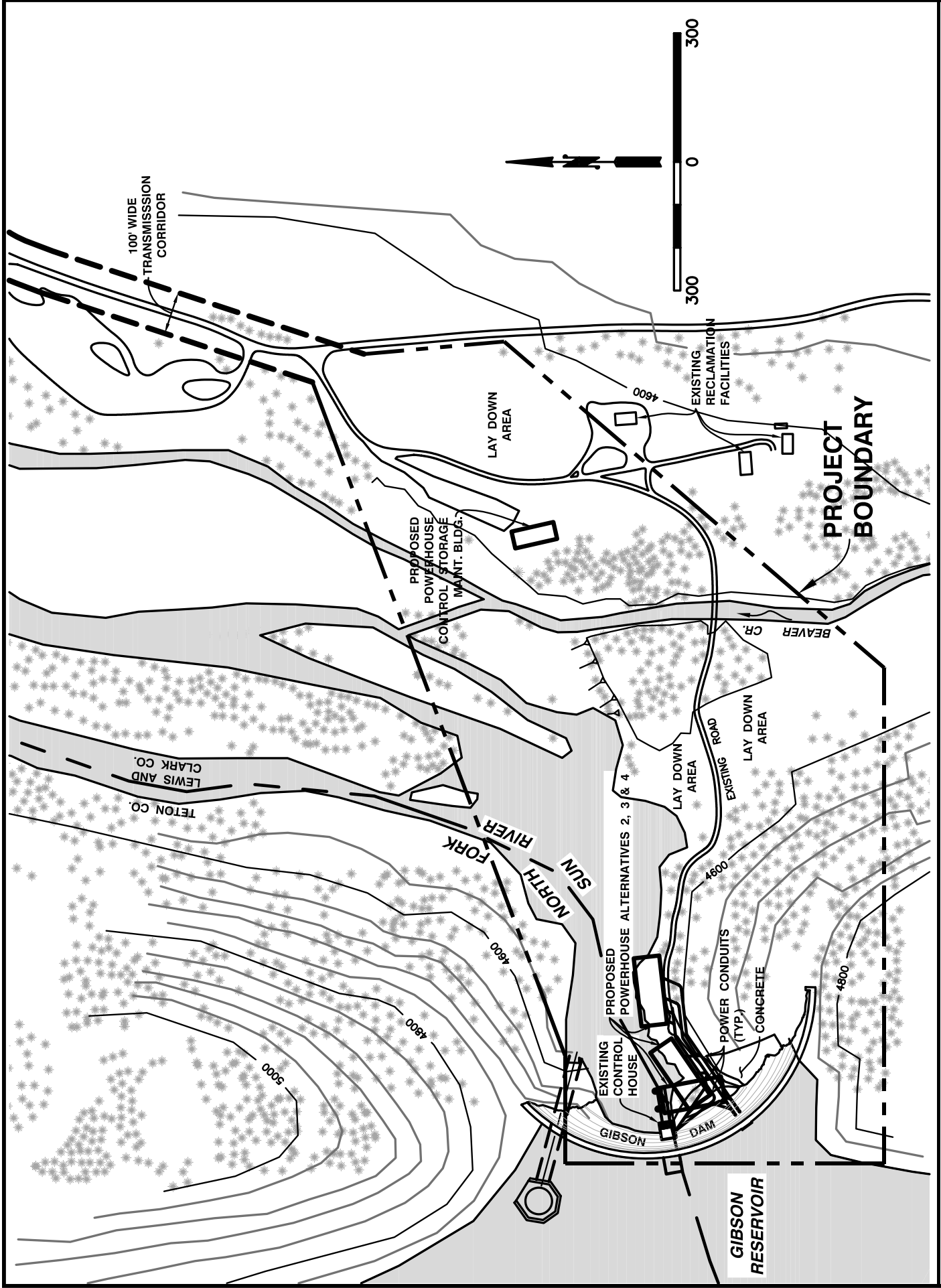


SCALE: 1" = 3 MILES



DRAWN: RDM		GIBSON DAM TRANSMISSION LINE ALTERNATIVES	
CHECKED: TAF		HYDROELECTRIC COMPANY LLC	
DATE: 1/05/05		FIGURE 5	
412W-938.DWG		GIBSON DAM PROJECT	
LEWIS AND CLARK CO.		MONTANA	
NO.		DATE	
1		3/06/06	
0		2/27/06	
REVISION		BY CK	
ISSUE FOR SD 1		RDM TAF	
ISSUE FOR REPORT		RDM TAF	

