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**Utah Lake Drainage Basin  
Water Delivery System  
Bonneville Unit, Central Utah Project  
Final Environmental Impact Statement**

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**Cultural Resources  
Technical Report**

September 2004



UTAH RECLAMATION  
MITIGATION  
AND CONSERVATION  
COMMISSION



**Utah Lake Drainage Basin Water Delivery System  
Environmental Impact Statement**

**Cultural Resources Technical Report**

**September 2004**

**Prepared by:  
Central Utah Water Conservancy District**

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# Cultural Resources Technical Report

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# Chapter 1 Introduction

## 1.1 Purpose and Organization

The purpose of the technical report is to analyze impacts on the cultural resources for the proposed Utah Lake Project (ULS). The analysis is in compliance with the following federal legislation: the Antiquities Act of 1906 (P.L. 59-209; 34 Stat. 225; 16 U.S.C. 431-433); the Historic Sites Act of 1935 (P.L. 74-292; 49 Stat. 666; 16 U.S.C. 461-467); the National Historic Preservation Act of 1966 (NHPA)(P.L. 89-665; 80 Stat. 915; 16 U.S.C. 470 as amended by P.L. 90-243, P.L. 93-54, P.L. 94-422, and P.L. 94-458); the National Environmental Policy Act of 1969 (NEPA)(P.L. 91-190; 83 Stat. 852; 42 U.S.C. 4321 et seq.); Executive Order 11593 of 1971; the Archaeological and Historical Conservation Act of 1974 (P.L. 86-523, as amended by P.L. 93-291; 16 U.S.C. 469-469c); American Indian Religious Freedom Act of 1978 (AIRFA) (P.L. 95-341); Native American Graves and Repatriation Act of 1990 (NAGPRA) (P.L. 101-601); Archaeological Resources Protection Act of 1979 (16 U.S.C. 470); National Register of Historic Places (NRHP), National Register Bulletins; and other pertinent legislation and implementing regulations. Utah state legislation to be complied with consists of the Antiquities Protection Act of 1993 (U.C.A. Sec. 9-8-101-806).

This technical report presents the issues and concerns, defines the impact area of influence and significance criteria, describes the analysis methodology, reviews existing data, and provides an analysis of impacts as well as a description of the affected historic properties, which will be summarized in the cultural resources section of the EIS. There are four appendices for this technical report including the following: Appendix A – UHCS (Utah Historic Computer System) Reconnaissance Level Survey Forms; Appendix B – UHCS Reconnaissance Level Photographs; Appendix C – UHCS Reconnaissance Level Maps; Appendix D – IMACS (Intermountain Antiquities Computer System) Forms, Maps and Photographs. Appendix D contains privileged information, which is protected by law and many not be distributed to the public or individuals that are not directly involved in the NEPA (National Environmental Policy Act) and/or the NHPA (National Historic Preservation Act) process. Appendix D should not be reproduced without the express permission of the managing Federal or State Agency.

## 1.2 Description of Proposed Action and Other Alternatives

This section serves as an overview of the ULS alternatives for this technical report.

### 1.2.1 Spanish Fork Canyon–Provo Reservoir Canal Alternative (Proposed Action)

Table 1-1 presents the Proposed Action features. This alternative has an average transbasin diversion of 101,900 acre-feet, which consists of the following amounts of water: 30,000 acre-feet of municipal and industrial (M&I) secondary water to southern Utah County, 30,000 acre-feet of M&I water to Salt Lake County water treatment plants, 1,590 acre-feet of M&I water already contracted to the southern Utah County cities, and 40,310 acre-feet of M&I water to Utah Lake for exchange to Jordanelle Reservoir. It would involve constructing five new pipelines for the delivery of water: 1) from the mouth of Diamond Fork Canyon to the mouth of Spanish Fork Canyon; 2) from the mouth of Spanish Fork Canyon to Santaquin in southern Utah County; 3) from Santaquin to Mona Reservoir; 4) from the mouth of Spanish Fork Canyon to Hobbles Creek along the Mapleton-Springville Lateral alignment; and 5) from the mouth of Spanish Fork Canyon to the Provo Reservoir Canal and Jordan Valley Aqueduct. Under this alternative, the Department of the Interior (DOI) would acquire 57,073 acre-feet of the Central Utah Water Conservancy District's (District) secondary water rights in Utah Lake as part of the project water supply. Two new hydropower plants and associated transmission lines would be constructed in the Diamond Fork System under this alternative.

**Table 1-1  
 Construction Features of Utah Lake Drainage Basin Water Delivery System Alternatives**

<b>Feature</b>	<b>Spanish Fork Canyon – Provo Reservoir Canal Alternative (Proposed Action)</b>	<b>Bonneville Unit Water Alternative</b>	<b>No Action Alternative</b>
Sixth Water Power Facility and Transmission Line	45 MW generator and 15.5 miles of overhead transmission line upgraded to 138 kV from Sixth Water Power Facility to Highway 6	45 MW generator and 15.5 miles of overhead transmission line upgraded to 138 kV from Sixth Water Power Facility to Highway 6	Not constructed
Upper Diamond Fork Power Facility and Underground Cable	5 MW generator and 1.5 miles of 25 kV underground cable (existing) through Tanner Ridge Tunnel to Sixth Water Transmission Line	5 MW generator and 1.5 miles of 25 kV underground cable (existing) through Tanner Ridge Tunnel to Sixth Water Transmission Line	Not constructed
Spanish Fork Canyon Pipeline	7.0 mile steel pipeline, 84-inches diameter from Spanish Fork Flow Control Structure at mouth of Diamond Fork Creek to Moark Junction	7.0 mile steel pipeline, 72-inches diameter from Spanish Fork Flow Control Structure at mouth of Diamond Fork Creek to Moark Junction	Not constructed
Spanish Fork-Santaquin Pipeline	17.5 mile steel pipeline, ranging from 60- to 36-inches diameter, from terminus of Spanish Fork Canyon Pipeline to Santaquin	17.5 mile steel pipeline, ranging from 48- to 36-inches diameter, from terminus of Spanish Fork Canyon Pipeline to Santaquin (CUPCA Section 207 feature)	Not constructed
Santaquin-Mona Reservoir Pipeline	7.7 mile steel pipeline, 24- to 30-inches diameter, from terminus of Spanish Fork-Santaquin Pipeline to Mona Reservoir	Not constructed	Not constructed
Mapleton-Springville Lateral Pipeline (CUPCA Section 207)	5.7 mile steel pipeline, 48-inches diameter from terminus of Spanish Fork Canyon Pipeline to Hobble Creek	5.7 mile steel pipeline, 48-inches diameter, from terminus of Spanish Fork Canyon Pipeline to Hobble Creek	Not constructed
Spanish Fork – Provo Reservoir Canal Pipeline	19.7 mile steel pipeline, ranging from 60- to 48 inches diameter, from terminus of Spanish Fork Canyon Pipeline to Provo Reservoir Canal and Jordan Valley Aqueduct	Not constructed	Not constructed

The following summarizes the Proposed Action operation.

- 30,000 acre-feet of ULS M&I water would be conveyed through the Spanish Fork – Provo Reservoir Canal Pipeline to the Provo Reservoir Canal (or enclosure) and the Jordan Aqueduct to Salt Lake County water treatment plants as a culinary supply.
- An annual average of 16,273 acre-feet of Bonneville Unit water from Strawberry Reservoir would be released for in-stream flows in Sixth Water Creek and Diamond Fork Creek and flow down the Spanish Fork River to Utah Lake mainly during the winter months, as previously described in the 1990 Diamond Fork System Final Supplement to the Final Environmental Impact Statement (Reclamation 1990). This water is included in the annual average of 40,310 acre-feet that would be exchanged from Utah Lake to Jordanelle Reservoir.
- As the ULS facilities are completed, but not later than 2030, 30,000 acre-feet of ULS M&I water would be delivered through the Spanish Fork–Santaquin Pipeline and the Mapleton-Springville Lateral Pipeline in southern Utah County under a contract with SUVMWA. Of this amount, an estimated 3,000 acre-feet would be conserved under Section 207 projects, assigned to DOI, conveyed through the Mapleton–Springville Lateral Pipeline, and is included in the 12,037 acre-feet delivered to Hobbie Creek for June sucker spawning and rearing flows and other in-stream flows as provided by deliveries from Strawberry Reservoir to Utah Lake. This 12,037 acre-feet of water would then be exchanged from Utah Lake to Jordanelle Reservoir.
- Up to 10,200 acre-feet of SVP water shares acquired by SUVMWA cities would be conveyed to these cities in southern Utah County through the new ULS pipelines on a space-available basis. This water is part of the overall 61,000 acre-feet of SVP water stored in Strawberry Reservoir. An additional 8,831 acre-feet of SVP water would be delivered to the Mapleton and Springville irrigation companies through the Mapleton-Springville Lateral Pipeline. The balance of the SVP water supply would be released through the Strawberry Tunnel and Syar Tunnel to the Diamond Fork System and released to the Spanish Fork River.
- Of the 1,590 acre-feet of M&I water already under contract to SUVMWA, 590 acre-feet would be used by SUVMWA member cities as secondary M&I water. This water would be delivered through the Spanish Fork Canyon Pipeline and Spanish Fork–Santaquin Pipeline to the SUVMWA member cities. The remaining 1,000 acre-feet has been assigned to DOI and is part of the 12,037 acre-feet released to Hobbie Creek.
- An annual average of 16,000 acre-feet of Bonneville Unit water would be delivered to the lower Provo River to assist in meeting the in-stream flow objectives and would be subsequently exchanged from Utah Lake to Jordanelle Reservoir. This water would be conveyed through the Spanish Fork–Provo Reservoir Canal Pipeline and discharged to the Provo River at the pipeline crossing when needed to make the Utah Lake–Jordanelle Reservoir exchange and when flows in the Provo River are less than 75 cfs. A minimum 75 cfs flow normally occurs in the river between the Olmsted and Murdock diversions during the summer months when releases are made from Deer Creek Reservoir for conveyance through the Provo Reservoir Canal.
- As allowed under the Deer Creek Reservoir-Jordanelle Reservoir Operating Agreement, an annual 12,165 acre-feet of water would be provided as flows for June sucker spawning and rearing in the lower Provo River to meet June Sucker Recovery Implementation Program (JSRIP) goals annually.

- An average annual delivery of 12,037 acre-feet of project water would be available through the Mapleton-Springville Lateral Pipeline to Hobbble Creek for June sucker spawning and rearing flows (April through July) and to provide other fish and wildlife benefits throughout the year. A portion of this water would be included in the 40,310 acre-feet of Utah Lake inflow from Strawberry Reservoir and would be subsequently exchanged from Utah Lake to Jordanelle Reservoir. Of the 12,037 acre-feet, 4,000 acre-feet would be provided in every year because this is the amount of water saved each year through Section 207. An average of 8,037 acre-feet would be provided when water is being delivered from Strawberry Reservoir to Utah Lake for exchange up to Jordanelle Reservoir. Hobbble Creek supplemental water would not be delivered during high runoff years when Utah Lake is above compromise level. The high runoff years correspond with years when natural runoff would be sufficient to attract June sucker spawning.
- Approximately 3,300 acre-feet of lower Provo River water rights purchased by the District for the Mitigation Commission would flow undiverted to Utah Lake, thereby increasing the irrigation season flow in the lower Provo River.
- Hydroelectric power would be generated from the Bonneville Unit and SVP water conveyance and contracted to the Western Area Power Administration (see Table 1-1 for generating capacities).

