

**DRAFT**  
**CULTURAL RESOURCES TECHNICAL REPORT**  
**WEBER HYDROELECTRIC PROJECT RELICENSING**  
**FERC PROJECT NO. 1744**

Prepared for

**PacifiCorp**  
Hydro Resources  
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Public Lands Policy Coordination Office Permit No. 20  
Public Lands Policy Coordination Office Permit No. 180

SWCA Project No. 35579  
SWCA Cultural Resource Report No. 15-580

September 8, 2016

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## **ABSTRACT**

**Report Title.** Cultural Resources Technical Report for PacifiCorp's Weber Hydroelectric Project Relicensing, Weber, Morgan, and Davis Counties, Utah, FERC Project No. 1744

**Report Date.** September 8, 2016

**Agency Name.** Federal Energy Regulatory Commission (FERC); Uinta-Wasatch-Cache National Forest (U-W-CNF)

**Permit Number.** Public Lands Policy Coordination Office (PLPCO) Permit Nos. 20 and 180

**Land Ownership Status.** U-W-CNF; Private

**Project Description.** PacifiCorp plans to file a new application for relicense of a major project, the Weber Hydroelectric Project, FERC Project No. 1744, on the Weber River in Weber, Morgan, and Davis Counties in Utah. The current license will expire on May 31, 2020. In July 2015, PacifiCorp requested SWCA Environmental Consultants (SWCA) to conduct a formal cultural resource inventory of the Project Area to support the relicensing process.

**Project Number.** SWCA Project No. 35579; Utah State Antiquities Project No. U-15-ST-0777fp

**Project Location.** The Project Area is located in Sections 28–30, Township 5 North, Range 1 East, Weber, Morgan, and Davis Counties, Utah, Salt Lake Meridian, on the Ogden (2001) U.S. Geological Survey, Utah, 7.5-minute quadrangle.

**Number of Acres Surveyed.** SWCA inventoried a total of 59.97 acres (24.27 hectares [ha]). Of these, 17.05 acres (6.88 ha) were intensively surveyed, 34.45 acres (13.94 ha) were surveyed at a reconnaissance level, and 8.46 acres (3.40 ha) were not surveyed because they are existing paved roads. Of the 59.97 acres (24.27 ha), 29.93 acres (12.11 ha) are on privately owned lands and 30.04 acres (12.16 ha) are on lands administered by the U.S. Forest Service.

**National Register of Historic Places– (NRHP–) Eligible Sites.** Three sites: 42DV184/42WB344/42MO59, 42MO75/42WB523, and 42WB328.

**NRHP-Ineligible Sites.** None.

**Recommendations.** SWCA documented two sites during the inventory of the Project Area: 42DV184/42WB344/42MO59 (a segment of the Union Pacific Railroad) and 42MO75/42WB523 (a previously unrecorded segment of historic U.S. Highway 30 South (U.S. 30S). The new segment of the Union Pacific Railroad is considered a contributing segment of the site and is recommended eligible for the NRHP under Criterion A. U.S. 30S is a historic highway through Weber Canyon that is now Interstate 84. SWCA recommends U.S. 30S eligible for the NRHP under Criterion A. The Devil's Gate Weber Hydroelectric Power Plant Historic District (42WB328) has been previously documented, and no updated documentation is needed; the district was added to the NRHP in 1989.

With the exception of potential fish passage facilities, there are no proposed changes to the existing Project facilities or infrastructure that could adversely affect these sites. Any impacts from fish passage construction or continued operation of the Project would occur within the FERC Project Boundary. PacifiCorp prepared and implemented a cultural resource management plan as part of their 1990 FERC license to address potential adverse impacts from the Project. PacifiCorp will follow the standards and procedures outlined in the plan (and modify the document as necessary) in coordination with the State

Historic Preservation Office for proposed fish passage construction and continued operation and maintenance, as well as any new proposed construction. No significant impacts to cultural resources are expected from this re-licensing effort. Therefore, SWCA recommends **no historic properties affected** for this project.

## CONTENTS

<b>Abstract.....</b>	<b>i</b>
<b>Introduction.....</b>	<b>1</b>
<b>Project Area.....</b>	<b>1</b>
<b>Environment.....</b>	<b>5</b>
<b>Cultural Context .....</b>	<b>5</b>
Early Exploration and Settlement (A.D. 1776–1870).....	5
Railroads .....	6
Highways .....	6
<b>Previous Research.....</b>	<b>7</b>
<b>Methods.....</b>	<b>9</b>
<b>Inventory Results and Evaluations.....</b>	<b>10</b>
42DV184/42WB344/42MO59, Union Pacific Railroad .....	11
NRHP Recommendation.....	12
42MO75/42WB523, Historic U.S. 30S.....	13
NRHP Recommendation.....	15
<b>Management Summary .....</b>	<b>15</b>
<b>References Cited.....</b>	<b>17</b>

## APPENDICES

- Appendix A.** Literature Review Results Map (Detached)  
**Appendix B.** Inventory Results Map (Detached)  
**Appendix C.** Intermountain Antiquities Computer System (IMACS) Forms (Detached)

## FIGURES

<b>Figure 1.</b> Location of the Weber Hydroelectric Project. ....	3
<b>Figure 2.</b> The Union Pacific Railroad and modern modifications, view facing northwest. ....	12
<b>Figure 3.</b> View of U.S. 30S from its eastern end toward the oxbow, facing west. ....	14
<b>Figure 4.</b> Retainer walls of U.S. 30S along the Weber River, view facing east. ....	14

## TABLES

<b>Table 1.</b> Previous Projects Conducted within 1 Mile of the Project Area.....	8
<b>Table 2.</b> Previously Documented Cultural Resources within 1 Mile of the Project Area .....	8

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## **INTRODUCTION**

PacifiCorp, a subsidiary of Berkshire Hathaway Energy, plans to file a new application for relicense of a major project, the Weber Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC or the Commission) Project No. 1744, on the Weber River in Weber, Morgan, and Davis Counties in Utah. The current license will expire on May 31, 2020. The Project has a generation capacity of 3.85 megawatts (MW) and is located partially on federal lands managed by the Uinta-Wasatch-Cache National Forest (U-W-CNF) and partially on private lands owned by the Union Pacific Railroad Company. PacifiCorp filed a Notice of Intent to File Application for New License (NOI) and a Pre-Application Document (PAD) to initiate the FERC's Alternative Licensing Process (ALP) for the Project on May 29, 2015.