GIBSON DAM
HYDROELECTRIC
COMPANY LLC
3633 ALDERWOOD AVE.
BELLINGHAM WA 98225
PH 360-738-9999



**FIGURE 6. PROJECT BOUNDARY AND FACILITIES
GIBSON DAM HYDROELECTRIC PROJECT**

PROJECT LANDS

The existing Gibson Dam facilities and reservoir occupy approximately 2000 acres of U.S. lands administered by the USBR and the USFS. Of this total, the reservoir and beach (approximately 300 horizontal feet from high water line) occupy 1841 acres.

The Project lies within U.S. Geological Survey (USGS) Patricks Basin and Sawtooth Ridge, MT quadrangle map(s), within the locations presented in Table 1.

Table 1. Map Locations of Gibson Dam Project Features.

Project Features	Map Locations
Dam, Powerhouse	112 deg, 47 min. W, 47 deg, 36 min. N
Canyon Substation	112 deg, 41 min. W, 47 deg, 37 min. N
Augusta Substation interconnection	112 deg, 23 min W, 47 deg, 29 min N

PROJECT OPERATION

Operation of the proposed Project would result in no change in the existing flow regime of the Sun River. The three powerhouse alternatives described above have the capability of discharging approximately 1525 cfs into the Sun River. Each of the two existing jet flow pipes at the outlet works have the capability of discharging approximately 1525 cfs into the Sun River, for a combined maximum discharge capability of 3050 cfs. The two water release devices (powerplant and jet flow pipes) would be balanced to provide a combined flow equal to the flow required by the existing irrigation and/or other uses. Project discharge would be continuously and remotely monitored and the monitoring system coordinated with Gibson Dam operations.

It is required that the existing 3050 cfs maximum discharge capability of Gibson Dam, excluding the drop inlet spillway, not be reduced by the proposed Project. To meet this requirement, the proposed Project is being designed to discharge 1525 cfs through the powerplant, and 1525 cfs through one of the jet flow pipes. Should the powerplant shut down, the second jet flow pipe could be opened to obtain the 3050 required flow.

During periods of high releases the turbine/generators would operate at maximum capacity and flow. The jet flow pipes would discharge any additional required flows in order to maintain the desired flow regime. Under very high flow and reservoir elevation conditions, additional discharge would require use of the drop inlet spillway.

At flows less than the maximum discharge capacity of the Project turbines, the jet flow pipes would be closed and the flow regulated through the turbines. At very low flows, successive shutdown of turbines would be implemented to maintain the desired water release.

SUN RIVER HYDROLOGY

Streamflow in the Sun River has been monitored by the US Geological Survey from 1964 through 2004 at a USGS gage station near Simms, Montana. The average Sun River discharge at this gage has been 450 cfs (Figure 7, Table 2). Median flow has been less than 240 cfs (Figure 8). Peak flow recorded at the gage was 8500 cfs in June, 1975. Streamflow at the Simms gage has varied over the period of record due to drought cycles and changes in the irrigation deliveries from Diversion Dam.

PROPOSED PROTECTION AND ENHANCEMENT MEASURES

GDHC has begun consultation with Montana State and federal resource agencies to develop a list of Protection, Mitigation and Enhancement (PME) measures. Although no specific measures have been adopted, it has become apparent that changes in the Sun River streamflow regime are among the highest resource priorities. It is understood by GDHC and resource agencies that GDHC will have no control over the streamflow regime on the Sun River, or flows from Gibson Dam. GDHC will utilize the existing streamflow regime for power production, as dictated and controlled by others.