## 1.2.2 Bonneville Unit Water Alternative

Table 1-1 presents the features of this alternative. This alternative has a total transbasin diversion of 101,900 acre-feet which consists of: 15,800 acre-feet of M&I secondary water to southern Utah County, 1,590 acre-feet of M&I water already contracted to the southern Utah County cities, and 84,510 acre-feet of M&I water to Utah Lake for exchange to Jordanelle Reservoir. It would involve constructing three of the new pipelines for the delivery of water as described for the Proposed Action: 1) from the mouth of Diamond Fork Canyon to the mouth of Spanish Fork Canyon; 2) from the mouth of Spanish Fork Canyon to Santaquin in southern Utah County; and 3) from the mouth of Spanish Fork Canyon to Hobbble Creek along the Mapleton – Springville Lateral alignment. The Spanish Fork Canyon Pipeline would be a federally funded ULS feature; the other two pipelines would be constructed as combined ULS and Section 207 Water Conservation Program features. Under this alternative, two-new hydropower plants and associated transmission lines would be constructed in the Diamond Fork System; the DOI would acquire 15,000 acre-feet of District secondary water rights in Utah Lake as part of the project water supply; and no M&I water would be conveyed to Salt Lake County.

The following summarizes the Bonneville Unit Water Alternative operation:

- As the ULS facilities are completed, 15,800 acre-feet of ULS M&I water would be delivered through the Spanish Fork–Santaquin Pipeline in southern Utah County under a contract with SUVMWA. Of the 15,800 acre-feet, it is anticipated that 3,000 acre-feet would be conserved under 207 projects and returned to DOI for in-stream flows, and would be included in the 23,510 acre-feet conveyed through the Mapleton-Springville Lateral pipeline.
- An annual average of 16,273 acre-feet of Bonneville Unit water from Strawberry Reservoir would be released for in-stream flows in Sixth Water Creek and Diamond Fork Creek and flow down the Spanish Fork River to Utah Lake on a year-round basis. This water would be exchanged from Utah Lake to Jordanelle Reservoir.
- Up to 10,200 acre-feet of SVP water shares acquired by SUVMWA cities would be conveyed to member cities by SUVMUA in southern Utah County through the new ULS pipelines. This water is part of the overall 61,000 acre-feet of SVP water stored in Strawberry Reservoir. The balance of the SVP water would be released through the Strawberry Tunnel and Syar Tunnel to the Diamond Fork System for conveyance to the Spanish Fork River (except for SVP water in the Mapleton-Springville Lateral).

- Of the 1,590 acre-feet already under contract to SUVMWA, 590 acre-feet would be used by SUVMWA member cities as secondary M&I water. This water would be delivered through the ULS pipelines to the SUVMWA member cities. The remaining 1,000 acre-feet has been assigned to DOI and would be part of the 23,510 acre-feet released to Hobbles Creek.
- About 84,510 acre-feet of Bonneville Unit water would be conveyed to Utah Lake primarily from October through April (winter months) when the radial gates are up at the five diversion dams on the Spanish Fork River, thus completing the M&I exchange between Strawberry Reservoir and Jordanelle Reservoir. Of this 84,510 acre-feet, about 65,000 acre-feet would be conveyed to Utah Lake via the Spanish Fork River and 19,510 acre-feet would be conveyed to Utah Lake via Hobbles Creek.
- Under the Deer Creek Reservoir-Jordanelle Reservoir Operating Agreement, an annual 12,165 acre-feet of water would be provided as flows for June sucker spawning and rearing in the lower Provo River to meet JSRIP goals annually.
- An annual average of 23,510 acre-feet of water would be conveyed through the Mapleton-Springville Lateral pipeline to Hobbles Creek for June sucker spawning and rearing flows to meet JSRIP goals and to provide other fish and wildlife benefits throughout the year. This water would be subsequently exchanged from Utah Lake to Jordanelle Reservoir. Of the 23,510 acre-feet, 4,000 acre-feet would be provided in every year that it is needed. About 3,000 acre-feet of this amount is ULS M&I water that would be available for release in the spring and 1,000 acre-feet is conserved Bonneville Unit M&I water that would occur during the summer season. The remaining annual average 19,510 acre-feet only would be brought when water is being delivered from Strawberry Reservoir to Utah Lake for exchange up to Jordanelle Reservoir. Hobbles Creek supplemental water would not be delivered during high runoff years when Utah Lake is above compromise level. The high runoff years correspond with years when natural runoff would be sufficient to attract June sucker spawning. An additional 8,831 acre-feet of SVP water would be delivered through the Mapleton-Springville Lateral Pipeline to the Springville and Mapleton irrigation companies.
- Hydroelectric power would be generated from the M&I water conveyance and contracted to the Western Area Power Administration (see Table 1-1 for generating capacities).

### 1.2.3 No Action Alternative

No new water conveyance features would be constructed under the No Action Alternative. The 86,100 acre-feet of Bonneville Unit M&I water, minus the 1,590 acre-feet of Bonneville Unit water already contracted for by SUVMWA member cities, would be conveyed from Strawberry Reservoir through the existing Diamond Fork System and discharged into the Spanish Fork River at the mouth of Diamond Fork Canyon, as described in the 1999 Diamond Fork FS-FEIS. All of this water would be exchanged from Utah Lake to Jordanelle Reservoir.

The following summarizes the No Action Alternative operation.

- An annual average of 16,273 acre-feet of Bonneville Unit water from Strawberry Reservoir would be released for in-stream flows in Sixth Water Creek and Diamond Fork Creek and flow down the Spanish Fork River to Utah Lake during the non-irrigation season. This water would be exchanged from Utah Lake to Jordanelle Reservoir.
- 590 acre-feet of the total 1,590 acre-feet of existing Bonneville Unit M&I System water already contracted would be used by SUVMWA member cities as M&I water. This water would be made

available to SUVMWA member cities by existing wells and through exchanged to Utah Lake. The remaining 1,000 acre-feet already returned to the DOI under the Spanish Fork City Section 207 project would flow down the Spanish Fork River to Utah Lake.

- 86,100 acre-feet of Bonneville Unit water would be conveyed through the Spanish Fork River to Utah Lake on a year-round basis, thus completing the M&I exchange between Strawberry Reservoir and Jordanelle Reservoir.
- Under the Deer Creek Reservoir/Jordanelle Reservoir Operating Agreement, an annual 12,165 acre-feet of water would be provided as flows for June sucker spawning and rearing in the lower Provo River to meet JSRIP goals annually.
- Approximately 3,300 acre-feet of lower Provo River water rights purchased by the District for the Mitigation Commission would flow undiverted to Utah Lake, thereby increasing the irrigation season flow in the lower Provo River.

## **1.3 Scoping Issues**

### **1.3.1 Issues Raised in Scoping Meetings**

No cultural resource issues were identified during the public or agency scoping process.

### **1.3.2 Scoping Issues Eliminated From Further Consideration**

None.

### **1.3.3 Scoping Issues Addressed in the Technical Report**

Although no issues were identified during the agency and public scoping process, the impact analysis will describe any potential impacts that may occur as a result of construction and operation of the proposed ULS project.

## **1.4 Impact Topics**

- Archaeological sites
- Historical sites
- Traditional Cultural Properties
- Cultural landscapes
- Archaeological districts
- Historical buildings and structures

## **Chapter 2 Methodology**

### **2.1 Introduction and Overall Approach**

There are three generally accepted levels or classes of cultural resource research and inventory. Class I studies involve conducting a file search of existing literature and preparing an overview of an area, which may include predictions of probable site types and densities. Class II inventories, which includes a literature search, are statistically based sample surveys covering only a portion of a particular area. Using the data base generated by the survey, predictions are then made for the entire area for types and densities of sites, as well as the topographic and environmental settings within which they could be found. Class III inventories consist of a literature search and complete survey of a geographic area. These surveys or inventories are designed so that virtually all-cultural resources within that area are identified and recorded.

Research for the ULS project was divided into four phases. Phase 1 involved compilation of background research of known sites and information within the proposed ULS project area in preparation for undertaking fieldwork. Phase 2 consisted of preparing an historic context. These two phases reflected the tasks identified for a Class I study. Phase 3 involved field inspection and recordation of all cultural resources within the project alternatives. Phase 4 involved preparation of this technical report for the project. These latter two phases fulfill the requirements of a Class III survey.

Phase 1 involved obtaining existing information on known sites and previous cultural resource projects within one mile of the ULS impact area of influence, as well as, published sources from the files of a number of agencies and institutions. In addition to this information, it was necessary to consult the NRHP and the county and city historic files and Certified Local Government (CLG) survey information at the Utah State Historic Preservation Office (USHPO).

Phase 2 involved historic research on the proposed ULS project alternatives. Libraries and other data sources that were consulted are listed in Section 2.2. This research consisted of the initial overview document, which outlined the history of the ULS project area, in particular, and provided data to help evaluate previously known and newly recorded historic sites located as a result of the inventories carried out during the Class III survey. Information obtained from documents and individuals was important in establishing eligibility of sites to the NRHP.

Phase 3 included field inspections and recordation of cultural resources within the ULS project area. Despite the fact that there were a number of previous project inventories carried out within several of the project corridors, few of these inventories were deemed adequate for the purposes of the present project, due to the time lapsed since they were completed (surveys that were usually over ten years old) and/or due to the type or method of survey involved. As such, virtually all of the ULS project corridors were inventoried as part of this project. In addition, the sites, which had been recorded within the existing corridors were either revisited and forms updated or were re-recorded, depending upon the adequacy of the site form for the present study.

Field reconnaissance inventory of the project alternatives was divided into two separate surveys:

- 1) a selective reconnaissance level inventory of all historic buildings and structures within the project area;
- 2) a Class III inventory of all prehistoric and historic archaeological sites within the project area.

The selective reconnaissance level inventory of historic buildings and structures involved recordation of all historic properties (including buildings, engineering structures, canals, reservoirs and other above ground

structures) along the project corridors using the Utah State Reconnaissance Level Inventory Form. Only properties dating within the historic period (as could be established) were recorded (1953 or earlier). The level of recordation of these properties was brief, including basic historic and structural information as well as a minimum of one photograph of each site; and enough information to evaluate each site for NRHP eligibility under at least criteria C and D. Previously recorded sites within the project area were revisited and reevaluated for eligibility to the NRHP. While this brief recordation was considered adequate for alternative corridor comparisons, once the final alternative is chosen for the project, an intensive level inventory of all historic buildings and structures on that alternative will be carried out as part of the environmental commitments for this project.