During preparation of the PAD (PacifiCorp 2015), PacifiCorp conducted a desktop-level assessment to evaluate existing information on potential cultural resources in the Project Area and to assess potential Project impacts on these resources. In summary, the desktop assessment identified two cultural resource sites located in the Project Area (the Union Pacific Railroad and the Devil's Gate Weber Hydroelectric Power Plant Historic District [the Weber Plant's historic name]) and one potential historic resource (a historic road feature depicted on an 1891 General Land Office [GLO] map). The assessment determined that it is unlikely that cultural resource surveys within the Project Area would have identified additional cultural resources because of the existing development along the narrow canyon floor (e.g., multiple pipelines, railroads, Interstate (I) 84, and the Project). The assessment further determined that it is unlikely that any subsurface deposits containing important information on regional prehistory or history are present. No significant impacts to cultural resources are expected from continued operation of the Project because no new ground-disturbing activities are proposed in any previously undisturbed areas. PacifiCorp prepared and implemented a cultural resource management plan (PacifiCorp 1991) as part of their previous FERC license to address potential impacts to the existing historical district. PacifiCorp will follow the standards and procedures outlined in this plan, in coordination with the State Historic Preservation Office (SHPO), for continued operation and maintenance and new proposed construction.

Based on information in the PAD, PacifiCorp prepared a cultural resource study plan (PacifiCorp 2016). In August 2015, PacifiCorp requested that SWCA Environmental Consultants (SWCA) implement the cultural resources study plan by conducting a formal cultural resource inventory of the Project Area to verify the results of the PAD assessment.

All cultural resource work for the Project was conducted under authority of Utah State Antiquities Project No. U-15-ST-0777fp and Public Lands Policy Coordination Office Principal Investigator Permit Nos. 20 (issued to Lisa Krussow) and 180 (issued to Dave N. Schmitt). All photographs, field notes, and geographical information system (GIS) data are archived at the SWCA office in Salt Lake City, Utah, under project number 35579.

## **PROJECT AREA**

For the purposes of this document, the FERC Project Boundary (or Project Boundary) is defined as all lands and waters within the existing FERC Project Boundary for the Weber Hydroelectric Project No. 1744. The Project Area includes all Project features (encompassing the FERC Project Boundary as defined above), and which extends out for the purposes of characterization and analysis from the furthest edge of the Project Boundary, and across the river to the far riverbank (including the river regardless of which side of the river the Project features are found), as shown in Figure 1.

The existing Project consists of

- a 27-foot-high, 79-foot-long concrete diversion dam on the Weber River with two radial gates that are approximately 29 feet wide and a 35-foot-wide intake structure, for a total width of 114 feet;
- a 9,107-foot-long, 5.0-foot to 6.3-foot-diameter steel pipeline partially encased in concrete beginning at the intake and terminating at the powerhouse on the Weber River;
- a 3 × 18-foot, non-operative fish passage structure that will also serve to pass the minimum flow through the calibrated slide gate opening;
- a powerhouse containing a generating unit with a rated capacity of 3,850 kilowatts (kW) operating under a head of 185 feet producing a 30-year average annual energy output of 16,932 megawatt-hours (MWh);
- a discharging pipe returning turbine flows into the Weber River at the powerhouse; and
- a 77-foot-long, 46-kilovolt (kV) transmission line that connects to the Weber substation.

SWCA inventoried a total of 59.97 acres (24.27 hectares [ha]). Of these, 17.05 acres (6.88 ha) were intensively surveyed, 34.45 acres (13.94 ha) were surveyed at a reconnaissance level, and 8.46 acres (3.40 ha) were not surveyed because they are existing paved roads. Of the 59.97 acres (24.27 ha), 29.93 acres (12.11 ha) are on privately owned lands and 30.04 acres (12.16 ha) are on lands administered by the U.S. Forest Service (USFS). The Project Area is located in Sections 28–30, Township 5 North, Range 1 East.