However, following preliminary meetings on this topic (streamflow regime), GDHC proposes to:

- Participate in the Sun River Watershed Group Work, USBR and other consulting agencies in the development or refinement of an operational model for the Sun River Project.
- Develop or refine a method for determining fish habitat value in the Sun River relative to various streamflow regimes; and
- Conjunctively assess effects of various reservoir elevations in terms of release water temperatures.

Other issues being considered at this time are:

- Transmission facility design to prevent raptor electrocution;
- Construction period conditions to avoid impacts on migrating elk and lambing bighorn sheep;
- Measures to address grizzly bear encounters during construction, operation and maintenance; and
- Routing and design conditions for the transmission line to reduce or eliminate visual impacts on views of the Rocky Mountain Front.

These and other potential PME measures relate to issues described in the “Resource Issues” section, below.

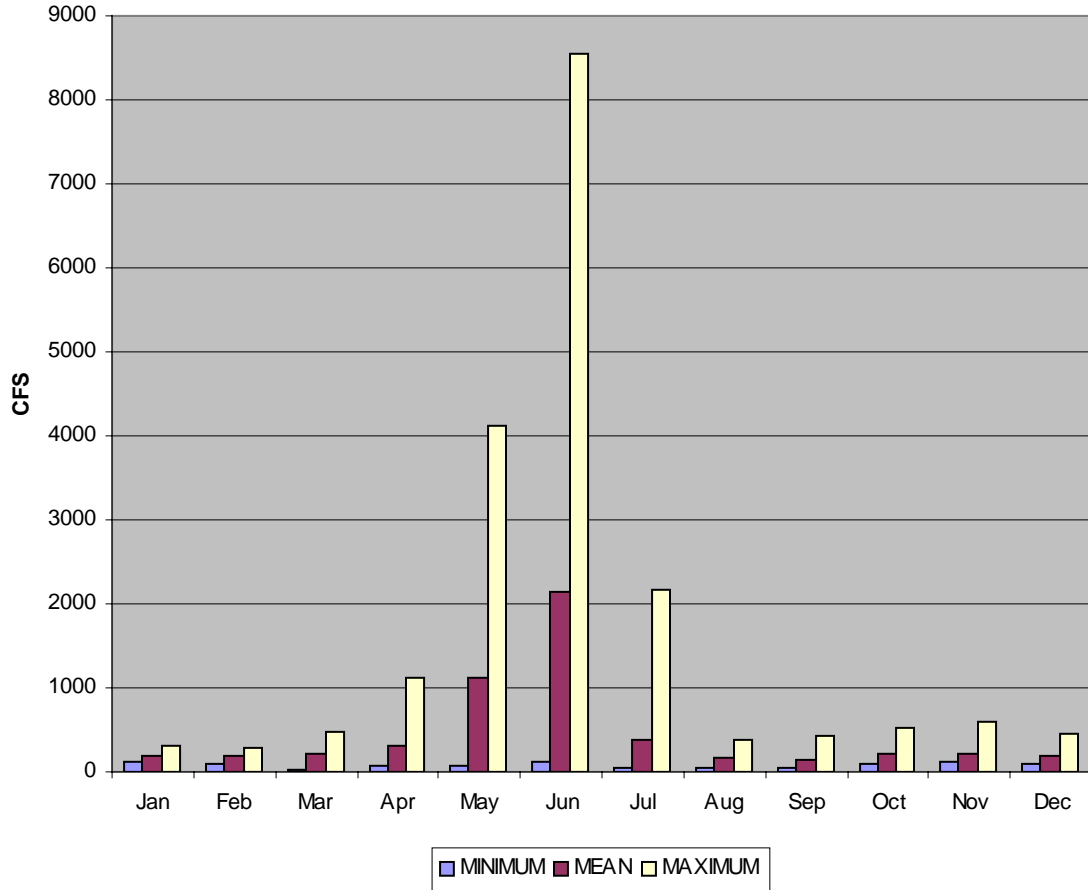


Figure 7. Mean, maximum and minimum monthly flows, USGS gage Sun River at Simms, 1964-2004

Table 2. Mean, maximum and minimum flows, Sun River at Simms, 1964-2004

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Min.	119	96.3	29.3	77.6	72.1	109	44.3	48.8	49.3	89	120	99.8
Mean	191	188	207	313	1129	2142	385	161	147	203	217	192
Max	314	291	473	1125	4123	8558	2165	383	422	519	596	456