The Class III inventory of all prehistoric and historic archaeological sites involved a pedestrian survey of all alternative corridors including staging areas, new roads, borrow areas, etc. by a qualified archaeologist permitted in the State of Utah, followed by recordation and evaluation of sites identified during the inventory. The inventoried corridors varied, depending upon the design of the features, the nature of the proposed disturbance, and the terrain encountered including a buffer zone (see Section 3.1, Chapter 3, Impact Area of Influence for details). The survey was carried out by pedestrian parallel transects, not exceeding 15 meters apart. Archaeological sites, including both prehistoric and historic archaeological sites, were recorded on Intermountain Antiquities Computer System (IMACS) forms. Each site encountered was described and photographed and evaluated for eligibility for the NRHP. Previously recorded sites within the project area were revisited and reevaluated for eligibility to the NRHP or re-recorded and then reevaluated for eligibility. Site numbers for archaeological sites were obtained from the Antiquities Section, USHPO. For the purposes of this study, only sites, which dated to or before 1953, were recorded and evaluated for eligibility for the NRHP.

Phase 4 involved the preparation of this project report including introduction, setting, methodology, prehistoric, ethnographic and historic contexts, results and recommendations. Detached appendices to this report include completed IMACS and Utah State Reconnaissance Level Inventory Forms for all sites recorded or re-recorded during the inventory.

## 2.2 Data Used

In order to complete the cultural resource data base and the analysis of the cultural resources, it was necessary to collect information about previously conducted cultural resource investigations and known sites within and near the project area. Further, this data was necessary to have a firm background understanding of the prehistory, ethnography and history of the project area. Cultural resource sites identified in the search included archaeological sites, historic sites, historic buildings and structure sites. The search for this material was undertaken in May 2003, which began at the Antiquities Section and the historic records area of the SHPO. Historical background research was also undertaken at the same time to obtain information for preparation of the prehistoric and historic contexts. In addition to consulting with the NRHP, existing information was also obtained on known sites and previous cultural resource projects, as well as from published sources from the files of the following agencies:

- State Historic Library, Salt Lake City
- Uinta National Forest Supervisor's Office, Provo
- Utah Department of Transportation, Region Three, Orem
- Bureau of Reclamation, Provo Project Office
- Bureau of Land Management, Public Room, Salt Lake City (for General Land Office Maps)
- University of Utah, Marriott Library, Salt Lake City
- National Archives, College Park, Maryland

## **2.3 Assumptions**

None.

## **2.4 Impact Analysis Methodology**

### **2.4.1 Description**

The features of each alternative were superimposed onto the baseline project maps, clearly indicating all areas of proposed ground disturbing activities. Each cultural resource site, including archaeological sites and historical buildings and structures, were drawn on the project baseline map. Each property was assessed to determine what characteristics could contribute to the eligibility of the property. These characteristics were then compared to the alternatives, especially in relation to areas of ground disturbing activities and alteration of surrounding topographic features. Potential measures for mitigating impacts on cultural resources were determined following completion of the impact analysis.

Analysis of cumulative impacts involved identifying other planned or proposed projects coincident with the impact area of influence for cultural resources. Impacts from planned or proposed projects affecting cultural resources within the impact area of influence were considered cumulative and identified as such.

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## **Chapter 3**

### **Affected Environment (Baseline Conditions)**

#### **3.1 Impact Area of Influence**

The potential impact of the project on cultural resources varied by alternative because of a variety of factors, including differing pipeline sizes, transmission corridor width requirements, terrain constraints, potential operational options in different areas, and differing agency requirements. As such, methodology, corridor width, and actual acreage surveyed within each alternative are provided separately below. When there are duplications of features within each alternative, reference is made back to the original description.

##### **3.1.1 Spanish Fork-Provo Reservoir Canal Alternative (Proposed Action)**

A cultural resource inventory of this alternative consisted of pedestrian survey of approximately 49.3 miles of pipeline corridor, 14.5 miles transmission and underground cable corridor, and 1.5 acres for power and substation facilities. The pipeline corridor varied from 22 to 200 feet in width while the transmission and buried cable corridor averaged 150 feet in width. The areas were surveyed by archaeologists walking 15 meter transects.

##### **3.1.2 Bonneville Unit Water Alternative**

A cultural resource inventory of this alternative consisted of pedestrian survey of approximately 23.2 miles of pipeline corridor, 14.5 miles transmission and underground cable corridor, and 1.5 acres for power facilities and substations. The pipeline corridor varied from 22 to 200 feet in width while the transmission and buried cable corridor averaged 150 feet in width. The areas were surveyed by archaeologists walking 15 meter transects. The survey for this alternative included those areas that were part of the Spanish Fork Canyon-Provo Reservoir Canal Alternative (Proposed Action).

##### **3.1.3 No Action Alternative**

None.

#### **3.2 File Search Results**

##### **3.2.1 Archaeological File Search**

Archaeologists collected data through file and archival record searches at the Utah State Historic Preservation Office (USHPO), Bureau of Land Management (BLM), Salt Lake City, the Bureau of Reclamation (Reclamation), Provo and the United States Forest Service (USFS), Provo (Table 3-1). Record searches have identified a total of 167 projects involving cultural resource surveys within one mile of the proposed project areas. The agencies for which these surveys were conducted include: Reclamation (47), USFS (36), UDOT (31), BLM (9), UP&L (6), multi-agency (3), telephone companies (6), city or county government (6), CUWCD (5), Water and Power Resources Service (4), Army Corps of Engineers (3), US Park Service (3), Division of Wildlife Resources (2), US Postal Service (1), Utah State Parks (1), BYU Archaeological Field School (1), Department of the Interior (1) and Utah State Trust Lands (1). Thirty-nine of these projects yielded a total of 86 known cultural resource sites within one mile of the proposed project area. Of these sites, 51 are located in Utah County and 35 are located in Wasatch County. Thirteen of the sites located in Utah County were prehistoric of which none were determined eligible for the NRHP. The remaining 38 sites in Utah County were historic. Eighteen of these properties were determined eligible for the NRHP. In Wasatch County, seven sites of the 35 were prehistoric and

only one of these was determined eligible for the NRHP. The other 28 sites were historic. Twelve of these properties were determined eligible for the NRHP.

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

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<b>Year</b>	<b>Agency/Firm or Institution</b>	<b>Description</b>	<b>Cultural Resources</b>	<b>Site Type/ (NRHP Eligibility)</b>	<b>Reference</b>
2002	Baseline, Inc.	Survey of 1 acre for UDOT	None	None	(Seacat 2003)
2002	Baseline, Inc.	Survey of 31 acres for UDOT	42Wa293 42Wa294	Old Extension Canal (E) Lower Canal (E)	(Nielson 2002a, 2002b, 2002c)
2002	Division of Wildlife Resources	Survey of 1 acre	None	None	(Davies 2002)
2002	Earth Touch	Survey of 267 acres for Reclamation and PRWUA	42Ut947	Provo Reservoir Canal (E)	(Billat, L. 2002a)
2002	Earth Touch	Survey of 1 acre for Cingular Communications	42Ut1344	Historic Irrigation Ditch (N)	(Billat S. 2002) (Billat L. 2002b)
2002	Sagebrush Consultants	Survey of 12 acres for Provo City	42Ut1370	Abandoned segment of the Denver and Rio Grande Railroad (N)	(Southworth 2002a, 2002b)
2002	US Forest Service (USFS)	Survey of 22 acres	42Ut1364 42Ut1365	Upper Ironton Lime Kiln (E) Lower Ironton Lime Kiln (E)	(Thompson 2003) (Thompson et al 2002a,b)
2002	USFS	Survey of 57 acres	42Ut1337	A metal pipe (N)	(Taylor 2002a) (Montoya and Taylor 2002)
2001	Baseline, Inc.	Survey of 1 acre for UDOT	None	None	(Gourley 2001)
2001	SWCA	Survey of 20 acres	None	None	(Hutmacher and Fergusson 2001)

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

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<b>Year</b>	<b>Agency/Firm or Institution</b>	<b>Description</b>	<b>Cultural Resources</b>	<b>Site Type/ (NRHP Eligibility)</b>	<b>Reference</b>
2001	USFS	Survey of 78 acres	42Ut1322 42Ut1323	Historic trash scatter (N) Historic trash scatter (N)	(Taylor 2002c) (Taylor and Montoya 2001) (Thompson 2001)
2001	USFS	Survey of 317 acres	None	None	(Ballantyne 2001)
2001	USFS	Survey of 420 acres	None	None	(Ballantyne and Thompson 2001)
2001	USFS	Survey of 42 acres	None	None	(Healy 2001)
2000	Office of Public Arch OPA/BYU	Survey of 12 acres for Qwest Communications	None	None	(Hansen and Richens 2000)
2000	SWCA, Inc.	Survey of 21 acres for USFS	None	None	(Hutmacher 2001)
2000	SWCA, Inc.	Survey of 1700 acres for BLM	42Ut362 (update)	Castilla Warm Springs Resort (E)	(Fergusson 2000)
2000	USFS	Survey of 80 acres	42Ut1113  42Ut1114	Springville/Mapleton Diversion Dam and Ditches (N) Old Hobbie Creek Canyon Rd (N)	(Nelson 2000) (Healy and Nelson 2000a, 2000b)
1999	Alpine	Survey of 779 acres for Reclamation	42Wa250 42Wa251	Historic Ranch and corral (N) Two Levees along Provo River (N)	(Davis 1999) (Eckman 1999, 2000)
1999	Anasazi State Park	Survey of 13 acres	None	None	(Latady 1999)
1999	Anthropology Dept at BYU	Survey of 1520 acres - field school	42Wa254	Historic trash scatter and road (N)	(Janetski 1999a, 1999b)
1999	JBR, Environmental Consultants	Survey of 4.5 acres for UDOT	42Ut1039	Historic Irrigation Ditch (N)	(Billat and Prince- Mahoney 1999) (Billat 1999)
1999	OPA/BYU	Survey for UDOT	None	None	(Talbot 1999)

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

Year	Agency/Firm or Institution	Description	Cultural Resources	Site Type/ (NRHP Eligibility)	Reference
1999	Sagebrush Consultants	Survey of 231 acres for CUWCD	None	None	(Polk and Polk 1999)
1999	Sagebrush Consultants	Survey of 52 acres for CUWCD	42Wa224 42Wa225 42Wa226 42Wa227	Upper Charleston Canal (E) Unnamed Irrigation Ditch (N) Concrete foundation (N) Unnamed Irrigation Ditch (N)	(O'Dell 1999a, 1999b, 1999c, 1999d, 1999e)
1999	USFS	Survey of 20 acres	None	None	(Ballantyne 1999)
1999	USFS	Survey of 85 acres	42Wa223	Historic trash scatter (N)	(Healy 1999a, 1999b)
1999	USFS	Survey of 29,000 acres	Report in Progress	Unknown	(Healy 1999c)
1999	USFS	Survey of 145 acres	None	None	(Healy 1999d)
1999	UDOT	Survey of an alignment along SR-6	42Ut1135	East Bench Canal (U)	(Skinner 1999a)
1999	UDOT	Cultural resource survey of 81 acres	None	None	(Skinner 1999b, 1999c)
1998	Baseline, Inc.	Survey for UDOT	None	None	(Eccles 1998)
1998	JBR	Survey of 1 acre for UDOT	None	None	(Prince-Mahoney 1998a)
1998	JBR	Survey of 7 acres for UDOT	None	None	(Prince-Mahoney 1998b)
1998	OPA/BYU	Survey of 28 acres for USFS and CUWCD	None	None	(Talbot 1998)
1998	Sagebrush Consultants	Survey of 197 acres for CUWCD	42Wa217 42Wa218 42Wa219	Wasatch Canal (E) Timpanogos Canal (E) Humbug Canal (E)	(O'Dell and Hanson 1999) (O'Dell 1999f, 1999g, 1999h)