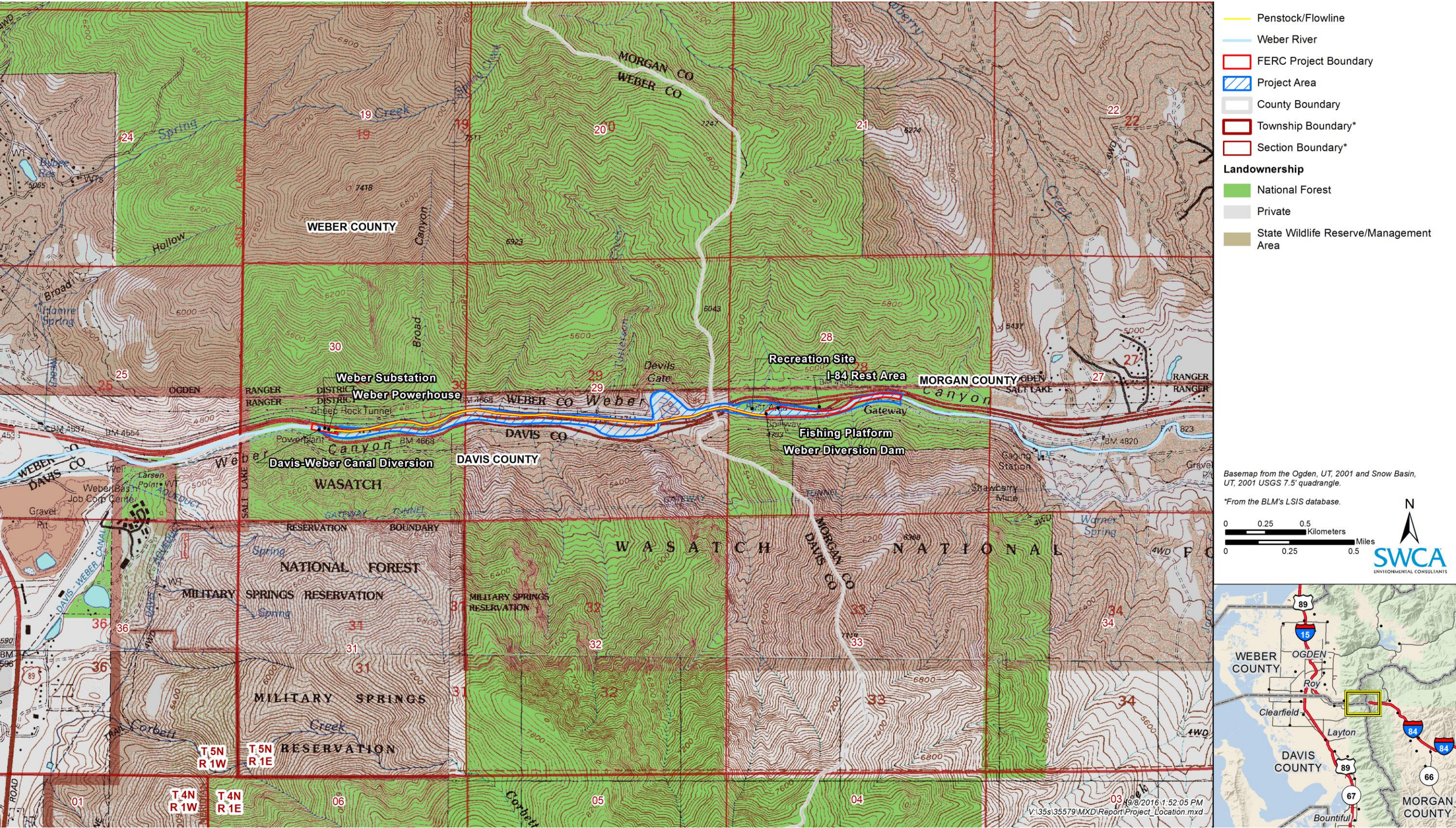


Figure 1. Location of the Weber Hydroelectric Project.



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## ENVIRONMENT

The Project Area is located along the bottom of Weber Canyon. The Weber River flows through the center of the canyon. Vegetation in the canyon consists of Gambel oak (*Quercus gambelii*), mountain mahogany (*Cercocarpus* ssp.), rabbitbrush (*Chrysothamnus* ssp.), big sagebrush (*Artemisia tridentata*), willows (Salicaceae), Russian olive (*Elaeagnus angustifolia*), and various riparian grasses and forbs. Soils are the result of colluvial and alluvial deposition. The Weber River, which begins in the Uinta Mountains, runs through Weber Canyon and empties into the Great Salt Lake.

## CULTURAL CONTEXT

The following sections provide a general context in which to evaluate the resources that have been newly identified in the Project Area. Only those periods where known or suspected cultural resources are present in the Project Area are discussed here.

### Early Exploration and Settlement (A.D. 1776–1870)

The first documented occurrence of non-native peoples to visit northern Utah happened in 1776, when an expedition led by Spanish friars Francisco Atanasio Dominguez and Silvestre Velez de Escalante entered the Utah Valley (May 1987:24). The Spanish expedition never made it as far north as the Salt Lake Valley, and no permanent Spanish presence was established along the Wasatch Front as a result of their explorations (Sillitoe 1996:17). Other Euro-American explorers soon followed the Spaniards, and by the 1820s trappers Louis Vasquez, Etienne Provost, and Jim Bridger had all been separately credited with “discovering” the Great Salt Lake (Sillitoe 1996:17). Famed fur trader Jedediah Strong Smith was also reported to have explored the northern portion of the Salt Lake Valley in 1826 and 1827 on behalf of the Smith, Jackson, and Sublette Fur Company (DeLafosse 1998; May 1987:35–36).

In the following decades, trappers and traders frequented the streams and lakes of the area in search of beaver and other fur-bearing mammals. Numerous trading posts and rendezvous locales were soon established across the entire Great Basin where pelts could be traded or sold for money or goods. Many Native Americans in the region benefited from the fur trade, trading pelts and other goods for weapons, iron utensils, and other items of use; however, in the process of interacting with Euro-American trappers, many Native Americans were also exposed to new diseases for which they had no immunity and which reduced their overall health and ultimately their population (Alexander 1996:65; Sillitoe 1996:18). The availability of liquor also introduced alcoholism, a Euro-American vice, to the tribes, thus further undermining native cultures (Alexander 1996:65; Sillitoe 1996:18). Declining beaver populations, shifting fashions, and falling fur prices eventually led to a nation-wide collapse of the fur trade by the early 1840s (Alexander 1996:62; May 1987:37; Sillitoe 1996:18). By 1844, the majority of regional trading posts had been abandoned, effectively ending the fur business in Utah.