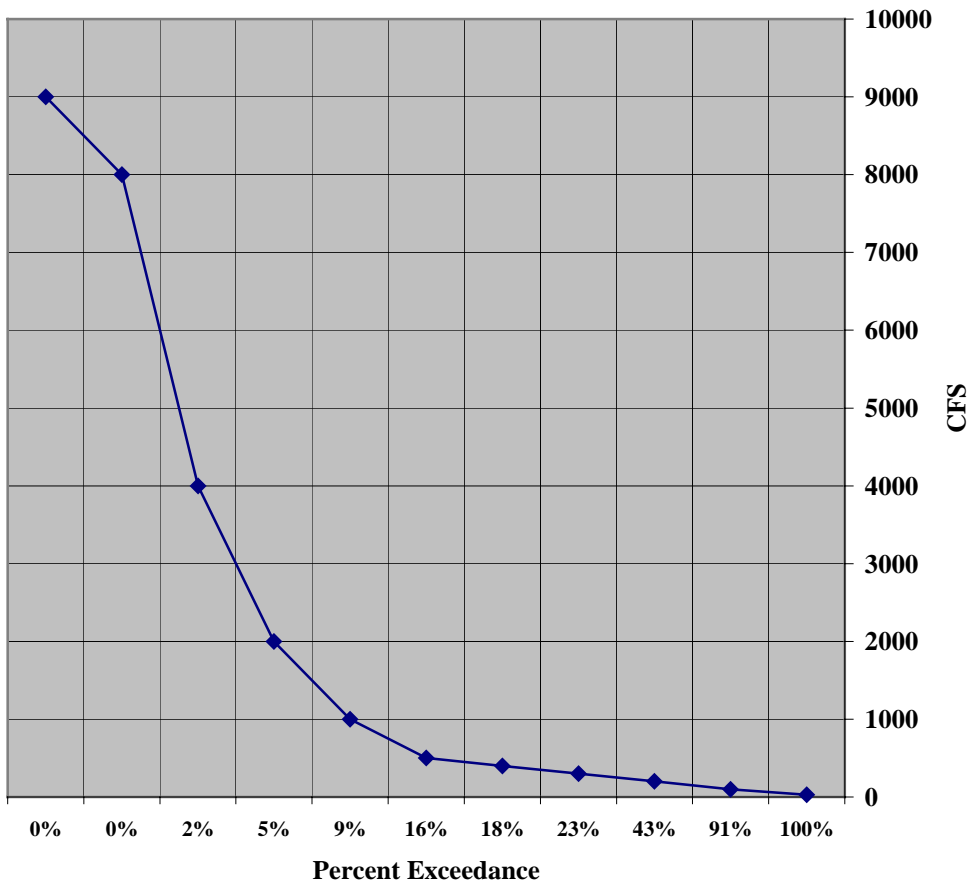


Figure 8. Flow duration curve, Sun River at Simms, MT.

PROJECT ALTERNATIVES

GDHC Proposed Action

At this time, GDHC proposes to develop the Project using one of the three powerhouse alternatives and one of the two transmission line alternatives. We expect, through consultation, to refine the existing proposals and perhaps to develop new alternatives that better address economic, engineering and environmental issues.

Other Alternatives to be Formulated and Considered

Project operations are based on the existing Gibson Reservoir water releases. However, GDHC will participate in the Sun River Watershed Group to assist in development of a flow model which looks at relationships between Sun River streamflow and its correlation to irrigation, fish habitat, and power production.

No Action

The No Action Alternative is required under NEPA regulations to reflect how the Gibson Dam Project would continue to operate under present conditions and if no PME measures were implemented. Pursuant to NEPA, this alternative establishes the baseline environmental conditions against which all other “action” alternatives will be compared.

Alternatives Eliminated from Further Study

GDHC has eliminated the “outlet works powerhouse alternative” and the “cross-country transmission alternative” as described in the ICD.