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

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<b>Year</b>	<b>Agency/Firm or Institution</b>	<b>Description</b>	<b>Cultural Resources</b>	<b>Site Type/ (NRHP Eligibility)</b>	<b>Reference</b>
1998	Sagebrush Consultants	Survey of 640 acres for UDOT	42Wa112a 42Wa229 42Wa89	Heber Valley Railroad Culvert (E) West Bench Ditch (N) Tate Farmstead (E)	(Southworth and O'Dell 1999) (O'Dell 1999i)
1998	USFS	Survey of 105 acres	42Wa215	Lithic scatter(E)	(Thompson 1998) (Healy and Nelson 1998)
1997	Baseline, Inc.	Survey of 23 acres for UDOT	None	None	(Helton and Eccles 1997)
1997	Montgomery	Survey of 142 acres for DOI	None	None	(Montgomery 1997)
1997	OPA/BYU	Survey of 8 acres for Reclamation	None	None	(Larraide 1997)
1996	Baseline, Inc.	Survey of 55 acres for Central Telephone	None	None	(Allison et al 1996)
1996	Baseline, Inc.	Survey of 28 acres for Central Telephone	None	None	(Allison 1996)
1996	Baseline, Inc.	Survey of 6 acres for Reclamation	None	None	(Nielson 1996)
1996	Baseline, Inc.	Survey of 12 acres for UDOT	None	None	(Hughes and Nielson 1996)
1996	Montgomery	Survey of 12 acres for UDOT	None	None	(Montgomery 1996)
1996	USFS	Survey of 3,115 acres	None	None	(Hatch 1996)
1995	Baseline, Inc.	Survey of 4 acres for UDOT	None	None	(Sulz 1995)
1995	Baseline, Inc.	Survey of 117 acres for Central Telephone	None	None	(Nielson et al 1995)

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

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<b>Year</b>	<b>Agency/Firm or Institution</b>	<b>Description</b>	<b>Cultural Resources</b>	<b>Site Type/ (NRHP Eligibility)</b>	<b>Reference</b>
1995	Baseline, Inc.	Survey of 251 acres for Central Telephone	None	None	(Allison et al 1995)
1995	Desert West Research, Inc.	Survey of 4 acres for Corps of Engineers	None	None	(Carambelas 1995a)
1995	Desert West Research, Inc.	Survey of 21 acres for Corps of Engineers	None	None	(Carambelas 1995b)
1995	OPA/BYU	Survey of 4 acres for CUWCD	None	None	(Talbot 1995)
1995	OPA/BYU	Evaluation of the Highline Canal and 4 SFN Laterals	42Ut471 42Ut473	Mapleton-Springville Canal (E) High Line Canal (E)	(Irvine 1995)
1994	ARCON	Survey of 82 acres for UDOT	42Wa174 42Wa173	Historic trash dump (N) Lithic scatter/Historic trash scatter (N)	(Norman 1994a, 1994b, 1994c)
1994	Baseline, Inc.	Survey of 43 acres for UDOT	None	None	(Nielson 1994)
1994	Desert West Research, Inc.	Survey of 7 acres for UDOT	None	None	(Carambelas 1994a)
1994	Desert West Research, Inc.	Survey of 4 acres for Coups of Engineers	None	None	(Carambelas 1994b)
1994	Sagebrush Consultants	Survey of 3.5 acres for UDOT	None	None	(Langley, Murray, and Weymouth 1996a)
1994	Sagebrush Consultants	Survey of 7.5 acres for UDOT	None	None	(Langley, Murray, and Weymouth 1996b)
1994	Sagebrush Consultants	Survey of 9 acres for UDOT	None	None	(Langley, Murray, and Weymouth 1996c)

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

**Page 6 of 13**

<b>Year</b>	<b>Agency/Firm or Institution</b>	<b>Description</b>	<b>Cultural Resources</b>	<b>Site Type/ (NRHP Eligibility)</b>	<b>Reference</b>
1994	Sagebrush Consultants	Survey of 123 acres for Reclamation	42Wa175	Historic milk barn (N)	(Weymouth, Polk and Murray 1995)
1993	Nielson Consulting Group (NCG)	Survey of 560 acres for Utah State School Trust Lands	42Ut918	Prehistoric lithic scatter (N)	(Nielson 1993a, 1993b)
1993	NCG	Survey of 75 acres for Provo City	None	None	(Janetski 1993)
1993	OPA/BYU	Survey of 66 acres for UDOT	42Ut884 42Ut883 42Ut889	2 So Pacific Railway segments (N) 1937 Residence (N) Historic trash scatter (N)	(Baker 1993a) (Baker 1992a, 1992b, 1993b)
1993	Sagebrush Consultants	Survey of 299 acres for UDOT	None	None	(Weymouth 1994)
1993	USFS	Survey of 45 acres	None	None	(Schuster 1993a)
1993	USFS	Survey of 20 acres	None	None	(Schuster 1993b)
1992	NCG	Survey of 2 acres for Orem City	None	None	(Nielson 1992)
1992	USFS	Survey of 560 acres	None	None	(Crosland 1992a)
1992	USFS	Survey of 9 acres	None	None	(Crosland 1992b)
1992	USFS	Survey of 189 acres	None	None	(Thompson 1992)
1991	NCG	Survey of 6 acres for Nephi City	None	None	(Nielson 1991)
1991	NCG	Survey of 17 acres for Nephi City	None	None	(Welsh and Nielson 1991)
1991	USFS	Survey of 75 acres	None	None	(Thompson 1991a)
1991	USFS	Survey of 60 acres	None	None	(Thompson 1991b)

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

<b>Year</b>	<b>Agency/Firm or Institution</b>	<b>Description</b>	<b>Cultural Resources</b>	<b>Site Type/ (NRHP Eligibility)</b>	<b>Reference</b>
1990	BLM	Survey of 290 acres	42Ut723-26	4 Lithic scatters	(Christensen 1990a, 1990b, 1990c) (Consola 1990)
1990	USFS	Survey of 3 acres	42Wa139	Historic hamlet (N)	(Thompson 1990a, 1990b)
1990	USFS	Survey of 66 acres	42Wa141	Historic cabin (N)	(Thompson 1990c, 1990d)
1990	USFS	Survey of 5 acres	None	None	(Thompson 1990e)
1990	USFS	Survey of 2 acres	None	None	(Thompson 1990f)
1990	USFS	Survey of 4 acres	None	None	(Thompson 1990g)
1990	USFS	Survey of 25 acres	None	None	(Thompson 1990h)
1990	USFS	Survey of 3 acres	None	None	(Thompson 1990i)
1990	USFS	Survey of 28 acres	None	None	(Thompson 1990j)
1989	Bureau of Reclamation (Reclamation)	Survey of 1 acre	None	None	(Wiens 1989)
1989	OPA/BYU	Survey for Reclamation	42Ut649 42Ut650 42Ut648	First Water Cabin (U) Lithic scatter (N) Lithic scatter (N)	(Richens 1989a, 1989b, 1989c, 1989d)
1989	OPA/BYU	Survey of 1 acre for Utah County	None	None	(Janetski 1990)
1989	OPA/BYU	Survey of 60 acres for UDOT	None	None	(Southworth 1989)
1989	USFS	Survey of 1 acre	42Wa132	Clegg Wax Mine(E)	(Loosle 1989a, 1989b)
1989	USFS	Survey of 2 acres	42Ut655 42Ut656	Historic trash scatter (N) Historic trash scatter (N)	(Loosle 1989c, 1989d, 1989e)
1989	USFS	Survey of 4 acres	None	None	(Loosle 1989f)

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

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Year	Agency/Firm or Institution	Description	Cultural Resources	Site Type/ (NRHP Eligibility)	Reference
1988	OPA/BYU	Survey of 4 acres for Reclamation	None	None	(Talbot 1988a)
1988	OPA/BYU	Survey of 12 acres for Reclamation	None	None	(Talbot 1988b)
1987	CRMS/BYU	Survey of 6 acres for UDOT	None	None	(Nielson 1987a)
1987	CRMS/BYU	Survey of 40 acres for UDOT	None	None	(Nielson 1987b)
1987	OPA/BYU	Survey of 3 acres for US Postal Service	42Ut588 42Ut589	Historic residence (N) Historic school (N)	(Southworth 1987a, 1987b, 1987c)
1986	Reclamation	Survey of 95 acres	None	None	(Wiens 1986a)
1986	Reclamation	Survey of 12 acres	None	None	(Wiens 1986b)
1986	Reclamation	Survey of 28 acres	None	None	(Wiens 1986c)
1986	Reclamation	Survey of 14 acres	None	None	(Wiens 1986d)
1986	CRMS/BYU	Survey of 50 acres for UDOT	None	None	(Billat 1986)
1986	CRMS/BYU	Survey of 24 acres for UP&L	None	None	(Nielson 1986)
1986	CRMS/BYU	Survey of 340 acres for UDOT	42Wa112 42Wa89 42Wa90 42Ut609	Heber Valley Railroad (E) Tate dairy farm (E) Mahoney Homestead (N) Olmsted Railroad Bridge (E)	(Wilde and Billat 1988; Mason and Richens 1987), (Southworth 1986a, 1986b), (Billat 1987)
1985	Reclamation	Survey of 7 acres	None	None	(Wiens 1985a)
1985	Reclamation	Survey of 1 acre	None	None	(Wiens 1985b)

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

Year	Agency/Firm or Institution	Description	Cultural Resources	Site Type/ (NRHP Eligibility)	Reference
1985	USHPO	Survey of 1288 acres for Division of Wildlife Resources	None	None	(Lindsay 1985)
1984	Reclamation	Survey of 7 acres	None	None	(Wiens 1984a)
1984	Reclamation	Survey of 46 acres	None	None	(Wiens 1984b)
1984	Reclamation	Survey of 102 acres	None	None	(Wiens 1984c)
1984	CRMS/BYU	Survey of 2 acres for UDOT	None	None	(Southworth and Nielson 1984)
1983	Reclamation	Survey of 1 acre	None	None	(Wiens 1983a)
1983	Reclamation	Survey of 1 acre	None	None	(Wiens 1983b)
1983	Reclamation	Survey of 1 acre	None	None	(Wiens 1983c)
1983	Reclamation	Survey of 72 acres	42Ut501	Historic homestead (N)	(Wiens 1983d, 1981a)
1983	Reclamation	Survey of 245 acres	None	None	(Wiens 1983e)
1983	CRMS/BYU	Survey of 25 acres for UDOT	None	None	(Talbot 1984)
1983	MESA	Survey of 3,440 acres for Reclamation	42Wa45 42Wa32	Historic homestead (N) Prehistoric lithic scatter (N)	(Norman and Merrill 1983) (Norman 1982a, 1982b)
1983	USFS	Survey of 80 acres	None	None	(Rose 1983)
1983	U of U	Survey of 13 linear miles for Reclamation	None	None	(Juell 1983)
1982	Reclamation	Survey of 20 acres	None	None	(Wiens 1982a)
1982	Reclamation	Survey of 1 acre	None	None	(Wiens 1982b)
1982	Reclamation	Survey of 1 acre	None	None	(Wiens 1982c)
1982	Reclamation	Survey of 1 acre	None	None	(Wiens 1982d)