In the early 1840s, the federal government took a more concerted interest in the area, sending several surveyors to develop more accurate and comprehensive maps of the western U.S. Among these surveyors was John C. Frémont who, in 1843 and 1845, issued reports on the Salt Lake Valley and Wasatch Mountain Range. Frémont's reports would later serve as a reference for Brigham Young during the Mormon migration westward (Leonard 1999:8; May 1987:52).

In 1841, an immigrant party led by John Bidwell and John Bartleson traveled along the northern boundary of the Great Salt Lake while in search of an alternate route to California (May 1987:50). The

establishment of this route to California through the Great Basin increased the number of travelers through northern Utah. Within a few years, five wagon-parties had followed the alternate route through what would later become Davis County. Among these groups was the ill-fated Donner-Reed party who passed through the area in 1846. The Donner-Reed party deviated from the well-known immigrant route through Weber Canyon, opting instead to travel a route proposed by Lansford Hastings through Emigration Canyon, the route that would be followed later by the Mormon pioneers (Carlstrom and Furse 2003:23–26; Leonard 1999:2).

## **Railroads**

Following the passage of the Pacific Railway Act of 1862, Union Pacific was organized on October 29, 1863. The railroad officially arrived in Utah by way of Echo Summit the last week of December in 1868. Construction was completed to the mouth of Weber Canyon by February 28, 1869. The first Union Pacific train arrived in Ogden on March 8, 1869 (Strack 1997). While the Union Pacific line was being constructed, the Central Pacific line originating in Sacramento was moving eastward and was making considerable progress. Both railroad companies were operating with grants under the Pacific Railway Act, and right-of-way was being granted according to how much construction was completed. Central Pacific had design plans for track extending into Weber Canyon. It came to the attention of Congress that both railroad designs were parallel and were very close to overlapping in many places, and the government quickly mandated that a meeting point would have to be established by the two companies or else it would be decided for them. As a result, the meeting at Promontory Point was fixed. On May 9, 1869, an official telegraph was sent stating that the road to Promontory Point was completed. It was also established in the agreement that a permanent junction between the two lines would be located within 8 miles of Ogden (Strack 1997). This junction eventually came to be known as Hot Springs, but as a result of the mediocre response by the public to purchasing lots there a new location was chosen near present-day Harrisville and was named “Junction City.” The first locally generated freight shipped on this line was ore from mining operations in the Wasatch and the Oquirrh Mountains (Strack 1997).

Within a week of the golden spike ceremony held to commemorate the junction of the Union Pacific and Central Pacific lines at Promontory Point, ground-breaking for a railway connecting Ogden with Salt Lake City had begun. Brigham Young began construction of the Utah Central line in late May 1869 when he realized that the Union Pacific and Central Pacific lines were to be routed north of the Great Salt Lake, not through Salt Lake City and south around the Great Salt Lake. Union Pacific provided the equipment and track to construct the line. Young also collected on the debts owed to him by Union Pacific to assist in constructing grades for the line heading to Promontory. The Utah Central line was completed in early January 1870, connecting the largest city between Denver and San Francisco to the trans-continental line and to Ogden.

## **Highways**

Road construction during the early history of Utah was funded by tolls, poll taxes, private funds, and, occasionally, the Territorial Government of Utah. Wagon roads were in demand to help transport goods and people across the state, especially before the completion of the railroad in 1869. It was not until 1909 that the Utah State Road Commission was created to address the issue of state highways (Knowlton 1963:135). “By 1920, the commission had inventoried 1,200 miles of roads” and “almost all roads were constructed or maintained by federal money” (Haymond 2008). With the passage of the Federal Highway Act of 1921, “which provided money to improve seven percent of states' road systems,” Utah began building even more roads (Haymond 2008). A consistent, national method of numbering highways was recommended by the American Association of State Highway Officials to the federal government in 1924, and this method was officially adopted in 1925 (Weingroff 2013). This would lead to Utah's efforts

to get one of their roads officially designated U.S. Highway 30 (U.S. 30). Eventually, the numbering committee decided to split the number into U.S. 30 North (N) and U.S. 30 South (S), with Utah being given the U.S. 30S designation in 1926 (Weingroff 2013). With the creation of the national system of interstate and defense highways in the 1950s, Utah found itself with several interstate highways: 15, 70, 80, and 80N (U.S. Department of Transportation 1976:474). Eventually, I-80N through Weber Canyon would be renumbered I-84 in 1977 to reduce confusion over the I-80 and I-80N designations (Utah Department of Transportation 2008).

## **PREVIOUS RESEARCH**

A search of project, site, and preservation files was conducted using the Utah Division of State History's (UDSH) Preservation Pro on February 23, 2015, and updated on July 16, 2015. In addition, a file search was conducted by the U-W-CNF on July 21, 2015. In all, 20 archaeological projects have been conducted within 1 mile of the Project Area (Table 1). Of the 20 projects, three have been conducted within the Project Area. In the course of the 20 projects, 12 sites were documented with two of these sites (42WB328, the Devil's Gate Weber Hydroelectric Power Plant Historic District and 42MO59 the Union Pacific Railroad) occurring within the immediate Project Area (Table 2). Although the Devil's Gate Plant was formally renamed the Weber Plant in 1917, the National Register of Historic Places (NRHP) registration form retains both names. The Weber Historic District was added to the NRHP in 1989. While several historic canal sites were identified within 1 mile of the Project Area during the file search, none of the canals cross the Project Area. One historic architectural locality (Union Pacific Gateway Bridge Record No. 112955) was identified in the UDSH historic files, but it is not located within the Project Area.