RESOURCE ISSUES

Issue identification through the Scoping process allows the public and resource agencies to describe and discuss potential impacts which licensing might cause. It is therefore highly important for all participants to read issues in this document carefully relative to their language and content, and to offer new issues or modifications of the existing issues as you feel necessary.

FISHERIES

Issue F1. Sun River Instream Flow.

Whether Project operations would affect fish in the Sun River.

Issue F2. Gibson Reservoir Level.

Whether Project operation would affect fish populations in Gibson reservoir.

Issue F3. Fish Entrainment.

Whether the existing Project intake in Gibson Reservoir might be a source of fish mortality due to entrainment of fish during Project operations. Water velocities are expected to decrease in the area of the existing intake. Under this issue, GDHC would examine the likelihood of fish entrainment based on presence or absence of fish in the intake area and other estimates of entrainment likelihood.

Issue F4. Water Release Temperature.

This issue is addressed under the Water Quality and Quantity Section, Issue WQ1, on the following page.

Issue F5. Ramping Rates.

Whether short-term (over minutes or hours) fluctuations in streamflow and resulting water level might affect various life-stages of fish in the Sun River. Large rapid increases or reductions of water level or velocity have been shown to displace, strand or otherwise stress fish below hydroelectric dams.

Issue F6. Load Rejection.

Whether, following a load-rejection or other rapid Project shut-down, there could be a period of dewatering in the Sun River. On certain projects without by-pass valve provisions, short-term dewatering has caused fish mortality in both by-passed reaches and below project powerhouses. The Project would be designed such that should the turbines shut down due to load rejection, a jet flow valve will open in the control house to prevent de-watering of the Sun River.

WILDLIFE AND BOTANICAL RESOURCES

Issue W1. Raptor Protection

Whether the Project transmission facilities would pose a threat to raptors related to design of the transmission towers and associated conductor spacing. GDHC believes that this issue will be fully addressed through adherence to design criteria in USFWS "Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 1996", specifying distances between conductors, configuration and other factors.

Issue W2. Construction related effects on elk migration and bighorn sheep lambing.

Whether construction-related travel, noise or human presence for either the powerhouse or transmission facilities would disturb elk migration or bighorn sheep lambing. Sun River canyon and its environs are known to be critical habitat for bighorn sheep lambing and wintering. The canyon also serves as a migration corridor for elk.

Issue W3. Grizzly bear safety

Whether increased human activity during construction would result in increased human encounters with grizzly bears. Typically, a FERC license article would address such factors as bear attraction, food and trash management, bear behavior awareness and other encounter avoidance measures.

WATER QUALITY AND QUANTITY

Issue WQ1. Effects of Gibson Reservoir Water Temperature on Sun River Aquatic Resources.

Whether water temperature from Gibson Reservoir releases might affect aquatic resources in the Sun River. The proposed releases draw water from a zone of the lake which is usually colder than it would be were it drawn from the lake surface. Under this issue, GDHC would evaluate Gibson dam release temperatures together with Sun River temperature regimes, and examine potentials for changes in release temperature regimes.

Issue WQ2. Effects of Gibson Reservoir Dissolved Gases on Sun River Aquatic Resources.

Whether water emanating either from the Gibson Dam spillway or the Project turbines might be supersaturated with dissolved gases, most notably nitrogen or oxygen. Supersaturated gases below large dams and hydroelectric projects may cause conditions that effect fish. Part of GDHC's proposed water quality study program includes measurement of existing gas saturation conditions and predictions of those conditions under the presence of the hydro Project's generators and operation regime.

Issue WQ3. Effects of Licensing on existing Sun River and Gibson Reservoir Water Rights and Related Requirements.

It is anticipated that the Project will use water exiting Gibson Dam under previous water rights or appropriations. The Sun River Project, including Gibson Dam was constructed for irrigation purposes, and water flowing from the dam is allocated for that purpose. The intent of this Project is to use existing flows from the dam to generate electricity.

CULTURAL RESOURCES

Issue CR 1. Occurrence and potential impact on cultural resources.