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

Year	Agency/Firm or Institution	Description	Cultural Resources	Site Type/ (NRHP Eligibility)	Reference
1982	Reclamation	Survey of 139 acres	None	None	(Wiens 1982e)
1982	Reclamation	Survey of 4 acres	None	None	(Wiens 1982f)
1982	Reclamation	Survey of 123 acres	None	None	(Wiens 1982g)
1982	Reclamation	Survey of 1 acre	None	None	(Wiens 1982h)
1982	CRMS/BYU	Survey of 25 acres for Reclamation	42Wa31	Historic Corral (N)	(Billat 1982a, 1982b)
1982	USFS	Survey of 12 acres	None	None	(Rose 1982)
1981	CRMS/BYU	Survey of 2 acres for UP&L	None	None	(Nielson 1981)
1981	MESA	Survey of 1,100 acres for Reclamation	42Ut447 42Ut448 42Ut449 42Ut450 42Ut459 42Ut460 42Ut461 42Ut462 42Ut463	Lithic scatter (N) Lithic scatter (N) historic corral (N) Spring head (N) Historic bridge (E) Lithic scatter (N) Lithic scatter (N) Historic bridge (E) Ranch and home (E)	(Merrill and Nielson 1981)
1981	UTARC	Survey of 21 acres for BLM	None	None	(Cook 1981)
1980	AERC	Survey of 870 acres for UP&L	None	None	(Norman, Weder and Hauck 1980)
1980	BLM	Survey of 8 acres	None	None	(Cartwright 1980a)
1980	BLM	Survey of 142 acres	None	None	(Cartwright 1980b)

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

Year	Agency/Firm or Institution	Description	Cultural Resources	Site Type/ (NRHP Eligibility)	Reference
1980 to 1981	Reclamation	The Strawberry Valley Project	42Ut469 42Ut470 42Ut471 42Ut472 42Ut473 42Ut474 42Ut475 42Wa21	Diversion dam (E) Canal in Spanish Fork Canyon (E) Springville Mapleton Lateral (E) Mapleton Siphon (E) High Line Canal (E) Upper Sp. Fork Power plant (E) Lower Sp. Fork Power plant (E) Strawberry Tunnel and Inlet (E)	(Wiens 1981b, 1981c, 1981d, 1981e, 1981f, 1981g, 1981h) (Wiens 1980)
1980	Reclamation	Survey of 50 acres	None	None	(Reclamation 1980a)
1980	Reclamation	Survey of 75 acres	None	None	(Reclamation 1980b)
1980	Reclamation	Survey of 4.5 acres	None	None	(Reclamation 1980c)
1980	Reclamation	Survey of 1 acre.	None	None	(Reclamation 1980d)
1980	Reclamation	Survey of 1 acre	None	None	(Reclamation 1980e)
1980	Reclamation	Survey of 10 acres	None	None	(Reclamation 1980f)
1980	Reclamation	Survey of 1 acre	None	None	(Reclamation 1980g)
1980	Reclamation	Survey of 1 acre	None	None	(Reclamation 1980h)
1980	Reclamation	Survey of 75 acres	None	None	(Reclamation 1980i)
1980	Nickens and Associates	Survey of 3,270 acres for multi-agency	None	None	(Reed 1980)
1980	USFS	Survey of 20 acres	None	None	(Rose 1980)
1980	Water & Power Resources Service (WPRS)	Survey of 10 acres	None	None	(Regional Director WPRS 1980)
1979	BLM	Survey of 1,800 acres	None	None	(Raymond 1979a)

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

Year	Agency/Firm or Institution	Description	Cultural Resources	Site Type/ (NRHP Eligibility)	Reference
1979	BLM	Survey of 769 acres	None	None	(Raymond 1979b)
1979	Reclamation	Survey of 1 acre	None	None	(Barnett 1979)
1979	Powers Elevation	Survey of 40 acres for BLM	None	None	(Dobra 1979)
1979	WPRS	Survey of 1 acre	None	None	(Regional Director WPRS 1979a)
1979	WPRS	Survey of 1 acre	None	None	(Regional Director WPRS 1979b)
1979	WPRS	Survey of 3 linear miles	None	None	(Wiens 1979)
1978	AERC	Survey of 40 acres for UP&L	None	None	(Hauck 1978)
1978	AERC	Survey of 1 acre for USFS	None	None	(Kennette and Hauck 1978)
1978	BLM	Survey of 80 acres	None	None	(McDonald 1978)
1977	BYU	Survey of 40 acres for UP&L	42Ut384 42Ut387 42Ut389	Historic artifact scatter/fences (N) Lithic scatter (U) Lithic scatter (U)	(Berge and Spencer 1977) (Mueller 1976a) (Mueller 1976b)
1977	University of Utah (U of U)	Survey of 500 linear feet for Reclamation	None	None	(Hull and Kreis 1977)
1976	BYU	Survey of 324 acs for UP&L	None	None	(Berge 1976)
1976	U of U	Survey of 100 ac for the US National Park Service	None	None	(Hull 1976)
1976	U of U	Survey of 115 acres for the US National Park Service	None	None	(Holmer 1976a)

**Table 3-1  
Cultural Resources (Archaeological) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

Year	Agency/Firm or Institution	Description	Cultural Resources	Site Type/ (NRHP Eligibility)	Reference
1976	U of U	Survey of 9,600 acres for the US National Park Service	42Wa3 42Wa4 42Wa6	Lithic scatter (U) Lithic scatter (U) lithic scatter (U)	(Holmer 1976b)
1976	U of U	Survey of Deer Creek Dam for Reclamation	42Wa9 42Wa10	Lithic scatter (U) Lithic scatter (U)	(Hull and Fuller 1976) (Coulam 1976a, 1976b)

**Notes:**

E = Eligible for the National Register of Historic Places (NRHP)

N = Not eligible for the NRHP

U = No NRHP recommendations were made for this site

HABS/HAER = Historic American Building Surveys/Historic American Engineering Record

### 3.2.2 Historical Standing Structures/Sites File Search

A total of 23 surveys were conducted in the current project area for historic standing structures (Table 3-2). Twelve of these projects were conducted on behalf of Springville, Orem, Provo, Mapleton, Santaquin cities and Utah County (Broschinsky, 2001, 2003; Jensen 1998; Roberts 1996; Hyatt and Knight 1995; Julien 1995; Varley 1990; Nielson and Southworth 1990; Johnson 1888-91; Howell and Jensen n.d.). Ten of the above mentioned projects that were conducted for the cities or the county were reconnaissance level or CLG (define this term) surveys. One project consisted of a National Register Nomination for the Historic District of Springville (Broschinsky 2003), and one project was an intensive level survey of the wastewater treatment plant in Santaquin (Nielson and Southworth 1990). The remaining 11 projects were conducted for government agencies such as UDOT (6), the Reclamation (3), Division of State History (1) and the USFS (1) (Billat 2001; Polk et al. 2000; Hughes et al. 1994; Baker 1993; Miller et al. 1993; Ballantyne and Thompson 2001; Merrill et al. 1982; Temme 1981).

During these 23 projects, a total of 357 properties were recorded within or near the current project boundaries. These 357 properties included 7 canals or ditches, 1 bridge and 1 segment of the Southern Pacific Railroad. Six of the canal/ditches and the bridge were recommended eligible to the NRHP, and the remaining ditch and railroad segment were recommended not eligible to the NRHP. The remaining 348 of the properties contained buildings. The majority of the buildings were evaluated based on the Utah State Historic Preservation Office criteria, and the remainder were evaluated under the NRHP criteria only. The evaluation of A or B under the USHPO criteria is equal to an eligible evaluation under the NRHP criteria. A total of 33 structures were evaluated as A, 174 were evaluated as B, 15 were evaluated as C, and 70 were evaluated as D (out-of-period). The recommendation of the buildings evaluated under the National Register Criteria are as follows; 22 eligible, 18 not eligible and 24 potentially eligible.

Eighteen historic standing structures were recorded separate of any project. These include 5 buildings that are listed on the NRHP; 1300 E Center, Provo, a 1936 Recreation Center; 1079 E Center, Provo, the 1934 Superintendents residence at the State Hospital; 10 S 600E, Payson, the 1902 Petetneet School; 160 S Main, Payson, the 1885 Payson Presbyterian Church; and 115 S Main St, Mapleton, an 1892 Roswell Darius Bird Sr. House. In addition to these NRHP listed buildings, 7 bridges and a box culvert were recorded separate of any project. Only one of these bridges, the c.1913 Hobble Creek Bridge in Springville, was recommended eligible to the NRHP. The remaining 6 structures are all residences, none of which were evaluated based on USHPO or NRHP criteria.

**Table 3-2  
Cultural Resources (Historic) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

Page 1 of 4

<b>Year</b>	<b>Agency/Firm or Institution</b>	<b>Description</b>	<b>Cultural Resources</b>	<b>Site Type/ NRHP Eligibility</b>	<b>Reference</b>
2003	Preservation-Documentation Resource	A NRHP Nomination for the Springville Historic District of 64 blocks in Springville	98 buildings within current project APE (365 N. to 801 S. 400 E.)	12 buildings evaluated as (A) 64 buildings evaluated as (B) 1 buildings evaluated as (C) 21 buildings evaluated as (D)	(Broschinsky 2003)
2001	JBR	This project consisted of a combined archaeological and historic project.	42Ut1135 20 buildings in APE (33 N. to 2400 S. 1600 W.)	7 segments of a historic ditch (B) 12 buildings evaluated as (B) 6 buildings evaluated as (C) 2 buildings evaluated as (A)	(Billat 2001)
2001	Preservation-Documentation Resource	A CLG survey for the Springville Historic Preservation Committee and the Springville Community Development Dept	148 buildings within current project APE (365 N. to 1440 S. 400 E.)	16 buildings evaluated as (A) 87 buildings evaluated as (B) 2 buildings evaluated as (C) 49 buildings evaluated as (D)	(Broschinsky 2001)
2000	Sagebrush Consultants	A survey of SR-198 for UDOT from Payson to Spanish Fork	113 buildings evaluated. All out of the current project APE	None.	(Polk et al. 2000)