In addition, GLO plat maps and several GIS layers were examined for potential cultural resources. These layers, available from state and federal agencies, include the NRHP properties, Utah historic trails, Utah historic districts, historic topographic maps, and other historic aerial imagery. Two NRHP properties were identified within 1 mile of the Project Area: the previously mentioned Devil's Gate Weber Hydroelectric Power Plant Historic District (42WB328) and Farmington Main Street Historic District. The Farmington Main Street Historic District is not located in the Project Area.

Several potential historic resources were identified within 1 mile of the Project Area on GLO maps (Salamon 1891 T 5N R 1E; Ferron 1871 T 5N R 1E; Ferron 1871 T 5N R 1W): three unnamed roads, two unnamed buildings, two unnamed bridges, a flag station, a section house, a field, and the Union Pacific Railroad. Only two of these resources are located in the Project Area: the Union Pacific Railroad and one of the unnamed roads. This portion of the railroad has not been previously documented but is part of the historic alignment of the Union Pacific Railroad. The unnamed road is historic highway U.S. 30S. In addition, the flag station, the section house, and one of the unnamed bridges are related to the Union Pacific Railroad, but they do not fall within the Project Area.

The previous cultural inventory projects conducted within 1 mile of the Project Area have covered only a small portion of the Project Area (Appendix A). It is unlikely that additional survey within the Project Area would identify new cultural resources due to the heavy disturbances from I-84 and various Union Pacific Railroad and pipeline rights-of-way, as well as the construction of the hydroelectric project. Given the number and extent of these undertakings, it is unlikely that any subsurface deposits containing important information about the prehistory or history of the region remain intact.

**Table 1.** Previous Projects Conducted within 1 Mile of the Project Area

Project Number	Project Title	Consultant
U84SJ0416	2 GrvIProspts/Weber Cyn nr Mt Green Cemetery/UDOT	Sagebrush Archaeological Consultants (Sagebrush)
U84SJ0425	Historical Assessment/W Gateway Hydroelectric Proj	Sagebrush
U87CN0615*	AT&T Fiber Optics Cable Cheyenne-Sacramento	Centennial Archaeology
U88NP0463	El Monte-Weber 46 KV Relocation	A.K. Nielson and Associates
U89BC0057†	–	–
U89BC0578	Stoddard Diversion Dam and Gateway Canal	BYU - Office Of Public Archaeology (BYU-OPA)
U90FS0228*	Weber Power Plant Picnic Area	USFS
U96JB0167	3 Pipeline Segments for Ogden Valley Project	JBR
U04UQ0416	Uintah U	Utah Division of Wildlife Resources (DWR)
U05FS0495	Mountain Green Hazardous Fuels (WS-05-730)	USFS
U06ST1822*	Rocky Mountain Pipeline- Legacy to SLC 16" Exploration	SWCA
U08LI1172	Questar Pipeline Replacement	Logan Simpson Design Inc. (LSD)
U08ST0600	Addendum To CRI Of The RMPS SLC 16" Pipeline	SWCA
U09ST0590	Davis and Weber Canal Improvements	SWCA
U09UQ0582	Lower Weber River Diversion Dam Modernization	UDWR
U11BC1133	DOGM Foothill Mine Inventory	BYU - OPA
U11LI0050	A Class II Cultural Resources Reconnaissance of the Questar Pipeline's ML3 Peterson and Henefer Segments Replacement Project in Morgan and Summit Counties, Utah	LSD
U12LI0642	A Class III Cultural Resources Inventory of Questar Pipeline's ML3 Weber Canyon Segment Replacement Project in Davis and Morgan Counties, Utah	LSD
U12XN0453	Cultural Resources Inventory for the 2012 Davis County Emergency Watershed Protection (EWP) Project Davis County, Utah	Native-X Inc
U13TD0314	Additional Work For Questar's Mainline 3 In Weber County	Tetra Tech

*Note:* The project titles listed in this table are taken directly from Preservation Pro, and have not been edited.

\*Projects conducted in the Project Area.

†Copies of this report are not available from UDSH.

**Table 2.** Previously Documented Cultural Resources within 1 Mile of the Project Area

Site Number	Site Class	Site Type	NRHP Eligibility
42DV120	Historic	Canal (Davis-Weber Canal)	Eligible
42DV121	Historic	Retaining walls	Not eligible
42DV131	Historic	Canal (Davis-Weber Canal)	Eligible
42DV143	Historic	Canal (South Weber Irrigation Canal)	Eligible
42MO5	Prehistoric	Open campsite	Undetermined

**Table 2.** Previously Documented Cultural Resources within 1 Mile of the Project Area

Site Number	Site Class	Site Type	NRHP Eligibility
42MO7	Prehistoric	Lithic scatter	Undetermined
42MO16*	—	—	—
42MO59†	Historic	Railroad (Union Pacific Railroad)	Eligible
42MO68	Historic	Historic hard rock mine (Strawberry Mine)	Not eligible
42WB142	Prehistoric	Open campsite	Undetermined
42WB328†	Historic	Devil's Gate/Weber Hydroelectric Power Plant Historic District	NRHP-listed
42WB465	Historic	Canal (Uintah Central Canal)	Eligible

\*Copies of these site forms are not available from UDSH.

† Sites located in the Project Area.

## METHODS

Prior to conducting field surveys, SWCA obtained a permit and notice to proceed for archaeological investigations on U-W-CNF land from the U-W-CNF Heritage archaeologist. SWCA executed an intensive pedestrian survey using parallel transects spaced 15 meters (m) (50 feet) apart across the Project Area to identify any cultural resources. The archaeologist visually inspected the ground on each side to an approximate distance of 7.5 m (25 feet). The survey line was abandoned only when necessary to evaluate a particular feature or area. After inspection of such a feature or area, the survey line was resumed. Data gathered during the file search were loaded onto the global positioning system (GPS) units and plotted on field maps carried by the crew, which enabled known archaeological sites or potential cultural resources such as GLO features to be located while surveying.