Whether construction or operation of the Project would affect known or to be determined cultural, historical or archaeological resources. Based on the Grisdale Hill licensing process, it is known that there are existing cultural resources in the Project area. GDHC will develop a cultural resources study plan to assure compliance with Section 106 of the Historic Preservation Act by surveying the area of potential effect, determining presence

or absence of resources, and consulting with responsible agencies to determine how any resources would be addressed.

AESTHETICS

Issue A1. Scenic and Aesthetic Effects of the Project features on views of the Rocky Mountain Front and Sun River canyon areas.

Whether the Project powerhouse and/or transmission facilities would affect scenic values of the Rocky Mountain Front and viewsheds within Sun River canyon. This issue relates to 1) design and location of the powerhouse, support buildings and substation to minimize visual disturbance and 2) routing of the transmission lines to minimize aesthetic impact of the Rocky mountain front views.

RECREATION

Issue R1. Recreation Access during construction.

Whether construction activities, particularly during the summer periods of high recreational use, might affect access to the Sun River or Gibson Reservoir. Under this issue, GDHC would examine construction schedules relative to the need for road closures or other transportation restrictions.

SOCIOECONOMICS

Issue SE1. Effects of licensing-related changes for non-developmental resources on economics.

- a.) Whether the Project might affect electric rates within the proposed service area, and effects of electric generation revenue on GID economics.
- b.) Whether workforce for Project construction might be a factor in overall regional or local economy.
- c.) Whether the Project would improve the local transmission line efficiencies, voltage stability, and reliability.

CUMULATIVE EFFECTS

According to FERC NEPA implementation regulations (§1508.7), an action may cause cumulative impacts on the environment if its impacts overlap in space and/or time with the impacts of other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time to include hydropower and other land and water development activities.

At the time of this document, there are no reasonably foreseeable construction or development activities in the Project area. Of potential interest in the Gibson Dam Project licensing is the Sun River Watershed Group (SRWG), an association including USBR, GID and various Montana state and federal resource agencies. The SRWG is in the process of evaluating water use in the Sun River basin in terms of streamflow for fish, reservoir levels for recreation and the needs of downstream irrigators, among other issues. Decisions made within the SRWG would affect the Gibson Dam Project generation, and GDHC will participate with the group as appropriate during the licensing period. Readers knowing of other likely actions within the geographic and temporal scopes defined below should include a description of those activities in their comments on SD1.

APPLICABLE COMPREHENSIVE PLANS

FERC licensing regulations require review of all Project operations and conditions relative to applicable comprehensive plans of state and federal resource agencies and tribes. GDHC has preliminarily reviewed a list of plans provided by FERC, but asks that reviewers provide a list of plans, which their agency/entity believes relevant to the licensing.