**Table 3-2  
Cultural Resources (Historic) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

<b>Year</b>	<b>Agency/Firm or Institution</b>	<b>Description</b>	<b>Cultural Resources</b>	<b>Site Type/ NRHP Eligibility</b>	<b>Reference</b>
1998	J. Cory Jensen	A CLG survey of 224 buildings in Provo, for Provo City	All out of the current project APE	None.	(Jensen 1998)
1996	AIA Historic Projects	A CLG survey of 3100 buildings of the "older" area of Provo	1015 E. Center in APE 1076 E. Center in APE 1079 E. Center in APE	ca. 1940 Period Revival (A) ca. 1895 Victorian (A) ca. 1935 Period Revival (A)	(Roberts 1996)
1995	Preservation Research Consultants	A reconnaissance survey of the eastern unincorporated Utah County	16 historic buildings	10 buildings evaluated as (B) 6 buildings evaluated as (C)	(Julien et al. 1995)
1995	OPA/BYU	Evaluation of the Highline canal and four SFN laterals; two new canals were recorded	No site number No site number	Salem Canal (N) South Field Canal (E)	(Irvine 1995)
1995	Sagebrush Consultants	This project consisted of a survey of the Deer Creek Reservoir area in Charleston, Wasatch County.	42Wa175 3058 S. 3600 W. 3128 S. 3600 W. 3188 S. 3600 W. 3270 S. 3600 W. 3610 S. 3600 W.	North milk barn (N) Vic Eclectic Crosswing (E) Vernacular Hall-parlor (E) Vernacular Crosswing (N) Greek Rev Hall-parlor (N) Vernacular Crosswing (N)	(Weymouth et al. 1995)
1995	Smith Balle Hyatt Architects	A CLG survey for Orem City	No properties located in current APE.	None.	(Hyatt and Knight 1995)
1994	Baseline Data	800 to 900 S. in Springville & SR-89 to Mapleton Main Street	30 historic buildings, all outside of APE		(Hughes et al. 1994a)
1994	NCG	Hobble Creek Bridge at 160 S. 300 E. in Springville	160 S. 300 E.	Hobble Creek Bridge (E)	(Hughes et al. 1994b)

**Table 3-2  
Cultural Resources (Historic) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

<b>Year</b>	<b>Agency/Firm or Institution</b>	<b>Description</b>	<b>Cultural Resources</b>	<b>Site Type/ NRHP Eligibility</b>	<b>Reference</b>
1994	OPA/BYU	A CLG survey for the City of Orem	No buildings recorded within current APE		(Westwood 1994a)
1994	Westwood Research and Consulting	A reconnaissance survey of select areas in northern Utah County for Utah County	No historic properties are located in APE		(Westwood 1994b)
1993	OPA/BYU	A cultural resources survey of the 1860 South Corridor for the SR-89/ East Bay Connector Development, Provo, Utah	42Ut883 42Ut884 42Ut889 1650 S 1330 E 1660 S 1330 E	Historic residential site (N) Historic So Pacific (N) Historic Trash Scatter (N) Wood Frame Cottage (N) Wood Frame Cottage (N)	(Baker 1993a)
1993	NCG	A cultural survey of the South Loop Road in Utah County, for UDOT	16 buildings located outside of APE		(Miller et al. 1993)
1991	US Forest Service	A cultural resources survey of the Ray's Valley Road realignment for the USFS	One historic bridge	Sixth Water Bridge (E)	(Ballantyne & Thompson 2001)
1990	Mapleton City	A CLG survey for Mapleton City Historical Preservation Commission for planning	30 historic buildings	24 potentially eligible 8 ineligible	(Varley 1990)
1990	NCG	Inventory of the Santaquin City wastewater treatment system	No features were in project area		(Nielson and Southworth 1990)

**Table 3-2  
Cultural Resources (Historic) Inventories and Associated Sites in or  
Within One Mile of the ULS Project Area**

Year	Agency/Firm or Institution	Description	Cultural Resources	Site Type/ NRHP Eligibility	Reference
1988 to 1991	City of Springville	From 1988 to 1991, five Utah State Historic Preservation Structure Information Forms for Springville City	212 N 400 E 110 N 400 E 101 S 400 E 243 S 400 E 1113 S 400 E 924 S 400 E	Hall-parlor (E) Victorian Cottage (E) Victorian Crosswing (E) Victorian Crosswing (E) Victorian (E) Victorian Hall-parlor (E)	(Johnson 1988, 1989, 1991a, 1991b, 1991c)
1982	MESA Corporation	A Historical Mitigation Study of the Strawberry Valley Project, Utah for the Reclamation	42Ut472 HAER UT-26 HAER UT-26P/ 42Ut473 HAER UT-26M/ 42Ut471 HAER UT-26Q/ 42Ut473	Mapleton Siphon (E) Strawberry Valley Project (E) Highline Canal (E)  Mapleton Lateral (E)  Lateral 20 (E)	(Merrill et al. 1982)
1981	Division of State History	This project consisted of an architectural survey of the city of Springville conducted by the Division of State History	212 N. 400E. 110 N. 400 E. 101 S. 400 E. 243 S. 400 E. 1113 S. 400 E. 924 S. 400 E.	Hall-parlor (E) Victorian Cottage (E) Vic Crosswing (E) Vic Crosswing (E) Victorian (E) Vic Ecl. Hall-parlor (E)	(Temme 1981)
n.d.	Provo City, Office of the Mayor	A study performed by the Mayor's Office of north University Avenue in Provo	No specific data on structures, only general guidelines.		(Howell and Jensen n.d.)

**Notes:**

E = Eligible for the National Register of Historic Places (NRHP)  
 N = Not eligible for the NRHP  
 U = No NRHP recommendations were made for this site  
 HABS/HAER = Historic American Building Surveys/Historic American Engineering Record

A = Eligible for the NRHP and a good representation of style and type  
 B = Eligible for the NRHP but not a good representation of style and type  
 C = Currently ineligible for the NRHP  
 D = Out of the historic period

### 3.3 Overview

In order to understand the prehistory and history of the project area and, more importantly, to be able to provide a context within which to evaluate sites found during the project surveys, it is necessary to present a cultural resources overview of the project area. Following is a broad overview of the prehistory and history of the area. As part of this overview, an idea of the range of cultural resources to be expected is also provided.

#### 3.3.1 Prehistoric Context for Utah Valley and the Wasatch Range

The prehistory of the current project area generally parallels that of the eastern Great Basin and begins near the end of the Pleistocene Epoch. The cultural changes in the Great Basin are classified into six general chronological periods as defined by Jennings (1986:115). These periods include: the Pre-Archaic, Early Archaic, Middle Archaic, Late Archaic, Pre-Contact, and Historic. The basin is further divided into subregions, such as the eastern Great Basin, which is identified by a series of distinctive cultural phases, which are marked by a distinct way of life and has been defined by datable projectile points. Following is a brief description of each of the aforementioned periods and their individual phases. These descriptions note significant traits, characteristics, and artifacts associated with each phase or period.

##### 3.3.1.1 *Pre-Archaic: ca. 12,000 to 9,000 B.C.*

The Paleo-Indian Period, also known as the Clovis Period, is poorly understood in the eastern Great Basin. What little is known about this period comes from a limited number of surface sites and isolated finds of Clovis, Folsom, and Lake Mojave projectile points (Zier 1984:21). Associations of large faunal remains with Paleo-Indian artifacts like those commonly found in the Great Plains are absent in the eastern Great Basin and Northwestern Colorado Plateau. Sites and isolates attributed to Paleo-Indian occupation of the area are typically found along the edges of extinct Pleistocene or early Holocene beaches suggesting a possible lake edge-marsh adaptation (Madsen 1982:213; Heizer and Baumhoff 1970).

##### 3.3.1.2 *Early Archaic: ca. 9,000 to 3,500 B.C.*

This period, which is poorly represented in the current project area, is marked by broad range movement and hunting of big game by the native peoples. It includes the period of climatic change associated with the end of the Pleistocene Epoch and the subsequent cultural adaptations. The Early Archaic Period is divided into two phases, the Bonneville Phase and the Wendover Phase.

**3.3.1.2.1 The Bonneville Phase: ca. 9,000 to 7,500 B.C.** The terminal Pleistocene, called the Bonneville Period in the Great Basin by Aikens and Madsen (1986:154), is associated with the hunting of big game such as extinct bison, camel, mammoth, ground sloth and other large fauna. No doubt, humans of this time also made use of many other animal and plant species. Though evidence of this period of human activity has been found in other parts of the western United States, its presence in Utah is largely limited to surface finds of large lanceolate shaped projectile points along lake shores in the western part of the state (Aikens and Madsen 1986:154). In north Central Utah, known evidence of this period is limited to a Clovis point which was found near Duchesne in the 1950s (Schroedl 1976) and a probable Folsom Point fragment found near Cedarview, ten miles northwest of Roosevelt (Lindsay 1976).

**3.3.1.2.2 The Wendover Phase: ca. 7,500 to 4,000 B.C.** This period encompasses the time when Pleistocene lakes in the Great Basin greatly receded. The change in environment gave way to a more diversified hunting and gathering subsistence strategy for prehistoric inhabitants due to a wider availability of game and plant foods. Technological changes, which occurred along with these environmental shifts, included the appearance of an increasing number of grinding implements for wild plant processing, and of atlatls or spear-throwers. Other

artifacts known from this occupation include thin slab millstones, manos, L-shaped scapula and splinter awls, antler flaking tools, basketry, and flaked stone tools (Jennings 1978:75).

### ***3.3.1.3 Middle Archaic: ca. 3,500 B.C. to A.D. 500***

The Middle Archaic period is marked by a shift to the exploitation of upland resources and the diversification of settlement patterns to include a wide range of ecozones. It includes a change in the tool assemblage of native peoples to include fewer milling stones and a wider variety of projectile points. None of the important sites associated with this period are located near the current project area. This period consists of a single phase, the Black Rock Phase.

**3.3.1.3.1 The Black Rock Phase: ca. 4,000 B.C. to A.D. 500.** The Black Rock Period (Aikens and Madsen 1986:157) is characterized by a dramatic increase in the occupation of sites, a movement into areas of higher elevation and a further diversification of resource exploitation (Aikens and Madsen 1986:157). The technology of the period remained about the same as the Wendover Period until near its end when smaller projectile points are introduced, indicating a shift to the use of the bow and arrow.

### ***3.3.1.4 Late Archaic: ca. A.D. 400 to 1300***

This period is characterized by a shift from a hunting and gathering way of life to a more sedentary horticulture based life style. The growing of maize increased during this time period for much of the Great Basin. The native peoples associated with this time period, the Fremont, were roughly contemporaneous with the Anasazi of southern Utah and the Four-Corners region. A number of important sites attributable to this period are located in the general vicinity of the current project area. These sites, which are primarily represented by small hamlets or rancherias, include Pharo Village, Snake Rock, and Hinckley Farm (Marwitt 1986:162). The Late Archaic is composed of a single phase known as the Fremont Culture (Phase).

**3.3.1.4.1 Fremont Culture: ca. A.D. 400 to 1300.** Near the end of the Black Rock Period many elements of a settled horticultural lifestyle were introduced into the Archaic life way of Utah from the Southwest including the manufacture of pottery and horticultural practices. The Fremont Culture is a label applied to groups exhibiting this different lifestyle who occupied the Utah area from ca. A.D. 400 to 1300 (Marwitt 1986:161). Five geographic Fremont variants are generally recognized today, one of which, the Sevier variant, occupied the current project area.