Portions of the Project Area were not intensively surveyed but were visually inspected for cultural resources from the closest safe distance (i.e., reconnaissance-level survey) due to safety reasons and/or lack of access (Appendix B). These areas included the fenced-off portions of the Weber River banks and a small area of slope exclusion at the western extent of the Project Area. Areas not surveyed include the I-84 pavement. These areas are noted on the survey results map in Appendix B. This reconnaissance-level survey consisted of careful visual investigation from the nearest accessible point to identify features that are common with steep terrain and exposed river cut-banks (e.g., mining features, granaries, and rock art) or along river banks (e.g., artifact deposits). See Appendix B for the Class III results map showing areas of intensive survey versus reconnaissance survey.

The field crew used a Trimble GeoExplorer XT GPS unit with the SWCA-created data dictionary to collect Project Area data and to map and document encountered cultural resources while surveying. Trimble's Pathfinder Office software was used to process the GPS data in the office. The GPS data were differentially corrected and exported in Esri's ArcView shapefile format using the Universal Transverse Mercator (UTM) Zone 12 North, North American Datum (NAD) 83 datum coordinate system. A Project-specific geodatabase was generated in Esri's ArcGIS 10.3. The shapefiles were loaded into the Project-specific geodatabase and cleaned, and the attribute table of the cultural resources database was then populated with the appropriate values. All maps for this report were generated using ArcGIS 10.3.



When cultural resources were identified during the survey, SWCA archaeologists applied the Bureau of Land Management guidelines to determine if the resources constituted a site or isolate. All resources were documented to the standards of the Utah SHPO and USFS on Intermountain Antiquities Computer System (IMACS) forms. Site and isolated occurrence (IO) definitions given by Bureau of Land Management guidelines were followed throughout the survey (Bureau of Land Management 2002:6). In general, a site is defined as a location of purposeful prehistoric or historic human activity. An activity is considered to have been purposeful if it resulted in a deposit of cultural materials beyond the level of one or a few artifacts. BLM definitions are as follows:

Sites should contain remains of past human activity that are at least 50 years old and should consist of one or more of the following:

1. At least 10 artifacts of a single class (e.g., 10 sherds) within a 10-m diameter, except when all pieces appear to originate from a single source (e.g., one ceramic pot, one glass bottle).
2. At least 15 artifacts that include at least two classes of artifact types (e.g., sherds, nail, glass) within a 10-m-diameter area.
3. One or more archaeological features in temporal association with any number of artifacts.
4. Two or more temporally associated archaeological features without artifacts.

All linear cultural resources were documented as per the Utah Professional Archaeological Council linear sites guidelines (Utah Professional Archaeological Council 2008). Sites were delineated based on Project Area and land ownership boundaries. If a site extended into an area that was not accessible, this was clearly indicated on the site record. In addition, SWCA revisited all previously documented sites in the Project Area and documented them on an IMACS form. SWCA documented digital datums and did not place physical datums for this project.

Site recording included a written description of a site's general location and setting, as well as a description of the observed artifacts and features. Recording also included creating a site sketch map; photographing the site, features, and artifacts; and mapping the site boundaries, datum, features, and diagnostic artifacts by GPS. All photographs were taken using a high-resolution digital camera. Sites were documented on a combination of IMACS paper forms and tablet computers. All data from the tablet computers were collected in an application that incorporates all of the information required on the IMACS forms. Tablet data were uploaded to SWCA's in-house IMACS generator when the survey was complete. The IMACS forms for all recorded sites are presented in Appendix C. No artifacts were collected during this inventory.

## **INVENTORY RESULTS AND EVALUATIONS**

The intensive- and reconnaissance-level inventory was conducted by an SWCA archaeologist on October 5, 2015. SWCA documented a new segment of the previously recorded Union Pacific Railroad 42DV184/42WB344/42MO59 and one newly recorded site, a previously unrecorded segment of U.S. 30S (42MO75/42WB523). The original documentation of the Devil's Gate Weber Hydroelectric Power Plant Historic District (42WB328), prepared for the previous license, was reviewed by the SHPO and found to be adequate; therefore, no updated documentation was needed (email correspondence between Lindsey Kester, SWCA, and Chris Hansen, SHPO, on July 2, 2015). Complete IMACS site forms are provided in Appendix C.



## **42DV184/42WB344/42MO59, Union Pacific Railroad**

**Site Type/Function:** Railroad

**Period:** Historic

**Eligibility:** Eligible

SWCA recorded a new segment of the Union Pacific Railroad along the Weber River in Weber Canyon. The new segment is located in Davis, Weber, and Morgan Counties (42DV184/42WB344/42MO59) and measures 2,380 m (7,808 feet). Other segments of the Union Pacific Railroad site have been previously documented in multiple Utah counties: Davis (42DV87 and 42DV184), Grant (42GR3429), Iron (42IN1751 and 42IN2731), Juab (42JB1041), Millard (42MD1581 and 42MD1792), Morgan (42MO59 and 42MO60), Sanpete (42SA183 and 42SA550), Salt Lake (42SL300 and 42SL344), Summit (42SM452), Tooele (42TO1298), Utah (42UT1029), Wasatch (42WA75 and 42WA291), Box Elder (42BO822), and Beaver (42BE2012 and 42BE2013).

The construction of the railroad was of vital importance to the development of the western United States. The Union Pacific Railroad became the first transcontinental railroad in 1869 when the eastern and western tracks met in Promontory Point, Utah (Ambrose 2000). The Weber Canyon section was first built in 1868, and the second line was placed in 1916 (Strack 1997). The railroad has experienced modifications and upgrades since that time and is still in use.

