

1.0 DRAFT LAND USE STUDY PLAN ANNOTATED OUTLINE

1.1 PROJECT NEXUS AND RATIONALE FOR STUDY [§ 5.9(B)(4)-(5)]

The proposed Cutler Hydroelectric Project (Project) operations would allow greater fluctuations in reservoir surface elevation than currently occur, and this could affect water withdrawal at existing pump sites, depending on timing. Livestock management depends on fences that extend a short distance into the reservoir, below the ordinary high-water line (OHWL). Reservoir surface elevations could drop below the end of some fences and provide an opportunity for livestock trespassing and/or escape. Increased fluctuations in reservoir surface elevation could also potentially induce increased bank erosion and subsequently reduce livestock pasture and wildlife habitat.

If not timed appropriately, the proposed Project operations could interfere with existing water rights and water withdrawal infrastructure, create opportunities for livestock trespass, and promote bank erosion. The information sought by this Study Plan is not currently available, but could be used during future Project management to minimize potential land use impacts.

1.2 STUDY GOALS AND OBJECTIVES [§ 5.9(B)(1)]

This Land Use Study Plan (Study Plan) includes the following goals and objectives:

- Characterize existing water withdrawal infrastructure.
 - Inventory existing water withdrawal infrastructure in or adjacent to the littoral zone that may be influenced by the proposed Project operations.
 - Clearly describe the relationship between existing water rights in Cutler Reservoir and proposed Project operations.
- Characterize fences used for livestock management near the Cutler Reservoir shoreline.
 - Inventory fences that terminate below the OHWL.
- Characterize erosive features and erosion control structures in Cutler Reservoir shoreline areas.
- Characterize aesthetic resources in the Project Area that may be influenced by proposed Project operations.
- Assess direct, indirect, and cumulative impacts on these resources resulting from the proposed Project operation scenarios, including effects on:
 - Water quantity and water withdrawals.
 - Reservoir bank erosion that could lead to loss of shoreline lands and a reduction in buffers, agricultural lease lands, and wildlife habitat.
 - Aesthetic resources, associated with exposed mud flats, eroding banks, or turbid water.

1.3 RELEVANT RESOURCE MANAGEMENT GOALS AND PUBLIC INTEREST CONSIDERATIONS [§ 5.9(B)(2)]

Relevant resource management goals in the 1995 Resource Management Plan for Cutler Reservoir related to this Study Plan include: enhance water quality; protect, enhance, and develop wildlife habitat; and provide agricultural land use opportunities (PacifiCorp 1995). Considerations from other stakeholders related to this Study Plan are discussed in the FERC scoping document (FERC 2019) and the PAD (PacifiCorp 2019). These considerations are described as goals of this Study Plan in section 1.2.

This Study Plan will review and incorporate existing information related to land use occurring in the Project Boundary. References for studies, reports, and other sources of information analyzed as part of this study will be provided in this section as they are identified. A few of these information sources are:

1. Middle Bear River and Cutler Reservoir Total Maximum Daily Load (TMDL). Utah Division of Water Quality (2010).
2. Water related land use data. Utah Automated Geographic Reference Center (2019).
 - a. Summarize historic land use changes.
 - b. Data are available for download at <https://gis.utah.gov/data/planning/water-related-land/>.
3. Utah Division of Water Rights database. Utah Division of Water Rights (2019).
4. Cutler Reservoir Environmental Inspection Report. PacifiCorp (2017).
5. Cutler Hydroelectric Project (FERC Project No. 2420) Resource Management Plan Five-Year Monitoring Report 2013-2017. PacifiCorp (2018).

1.4 STUDY AREA

This Study Plan will focus on the shoreline of Cutler Reservoir and adjacent areas that are immediately above and below the OHWL defined by the current reservoir elevation range. All surveyed areas will be inside the Project Boundary.

1.5 METHODS [§ 5.9(B)(6)]

1.5.1 CHARACTERIZE WITHDRAWAL INFRASTRUCTURE

All water withdrawal infrastructure associated with Cutler Reservoir will be inventoried for location, condition (e.g. active vs. inactive), and water rights.

- Begin collecting information as soon as the Land Use Study Plan is approved.
 - Utilize existing coverage and other records to develop field survey maps.
- Inventory each withdrawal structure.

- Collect georeferenced pictures, describe structure types (e.g. irrigation gate, dam safety components, low-level gate), and condition in regard to active versus inactive status (e.g. physical appearance and other indicators of active operation).
- Where possible, map lower end of withdrawal structure below OHWL.
- Develop geographic information system (GIS) coverage and database of water infrastructure survey results.
- Identify water rights information associated with each withdrawal structure.
 - Water rights will be determined primarily from location and identifying information collected in field surveys.
 - Complete search of PacifiCorp records or Utah Division of Water Rights database.