The Sevier Fremont have a relatively short period of occupation in the eastern Great Basin as compared to other Fremont variants in the state (Marwitt 1986:166). Archaeological evidence suggests an occupation period from A.D. 750 to 1300 for this group which is one of the least well-understood Fremont variants. This evidence, which was recovered from sites such as those mentioned above, also indicates that the occupation was moderately intensive. Many of the archaeological sites attributable to this group consist of only a few circular pit houses and coursed adobe or slab masonry storage structures with an occasional jacal surface structure. Such sites are generally located on alluvial fans near canyon mouths, perennial streams, or marshes.

The material remains of the Sevier Fremont suggest that this group practiced a mixed subsistence strategy of horticulture and hunting and gathering. Marsh resources are particularly well represented in the middens of the Sevier Fremont. Archaeological sites attributable to this group are distinguished by the presence of a unique basalt tempered grayware pottery known as Sevier Gray. Ivie Creek black-on-white pottery is also common at Sevier Fremont sites. After A.D. 1050, Snake Valley black-on-gray tradeware from the Parowan Fremont to the south becomes increasingly more common at sites of this group (Marwitt 1986:167).

### ***3.3.1.5 Pre-Contact: ca. A.D. 1200 to 1776***

The Pre-Contact period is marked by the apparent replacement of the Fremont peoples by a migratory group of Shoshonean (Numic) speaking peoples from the southwest. This period also includes the arrival of the direct ancestors of modern-day Utah Indian tribes and their exploitation of the area's resources. Archaeological sites from this period are numerous. However, no exceptional Pre-Contact or Shoshonean sites are located near the current project area.

**3.3.1.5.1 The Numic Expansion: ca. A.D. 1200 to 1776.** The final archaeologically identifiable phase of occupation prior to the historic- ethnographic period is that of the Numic Expansion. This occupation apparently began as Numic/Shoshonean speaking peoples migrated into the northern Utah area and replaced the Fremont Culture. It is not yet clear whether the Fremont abandoned the area prior to the arrival of the Shoshoneans or whether resource competition between the two groups forced the Fremont from the region (Marwitt 1986:171-172). Little is known about the Shoshonean groups archaeologically, other than the presence of Shoshone pottery and Desert Side-Notched projectile points. Ethnographically, subsistence activities of Shoshonean groups (bands) involved seasonal movements to specific geographic localities as particular food resources became available throughout the year (Steward 1938). The size and structure of a band fluctuated with changes in the types and availability of resources, but generally included small, family-sized bands through the spring and summer, and large, multi-family groups during the fall and winter months.

### **3.3.2 Ethnographic Context for Utah Valley and the Wasatch Range**

It is known that the Northwest Band of the Shoshone Tribe, the Goshute, the Southern Paiute, have historically used lands within and near the project area. However, this period is best characterized by the initial contact and ensuing relationship between the primary Native American tribe in the project area (the Ute) and Europeans and European-Americans. It also includes the developments and changes in the Ute culture and the restriction of the indigenous peoples to reservation lands as a result of influence and pressure by white settlers.

#### ***3.3.2.1 The Ute: 1776 to Present***

The first written accounts of the presence of Utes in the project area come from the journals of the Dominguez-Escalante expedition as they attempted to establish an overland route from Santa Fe to Monterey (Jones and MacKay 1980:65). These journals describe the presence of a large, permanent Ute settlement at the south end of Utah Lake. A guide for the expedition also indicated to Dominguez and Escalante that this group made annual hunting and gathering trips through Spanish Fork Canyon and into the Heber Valley. With the establishment of the Spanish Trail, contact between the Utes and the explorers continued. Soon, it is rumored, a slave trade developed between the Spanish and the Utes in which the Utes would raid nearby Paiute camps, capture children, and trade them to the Spanish (Janetski 1991:32).

Additional accounts of the activities of the Ute come from the records of explorer William Ashley. In his journal documenting his 1824-25 expedition through the area, Ashley describes a large, permanent village along the shores of Utah Lake (Janetski 1991:18). The village was inhabited by a subgroup of Utes known as the Timpanogos Ute or the Tumpanawach whose traditional territory was bounded on the north by the Traverse Mountains and on the south by the territory of the Sanpits and Pahvant Ute. The western boundary lies immediately west of Utah Valley while the eastern boundary had no clear demarcation. According to Ashley, the village he observed housed the largest and most well organized band of Utes in the area. This group subsisted entirely on wild resources which were collected from the surrounding marshes, canyons, and mountains. In addition to the large numbers of fish obtained from the lake, the Timpanogos supplemented their diet with wild seeds, waterfowl, and jackrabbits. Although bison were still present to the east in the Uinta Basin, the Ute did not hunt them for fear of attack by the Comanche who also hunted in that area (Janetski 1991:33). Although the

Timpanogos occupied the Utah Lake village year round, small groups did leave in the fall to hunt or to visit relatives living elsewhere with other Ute bands. Each spring, several bands would gather together to fish along the Provo River.

Shortly after the arrival of the Mormon pioneers (members of the Church of Jesus Christ of Latter-day Saints, also known as Mormons) to the Salt Lake Valley in 1847, conflicts between the new settlers and the native inhabitants began to arise. As more settlers arrived and moved south into Utah Valley to homestead, the Utes felt increasingly crowded and continued to raid the white settlements. In an effort to stem the attacks, Mormon leaders established a reservation farm at the southern end of Utah Lake in 1855. Here, the settlers attempted to introduce their ways of livestock raising and farming to the Utes. Occupation of the Utah Lake Indian Farm lasted until 1861, at which time the Timpanogos abandoned the area in favor of resettling on the newly formed reservation in the Uinta Basin (Fike and Phillips 1984:86; Janetski 1991:32). However, the Timpanogos returned annually to the Utah Valley to fish until after the turn of the century. Although the Timpanogos went to the Uinta Basin voluntarily, not all Ute groups did so. Attempts to force all bands of Utes onto the Uintah Valley Indian Reservation led to a series of violent confrontations between Utes and settlers throughout the state. These conflicts, known collectively as the Black Hawk War, forced many settlers to seek refuge in the relative safety of the Wasatch Front. The hostilities were finally ended with the signing of the Treaty of Spanish Fork by Chief Tabby of the Ute Tribe in 1865. Under this treaty, which was never ratified by Congress, the remaining Ute groups agreed to move onto the reservation in the Uinta Basin in exchange for the establishment of farms there and the payment of annuities by the federal government (Jones and MacKay 1980:62; Fike and Phillips 1984:86).

### **3.3.3 Historic Context for Utah Valley and the Wasatch Range**

The project is basically located in two principal areas; Utah Valley and Heber Valley. While both valleys were settled and developed by Mormon pioneers along similar patterns, each valley has its own separate and distinct historical events based upon its resources and geographical location. Thus, the historical context has been divided into two separate discussions on each of the two valleys, as well as their individual communities that the pipeline passes through. However, both valleys are linked, not just physically by Provo Canyon, but by their early history, which includes the early explorers and fur trappers. In addition, both valleys support technology based enterprises that flourish. They depend on the two major industries of ranching and agriculture. The development of these industries served as the main impetus to settlement in the region and has continued to provide the basis of much of Utah's economy, in addition to mining and timber.

Although the other industries, such as mining and timbering, have done well in the state, they have been susceptible to market prices and to the availability of the resource. Advances in technology have also contributed to the change in the make up the industry and economy in the area, as well. The smelting of steel and iron have given way to computer manufacturing and computer programming. These new technologies and markets have brought about a shift in the growth patterns and the industries of the valleys. The affect of these shifts will become more evident as time passes and the effects can be viewed with a greater prospective of time.

#### ***3.3.3.1 Utah Valley Historic Overview***

The historic development of Utah Valley follows the same basic pattern as most of northern Utah, which begins with the Exploration and Fur Trapping Period and then followed by the Settlement Period. The pattern continued with the arrival of the transcontinental railroad and the Railroad Era. This era was followed by an Economic Decline, the Great Depression and World War II. Lastly, the cities and towns of Utah Valley have seen an economic revival during the Post-War Era. Since all of the Utah Valley communities within the project area have the first two periods in common, they are discussed under the Utah Valley Historic Overview and the discussion of the history for each individual community begins with its own establishment.

**3.3.3.1.1 Exploration and Fur Trapping Period (1776 to 1846).** The first white men known to have viewed northern Utah were members of the Spanish Dominguez-Escalante Expedition in 1776. Although Fray Francisco Atanasio Dominguez was the leader of the group of ten men, it was Fray Silvestre Velez de Escalante, who kept the records of the expedition (Warner 1976:xiv and 1978:36). The main purpose of the expedition was to establish a route between the Spanish colony of Santa Fe in New Mexico and the Spanish California at Monterey in California in order to check Russian advancements into northern California (Warner 1978:47). A secondary goal was to establish relations with local natives encountered and locate suitable sites for missions (Warner 1976:ix).

On September 23, 1776, the small company entered Utah Valley from the southeast through Spanish Fork Canyon where they climbed a small hill at the mouth of the canyon so they could lookout across the valley (Warner 1976:52-54, 1978:40). After spending a few days on the shores of Utah Lake, the party moved south through the valley continuing their search for a route between the Spanish colonies (Warner 1976:52-62). With winter advancing, the members of the expedition could not decide among themselves if they should continue on to Monterey or return to Santa Fe. On October 11, the company drew lots with Santa Fe as the outcome and so they continued their trek south back to Santa Fe (Warner 1976:xvii, 73-74, 1978:45-46). Although the expedition was considered a failure, the Spanish, and later Mexican, interests were made aware of the area. Both Spain and later Mexico were unable to take advantage of the expedition's discoveries because of other political problems (Cannon 1987:12, 1994:447).

In the years immediately following the explorations of the Dominguez-Escalante, the area appears to have been visited by other Spanish explorers and traders, who left no primary record of their travels (Moffitt 1975:6). The "Old Spanish Trail" was a pack animal route between Spanish and Mexican settlements in southern California and those in New Mexico (Miller 1980: n.p.; Wahlquist 1981:85). Divergent trails leading into Utah Valley, the Uinta Basin, and along the Sevier River, allowed the Spanish to trade with the local Indians for furs, gold, horses, and Indian slaves (Miller 1980: n.p.). While the pack trains between California and New Mexico operated on a regular basis, the trading expeditions appear to have limit in scope and operation. Utah did not become the focus of widespread European-American interest until the expansion of the fur trade in the early nineteenth century.

When members of the Lewis and Clark expedition returned to St. Louis in 1806 from their journey to the Far West, they brought back reports of abundant beaver in the rivers and streams of the region. With beaver fur in demand as a material for making hats, entrepreneurs formed fur companies to exploit the vast, untapped beaver supply in the North American West (Bartlett and Goetzmann 1982:26-30). By the early 1820s, traders from New Mexico licensed by the Mexican government, British companies based in Oregon, and American interests based in St. Louis were trapping in present-day Utah (Eldredge and Gowans 1994:209). Numerous trappers and traders visited Utah Valley and present-day Provo during the 1820s and 1830s, including Americans Jedediah Smith, William Sublette, and Etienne Provost, the French-Canadian trapper for whom the Provo River and the city of Provo were named (Moffitt 1975:11).