The newly recorded segment of the Union Pacific Railroad consists of two active railroad tracks and an upgraded modern bridge. One of the bridge supports is stamped with "1916," the date of the second line construction, and, although this alignment appears historic, it has been subjected to modern modifications including standard-gauge tracks, modern ties, and modern utility facilities (Figure 2). The grade is non-native crushed rock fill, and no artifacts or additional historic features were associated with this newly recorded segment.



**Figure 2.** The Union Pacific Railroad and modern modifications, view facing northwest.

## ***NRHP Recommendation***

In 2015, SWCA recorded a new segment of the Union Pacific Railroad (42DV184/42WB344/42MO59) in Weber Canyon that retains historic integrity of location, setting, context, and association. However, because of modern modifications and surrounding developments, the integrity of workmanship, feeling, and material have been compromised. Overall, the Union Pacific Railroad is recommended eligible for the NRHP under Criteria A and C because of its importance in the role of transportation during the early 1900s, and because of specific railroad features that are considered examples of early railroad construction style (Corbeil 2008).

The site, as a whole, is associated with “a specific event marking an important moment in American prehistory or history and a pattern of events or a historical trend that made a significant contribution to the development of a community, a State, or the nation” (National Park Service 1997:12) and, therefore, has been recommended eligible for the NRHP under Criterion A. The newly documented segment retains those criteria and is recommended as a contributing segment to the site’s overall eligibility under Criterion A.

Many individuals contributed to the construction of the Union Pacific Railroad. Although Brigham Young is often credited as being instrumental to the construction of the railway through Weber Canyon, this segment of the railroad cannot be positively associated with any specific “individuals whose activities are demonstrably important within a local, State, or national historic context” (National Park Service 1997:14). Because the newly recorded segment does not add additional information under this criterion, SWCA concurs with previous recommendations and recommends that the site is not eligible for the NRHP under Criterion B.

Other segments of the Union Pacific Railroad have contributing historic features that are indicative of early railroad construction, but the newly recorded segment has undergone rather extensive modern

construction and upkeep and does not include any of these features. Moreover, this segment does not show distinctive architectural or engineering characteristics, patterns, types, or styles, nor does it “embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; or represent a significant and distinguishable entity whose components may lack individual distinction” (National Park Service 1997:21). Therefore, this segment of the Union Pacific Railroad is considered a noncontributing portion of the site’s overall eligibility under Criterion C, and is recommended as not eligible under this criterion.

The Union Pacific Railroad is still active and has had many modern modifications. The railroad grade is composed of non-native gravels on the ground surface. Although excavation must have occurred to build the bridge supports, there is little (if any) potential for subsurface cultural features or artifacts because of the general methods used in railroad construction (i.e., placing crushed gravel on the ground surface and laying down steel ties). Because of these reasons, the Union Pacific Railroad as a whole has been recommended as not eligible for the NRHP under Criterion D. No historic artifacts or additional features were observed in the newly recorded segment, and, as with the overall Union Pacific Railroad site, it is unlikely to “have, or have had, information to contribute to our understanding of human history or prehistory” that is “considered important” (National Park Service 1997:21). Consequentially, SWCA concurs with previous recommendations and recommends that the Union Pacific Railroad be considered not eligible under Criterion D.

In summary, SWCA recommends that the newly recorded segment contributes to the Union Pacific Railroad’s eligibility for the NRHP under Criterion A.

## **42MO75/42WB523, Historic U.S. 30S**

**Site Type/Function:** Historic feature

**Period:** Historic

**Eligibility:** Eligible

In October 2015, SWCA recorded a segment of the U.S. 30S alignment in Weber Canyon. The road segments follow the northern bank of the Weber River and the Union Pacific Railroad through the bottom of Weber Canyon. Surrounding sediments consist of light brown gray loam with some gravels. Vegetation consists of various riparian grasses and forbs growing up through the remaining asphalt road. The depositional context consists of primarily colluvium with some alluvial deposits.

The segment of U.S. 30S is approximately 13 feet wide with an asphalt and dirt surface. Approximately 650 feet of the east end of the segment is dirt, and the portion from the edge of I-84 to the start of a major oxbow in the western portion of the segment (Figure 3) is also dirt. The portion along the oxbow has an asphalt surface and concrete retaining walls (Figure 4) on the river side. The retaining walls were built with two different construction methods, but the walls extend only 5–12 inches above the roadbed. One section was built using formed concrete and has a footer along the bottom portion where the wall meets a layer of riprap. The other section is built of mortared rock using shaped stones and a formed concrete cap. The formed concrete portion is in poor condition, and the rock wall is in fair to good condition. The roadbed is approximately 3 inches thick and is visible in areas where the roadbed is damaged. Overall, the road is in poor condition, and although it is suspected that the road continued east and west along Weber Canyon, no evidence of the historic alignment was observed.





**Figure 3.** View of U.S. 30S from its eastern end toward the oxbow, facing west.



**Figure 4.** Retainer walls of U.S. 30S along the Weber River, view facing east.

The old road alignment ran between Granger, Wyoming, and Burley, Idaho, via Ogden, Utah (U.S. Geological Survey 1956 [1955]; Weingroff 2013; Workers of the Writers' Program of the Works Projects Administration for the State of Utah 1941:353–354). The road was likely constructed over the original paths used by settlers and pioneers who traveled through Weber Canyon, and was used between 1926 and 1972 (Droz 2010; Weingroff 2013). It was designated I-80N as part of the development of the interstate

system (Droz 2008, 2010) and was re-designated I-84 in 1977 by the Utah Department of Transportation, and conditionally approved by the American Association of State Highway and Transportation Officials (Utah Department of Transportation 2008).