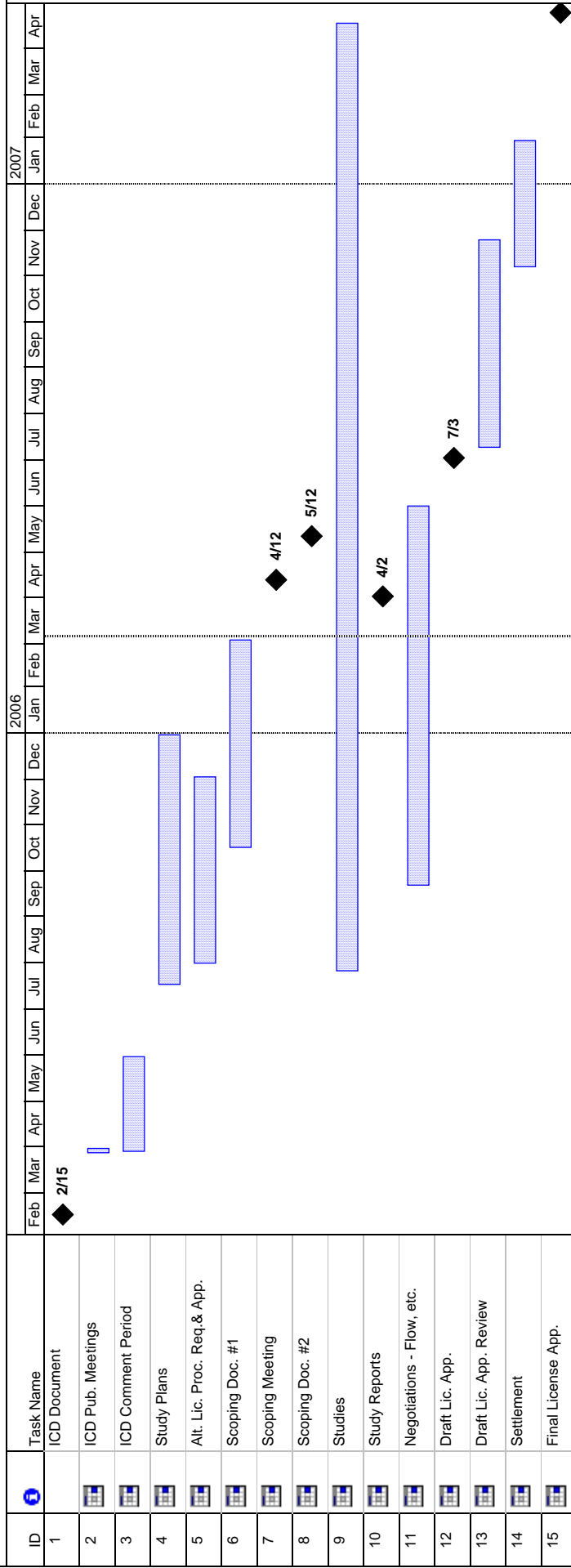
PROCESS PLAN AND SCHEDULE

The plan and schedule for the Project licensing is shown in Figure 9. This schedule is based on our proposal to use the Alternative Licensing Process (ALP) as described above.

Generally, the schedule is divided into pre-filing (licensee's activities prior to submittal of the final Application) and post-filing (FERC and licensee's activities after Application submittal). The pre-filing period is from April, 2004 through March, 2007. During this period, GDHC will consult with stakeholders to plan and conduct studies, begin the preliminary NEPA process phases, negotiate recommendations and prepare the final Application.

Post-filing activities will extend from March, 2007 to issuance of a license. During the post-filing period, the FERC may request additional information prior to preparation of its own NEPA documents.

GIBSON DAM HYDROELECTRIC PROJECT FERC Project No. 12478



Project: Gibson
Date: Mon 3/6/06

Task

Split

Progress

Milestone

Summary

Rolled Up Task

External Tasks

Project Summary

Rolled Up Split

Rolled Up Milestone

Rolled Up Progress

External Tasks

Project Summary

PRELIMINARY DRAFT EA OUTLINE

The tentative outline for the Gibson Dam Project PDEA is shown below. The outline is based on general NEPA guidelines and recent FERC recommendations; the final contents and organization of the PDEA may be revised, depending on input received during Scoping and further consultation.

Cover Sheet

Summary

Table of Contents

List of Figures

List of Tables

Acronyms and Abbreviations

1.0 PURPOSE AND NEED FOR ACTION

- 1.1 Purpose of Action
- 1.2 Need for Power
- 1.3 Interventions
- 1.4 Agency Consultation
- 1.5 Scoping Process

2.0 PROPOSED ACTION AND ALTERNATIVES

- 2.1 Applicant's Proposal
 - 2.1.1 Project Description and Operation
 - 2.1.2 Proposed Environmental Measures
- 2.2 Modifications to Applicant's Proposal
 - 2.2.1 Agency and Interested Party Recommendations (Mandatory Conditions and 10(j))
- 2.3 No Action Alternative
- 2.4 Alternatives Considered but Eliminated from Detailed Study

3.0 ENVIRONMENTAL CONSEQUENCES

- 3.1 General Locale
- 3.2 Cumulatively Affected Resources
- 3.3 Proposed Action and Action Alternatives
 - 3.3.1 Geology, Soils, and Geomorphic Processes
 - 3.3.1.1 Affected Environment
 - 3.3.1.2 Environmental Effects and Recommendations (for each alternative)
 - 3.3.1.3 Unavoidable Adverse Impacts