1.5.2 CHARACTERIZE FENCES

All fences that terminate below the OHWL defined by the current reservoir elevation range of Cutler Reservoir will be inventoried for location and condition.

- Begin collecting information as soon as the Land Use Study Plan is approved.
 - Utilize existing coverage and other records to develop field survey maps.
- Inventory each fence that terminates below the OHWL.
 - Collect georeferenced pictures of representative fence segment and terminal end of fence below OHWL.
 - Describe existing condition and identify need for repairs or retrofit.
 - Document global positioning system (GPS) location of fence line and terminal end of fence where possible.
 - Develop GIS coverage and database of fence inventory results.

1.5.3 CHARACTERIZE EROSION FEATURES AND CONTROL STRUCTURES

Erosive features in the Cutler Reservoir shoreline area will be inventoried for location and condition.

- Begin collecting information as soon as the Land Use Study Plan is approved.
 - Utilize existing coverage and other records to develop field survey maps.
- Inventory erosive features and erosion control structures in shoreline areas.
 - Characterize existing condition of erosion features and erosion control structures with photos and GPS locations.
 - Identify need for repair or retrofit of erosion control structures, given potentially increased reservoir fluctuation.
 - Develop GIS coverage and database of survey results.

1.6 ANALYSIS AND REPORTING

The Study Plan report will be prepared documenting the study analysis results. The report will include a summary of all collected information and discussion of the analyses and results. Some topics will use the results of LiDAR, hydraulic modeling, and sediment studies to determine shoreline and water depth in the vicinity of existing infrastructure and fences resulting from proposed operation scenarios.

The topics and results of analysis in the report will include the following:

- Water withdrawal infrastructure.
- Fences.
- Erosion features and control structures.

All field survey data will be organized in a GIS project and spreadsheets. Field photos will be linked to GIS coverage. Analysis of data will identify direct, indirect, and cumulative impacts on these resources resulting from the proposed Project operations.

1.7 SCHEDULE, PERIODIC REPORTING, AND ONGOING CONSULTATION

Work will commence once the Land Use Study Plan is approved. Existing data will be collected, organized, and used to prioritize field survey locations.

- Most field work can be conducted outside of the reservoir drawdown.
 - Identification of the terminals ends of some withdrawal pipelines and fences may be easier during the drawdown period.

An Initial Study Report (ISR) will be prepared following the initial survey year. This report will be submitted to PacifiCorp for review and filed with the FERC. The Initial Study Report will be reviewed by stakeholders. If no additional information is warranted, the ISR will identify why no second year of surveys are warranted and that an Updated Study Report (USR) will not be filed. A letter will be filed with FERC in lieu of the USR identifying the lack of need for a second year of studies. If additional information is warranted, a USR will be filed following a survey in year 2. All study reports will be submitted to stakeholders for review and filed with FERC.

1.8 LEVEL OF EFFORT AND COST [§ 5.9(B)(7)]

The level of effort and cost will be determined when the Land Use Study Plan is finalized.

1.9 REFERENCES

- Federal Energy Regulatory Commission. 2019. Scoping Document 1. Cutler Hydroelectric Project Utah. Project No. 2420-054.
- Kleinschmidt Associates. 2018. Cover page photo of the Cutler Reservoir. Matthew Harper.
- PacifiCorp. 2017. Cutler Reservoir Environmental Inspection Report. – Cutler Hydroelectric Project No. 2420-054
- PacifiCorp. 2018. Cutler Hydroelectric Project (FERC Project No. 2420) Box Elder and Cache Counties, Utah. Resource Management Plan Five-Year Monitoring Report 2013-2017. March 29, 2018.
- Utah Division of Water Quality. 2010. Middle Bear and Cutler Reservoir Total Maximum Daily Load (TMDL). Prepared for Utah Division of Water Quality. Prepared by SWCA Environmental Consultants.
- Utah Automated Geographic Reference Center. 2019. Water related land use data. Available for download at <https://gis.utah.gov/data/planning/water-related-land/>.
- Utah Division of Water Rights. 2019. Water rights database – Searching water right records. Accessed at <https://www.waterrights.utah.gov/wrinfo/query.asp>.
- PacifiCorp. 1995. Resource Management Plan for the Cutler Hydroelectric Project. FERC No. 2120. Prepared by PacifiCorp. Assisted by EDAW Inc., Ecosystem Research Institute, and VESTRA Resources.