The road has also been affected by the construction and subsequent updates to the Union Pacific Railroad and the construction of I-80N/I-84. The portion of the road within the FERC Project Area is located partially within the historic district and partially within the Utah Department of Transportation right-of-way, where it has been disturbed by road construction activities and the installation of a buried pipeline through the area. The current Project will not adversely affect the site.

## **NRHP Recommendation**

Site 42MO75/42WB523 is a newly recorded segment of historic U.S. 30S and represents a portion of one of the early federal aid roads in Utah. It is associated with the beginnings of what would become the national system of interstate and defense highways. The system allowed improved travel between states and provided maintained routes for commercial interstate commerce. U.S. 30S was considered an important road to the state of Utah when it was numbered in 1926, and, therefore, the site can be positively associated with “a specific event marking an important moment in American prehistory or history and a pattern of events or a historic trend that made a significant contribution to the development of a community, a State, or the nation” (National Park Service 1997:12). Therefore, 42MO75/42WB523 is recommended eligible for the NRHP under Criterion A.

Site 42MO75/42WB523 cannot be associated with “individuals whose activities are demonstrably important within a local, State, or national historic context” (National Park Service 1997:14). Therefore, 42MO75/42WB523 is recommended not eligible for the NRHP under Criterion B.

Although different retaining wall construction styles were observed at the site, they do not demonstrate distinctive architectural or engineering characteristics, patterns, types, or styles. Moreover, the site does not “embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; or represent a significant and distinguishable entity whose components may lack individual distinction” (National Park Service 1997:17). Therefore, 42MO75/42WB523 is recommended not eligible for the NRHP under Criterion C.

Given that 42MO75/42WB523 is a road, it is a surface manifestation that lacks deposition and the potential to provide any subsurface deposits. Also, since the road has been upgraded several times to accommodate improvements, construction has disturbed any subsurface deposits in the area surrounding it. Finally, no artifacts were observed in association with the road. Site 42MO75/42WB523 is not likely to “have, or have had, information to contribute to our understanding of human history or prehistory” that is “considered important” (National Park Service 1997:21). Therefore, 42MO75/42WB523 is recommended not eligible for the NRHP under Criterion D.

In summary, 42MO75/42WB523 is recommended eligible for the NRHP under Criterion A.

## **MANAGEMENT SUMMARY**

In July 2015, PacifiCorp requested SWCA to conduct a formal cultural resource inventory of the Project Area to verify the results of the 2015 desktop-level assessment (PacifiCorp 2015) and fulfill the cultural resources study plan (PacifiCorp 2016). In all, SWCA inventoried a total of 59.97 acres (24.27 ha). Of these, 17.05 acres (6.88 ha) were intensively surveyed, 34.45 acres (13.94 ha) were surveyed at a reconnaissance level, and 8.46 acres (3.4 ha) were not surveyed because they are existing paved roads. Of

the 59.97 acres (24.27 ha), 29.93 (12.11 ha) are on privately owned lands and 30.04 acres (12.16 ha) are on USFS-administrated lands. The Project Area is located in Sections 28–30, Township 5 North, Range 1 East on U-W-CNF managed-land and private land in Weber, Morgan, and Davis Counties in Utah.

SWCA documented a previously unrecorded segment of U.S. 30S (42MO75/42WB523) and a new segment of the Union Pacific Railroad (42DV184/42WB344/42MO59) during the inventory. Chris Hansen, the Deputy Utah SHPO Officer, reviewed the original documentation of the Devil's Gate Weber Hydroelectric Power Plant Historic District (42WB328) that was prepared for the previous license and found it to be adequate, with no updated documentation needed (email correspondence between Lindsey Kester, SWCA, and Chris Hansen, SHPO, on July 2, 2015). Therefore SWCA did not update the existing site record for this inventory.

SWCA recommends 42DV184/42WB344/42MO59 and 42MO75/42WB523 eligible for the NRHP under Criterion A. The previously documented historic district (42WB328) was added to the NRHP in 1989. Site 42DV184/42WB344/42MO59 is also located in the Project Area, but only a small portion of the railroad—the location where the Project pipeline was bored under the active railroad—is intersected by the FERC Project Boundary. The pipeline is associated with the Weber Hydroelectric Plant and crosses the railroad near the eastern end of the Project Area. Based on aerial imagery from Google Earth, the pipe appears to have been bored under the active Union Pacific Railroad line; PacifiCorp records also indicate this. Because this is a previous disturbance that does not impact the site, no further impacts are anticipated by the actions of the Project. Site 42MO75/42WB523 is located in the Project Area, but the portions that intersect with the FERC Project Boundary have been heavily impacted by modern roads and utility and railroad construction, and they do not retain integrity to contribute to the overall eligibility of the site. Therefore, potential Project effects will not further impact the site.

With the exception of potential fish passage facilities, there are no proposed changes to the existing Project facilities or infrastructure that could adversely affect these sites. Any impacts from fish passage construction or continued operation of the Project would occur within the FERC Project Boundary. PacifiCorp prepared and implemented a cultural resource management (PacifiCorp 1991) plan as part of their 1990 FERC license to address potential from the Project. Chris Hansen, the Deputy Utah SHPO Officer, reviewed the plan and found it to be adequate for continued use and consultation with SHPO (email correspondence between Lindsey Kester, SWCA, and Chris Hansen, SHPO, on July 2, 2015). PacifiCorp will follow the standards and procedures outlined in the plan (and modify the document as necessary) in coordination with SHPO for proposed fish passage construction, continued operation and maintenance, and any new proposed construction. No significant impacts to cultural resources are expected from this re-licensing effort. Therefore, SWCA recommends **no historic properties affected** for this project.



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