- 3.3.2 Water Quantity and Quality
 - 3.3.2.1 Affected Environment
 - 3.3.2.2 Environmental Effects and Recommendations (for each alternative)
 - 3.3.2.3 Unavoidable Adverse Impacts
- 3.3.3 Fisheries Resources
 - 3.3.3.1 Affected Environment
 - 3.3.3.2 Environmental Effects and Recommendations (for each alternative)
 - 3.3.3.3 Unavoidable Adverse Impacts
- 3.3.4 Wildlife and Botanical Resources
 - 3.4.1.1 Affected Environment
 - 3.4.1.2 Environmental Effects and Recommendations (for each alternative)
 - 3.4.1.3 Unavoidable Adverse Impacts
- 3.3.5 Federally Listed Threatened and Endangered Species
 - 3.3.5.1 Affected Environment
 - 3.3.5.2 Environmental Effects and Recommendations (for each alternative)
 - 3.3.5.3 Unavoidable Adverse Impacts
- 3.3.6 Cultural Resources
 - 3.3.6.1 Affected Environment
 - 3.3.6.2 Environmental Effects and Recommendations (for each alternative)
 - 3.3.6.3 Unavoidable Adverse Impacts
- 3.3.7 Recreation
 - 3.3.7.1 Affected Environment
 - 3.3.7.2 Environmental Effects and Recommendations (for each alternative)
 - 3.3.7.3 Unavoidable Adverse Impacts
- 3.3.8 Socioeconomics
 - 3.3.8.1 Affected Environment
 - 3.3.8.2 Environmental Effects and Recommendations (for each alternative)
 - 3.3.8.3 Unavoidable Adverse Impacts
- 3.3.9 Aesthetic Resources
 - 3.3.10.1 Affected Environment
 - 3.3.10.2 Environmental Effects and Recommendations (for each alternative)
 - 3.3.10.3 Unavoidable Adverse Impacts
- 3.4 No Action Alternative
- 3.5 Irreversible and Irretrievable Commitment of Resources
- 3.6 Relationship between Short-Term Uses and Long-Term Productivity

4.0 DEVELOPMENTAL ANALYSIS

- 4.1 Power and Economic Benefits of the Project
- 4.2 Cost of Environmental Enhancement Measures

- 4.3 Comparison of Alternatives
- 5.0 COMPREHENSIVE DEVELOPMENT AND RECOMMENDATIONS**
 - 5.1 Comparison of Proposed Action and Alternatives
 - 5.2 Comprehensive Development and Recommended Alternative
 - 5.3 Cumulative Effects Summary
 - 5.4 Fish and Wildlife Agency Recommendations
 - 5.5 Consistency with Comprehensive Plans
 - 5.6 Relationship of License Process to Laws and Policies
 - 5.6.1 Water Quality Certification
 - 5.6.2 Coastal Zone Consistency Certification
 - 5.6.3 Section 18
 - 5.6.4 Endangered Species Act
- 6.0 LITERATURE CITED**
- 7.0 LIST OF PREPARERS**
- 8.0 LIST OF RECIPIENTS**
- 9.0 APPENDICES**

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

af	Acre foot or feet
ALP	Alternative Licensing Process
cfs	Cubic foot or feet per second
CMT	Culturally-Modified tree
EA	Environmental Assessment
EIS	Environmental Impact Statement
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
GID	Greenfields Irrigation District
HPA	Historic Preservation Act
ICD	Initial Consultation Document
ILP	Integrated Licensing Process
kW	Kilowatt
MDFW&P	Montana State Department of Fish, Wildlife and Parks
MDEQ	Montana State Department of Environmental Quality
MDNRC	Montana State Department of Natural Resources and Conservation
mgd	Million gallons per day
MW	Megawatt
NEPA	National Environmental Policy Act
NGO	Non-governmental Organization
PJD	Preliminary Jurisdictional Determination
SHPO	State Historic Preservation Office
SM	Stream Mile
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USBR	United States Bureau of Reclamation

REFERENCES

Grisdale Hill Company, 1984. Application for License, Major Project, Gibson Dam Hydro Project, FERC No. 6863, Grisdale Hill Co., c/o Mitex, Inc. Boston, MA, Exhibits A-E