Some of the first fur trappers to reach and to enter the Utah region were members of the British and Canadian Hudson's Bay Company and Americans of the Rocky Mountain Fur Company. The Hudson's Bay trappers were led by Peter Skene Ogden, those of the Rocky Mountain Fur Company by Jedediah Smith. In 1825, Ogden and his men came out of the north from Fort Nez Perce on the Columbia River, while the Americans under Smith came from Wyoming into the Soda Springs area of Idaho and south into Utah (Miller 1978a:55-56). Both companies spotted each other and began following one another off and on throughout their journey south. They explored the west face of the Wasatch Range, trapping the streams and valley regions, and eventually meeting at Mountain Green (Miller 1978a:56; Tykal 1994:448).

Over the next several years, trappers from both the British Canadian Provinces and the United States, as well as those from New Mexico, trapped and explored the rivers and streams of Utah. As they continued to explore the region, trappers like Etienne Provost and Jedediah Smith began to establish the routes that would become overland trails to California. In 1825, Provost, a French-Canadian trapper who worked out of Taos, New Mexico,

led William Ashley and his party over the Wasatch Mountains into the Salt Lake Valley and established two temporary trading posts; one in Utah Valley on the Provo River near Utah Lake, and second along the Jordan River in the Salt Lake Valley sometime around 1824 or 1825 (Chittenden 1935:272; Tykal 1989:68, 1994:448). Provost is believed to be the first American to see the Great Salt Lake (Tykal 1994:448). In 1826 and again in 1827, Jedediah Smith made two trips south from the rendezvous sites on Henry's Fork and Cache Valley into southern California and returned via Northern Nevada and the Humboldt River (Miller 1978a:61-62; Morgan 1953:195 and 237). Other trappers continued to explore the area until the 1840's, when the region became "trapped out" and settlers began to move in.

By the 1840s, the once abundant beaver had been nearly trapped out in much of the American West and the fur trade rapidly declined in importance. Exploration of Utah Valley continued in the form of government-sponsored expeditions. Captain John C. Fremont of the U.S. Corps of Topographical Engineers explored the Provo River and Utah Lake (Fremont 1845, Moffitt 1975:75). In 1843 and 1845, John C. Fremont, a US Army Captain, on his second and third expeditions into the unexplored west, entered Northern Utah. During his second expedition, Fremont led his men on a long journey through Wyoming, down the west face of the Wasatch Range to the Great Salt Lake and then along the outer edge of the Great Basin before turning north through Idaho, Oregon, California, and Nevada (Fremont 1845:150-60; Miller 1978b:74-76). On his third trip in 1845, he and his company of men came through the Uinta Basin, down Provo Canyon to Utah Lake, then north along the Jordan River to the south shore of the Great Salt Lake, across the Salt Flats to the Humboldt River (Miller 1978b:77-78). The reports and maps provided by the Fremont expeditions subsequently influenced the decision of the Mormons (members of the Church of Jesus Christ of Latter-day Saints) to settle in the Salt Lake Valley in 1847 (Spence 1994:206).

**3.3.3.1.2 Settlement of Utah Valley (1849-1856).** In July 1847, the first Mormon pioneers entered the Salt Lake Valley and immediately began establishing a community. In the following years, their leader and Church President, Brigham Young, set about organizing and directing the colonization of the surrounding valleys and areas. This colonization effort included a string of communities and settlements that stretched from Salt Lake City on the northern end to San Pedro Harbor in California on the southern end (Campbell 1978:140). This system of towns would allow the Mormons to bring immigrants to Utah along a more convenient and less harsh route. Utah Valley was the start of the corridor beyond the Salt Lake Valley.

Young's colonization plan developed into a process, which consisted of first exploring the area prior to sending out a company of settlers (Arrington 1958:88). After suitable land and water were located, a company was organized with specific types of occupations being selected, such as brick masons, blacksmiths, coppers, surveyors, carpenters, wheelwrights, teachers, cabinetmakers, and farmers to name a few (Campbell 1978:135). Prior to beginning the journey, the settlers were formed into companies of ten, fifty, and hundred based on Mormon military tradition and the activities that would take place once they arrived at their destination (Arrington 1958:89). Upon arrival at the selected site, specific companies or units were put to work on one of a number of tasks, which included surveying the new town site and laying out the individual blocks and lots, preparing the ground and planting crops, and constructing a stockade for protection, and other necessary activities. Thus, communal work typified these early settlements. In Utah Valley (later County), communities that followed this pattern consisted of Alpine (1849), Provo (1849), American Fork (1850), Lehi (1850), Lindon (1850), Pleasant Grove (1850), Payson (1850), Springville (1850), Salem (1851), Santaquin (1851), and Mapleton (1856) (Wahlquist 1981:90-93).

**3.3.3.1.3 Northern Utah Valley (Provo, Springville, Mapleton).** Settlement of the Provo-Springville-Mapleton area occurred between 1849 and 1856 (Dixon 1974:1-2; Van Cott 1990:290, 331,349). The first permanent Mormon settlement in Utah Valley began with Provo, which based upon the Young's settlement pattern. Another company of settlers began Springville the following year. However, Mapleton was not begun in the same manner, rather it was an off-shoot of Springville in 1856.

**3.3.3.1.3.1 Settlement (1849-1856).** In 1849, Brigham Young sent a group of about 150 people to establish a Mormon settlement on the south bank of the Provo River, near the present-day intersection of Center Street and Geneva Road in Provo (Jensen 1924:34, Moffitt 1975:17). The settlers immediately began constructing a fort along the river banks, which they called Fort Utah. The fort consisted of a fourteen-foot wooden wall of upright poles between small log houses (Cannon 1987:13). Conditions at the fort were harsh. Heavy snowfall in May, 1849, destroyed a large portion of their crops planted earlier in the spring and resulted in flooding on the Provo River, which also inundated the fort (Moffitt 1975:18). White encroachment on traditional Ute Indian territory created tension that led to skirmishes, then to more serious conflict. In 1850, a militia from Fort Utah and Salt Lake City encountered a group of Utes led by Big Elk along the Provo River. Several days of fighting resulted in the deaths of at least thirty Utes, including Big Elk (Jensen 1924:45-58, Cannon 1987:13-14).

The conflict with the Utes and the vulnerability of Fort Utah to flooding led settlers to seek out a new location for the fort further to the east. To accommodate the increasing number of people moving to the area from the Salt Lake Valley, a larger fort was laid out in the vicinity of present-day 500 North and 500 West in Provo (Jensen 1924:58, Moffitt 1975:21). As the population of the fort increased, settlers began building houses outside the walls of the fort (Cannon 1987:14). The city of Provo was officially incorporated in 1851 and became the regional center for other Utah Valley settlements established during the 1850s, including Lehi, American Fork, Pleasant Grove, Springville and Payson.

In September 1850, the year after the establishment of Fort Utah on the Provo River, Aaron Johnson led a company of settlers to an area about five miles southeast of the fort, along Hobbie Creek (Haymond 1994:526; Holzapfel 1999:64). Upon their arrival the settlers began constructing a fort consisting of the outside walls of their log cabins. The following year, A. J. Stewart arrived on orders from Brigham Young to survey the town site (Broschinsky 2003). On February 13, 1852, the town, known to this time as Hobbie Creek, was given a charter and renamed Springville because of all of the springs located in the area (Broschinsky 2003). By 1853, Springville had grown from the original 71 people to a population of 799 (Broschinsky 2003).

Six years after the founding of the town, a group of thirteen men began to work together to level and irrigate the bench area south and east of Springville (Harmer 1994:346). They managed to fence from five to six hundred acres of land, which they began to farm (Harmer 1994:346). Much of this work was a result of the cooperative spirit endorsed by the Church during this period under the United Order and the area became known as Union Field. However, the outbreak of the Walker War, which forced temporary abandonment of the area, and the break down of the United Order effort, caused the land to be redistributed (Harmer 1994:346). By 1877, 18 families had established homes and farms on the field (Harmer 1994:346). In 1903, the area had grown sufficiently that a petition to organize a town was granted by the Utah County Commission and thus, the town of Mapleton was created (Harmer 1994:346).

During this period, agriculture was the most important business in Utah Valley and water was the key to successful crops. However, water had to be brought from the Provo River to distant fields. The Provo Canal and Irrigation Company was incorporated on January 17, 1850, which established the first regulations for taking water from the Provo River. Many canals were needed to water all of the acres that would come under cultivation (Moffitt 1975:77). One of the first canals constructed was the Lake Bottom Canal, which was begun in 1856 (Mead 1903:110).

In 1902-03, Elwood Mead, Chief of Irrigation Investigations of the United States Department of Agriculture conducted an evaluation of the Provo River and its associated irrigation systems. He described the Lake Bottom Canal, as follows:

This canal is the lowest one (canal) diverting water from the west side of Provo River. Its head gate is located about 3 miles below the head of the West Union Canal. The water is conveyed in a roughly constructed channel along the river bottoms for nearly 2 miles, where a more carefully constructed canal

begins. From this point the canal takes a northwesterly direction in a course parallel to the West Union Canal. The total length of the canal, including its seminatural channel in the river bottoms, is between 7 and 8 miles. The area of land entitled to water under the system approximates 6,000 acres.

This canal has one of the earliest water rights on the river. The first appropriation was made in 1856 or 1857, at which time only a small ditch was taken out and but little water used. The canal was afterwards enlarged and the amount of water taken out increased. In addition to the supply of river water to which this canal is entitled, it is by virtue of its location able to control a great part of the seepage and return water from the Provo Bench above, which comes to the surface in small springs along the river bottoms and along the foot of Provo Bench. This water is caught by the canal, and during the greater part of the irrigation season is of sufficient amount to satisfy the needs of all the irrigated land under it. For several years the company controlling the canal has depended on this means for supplying its canal and has allowed its share of the river water to be divided proportionately among the several canals lying higher upon the river. It is understood, however, among the several companies that the Lake Bottom Company has in no way relinquished its rights to water from the river, and that if at any time the seepage water should fail they can claim their supply direct from the river (1903:110-111).

Before long, canals and ditches were carrying water from the river to thousands of acres of farm land and a number of companies were formed to control these canals and the water flowing through them. However, water was not the Mormon pioneer's only problems.

Relations between the local representatives of the federal government and the Mormon leadership, which had always been strained, reached a breaking point in 1857. Upon resigning, several of the federal officials sent letters informing President James Buchanan that the Mormons were 'in a state of substantial rebellion' (Arrington 1958:171). President Buchanan became convinced that the Mormon-dominated territorial government of Utah was disloyal to the Union and in 1857, ordered 3,500 federal troops to Utah to put down the so-called "Mormon Rebellion" (Arrington 1958:170). He also instructed that Governor Brigham Young be replaced by Alfred Cumming of Georgia (Arrington 1958:171). When Brigham Young heard that federal troops were on their way to Utah, he interpreted these events as an act of war (Arrington 1958:175). Young ordered settlers in northern Utah to relocate to Provo and other settlements to move further to the south in what became known as the "Move South" or the "Big Move" (Arrington 1958:177; Cannon 1994:448). Thousands of Mormons moved to Provo at this time, including Brigham Young (Cannon 1994:448). Provo was also the destination for church property and official records (Arrington 1958:187). The crisis ended peacefully when the new territorial governor Alfred Cumming met with Brigham Young in Salt Lake City and determined to his satisfaction that the Mormons were not in rebellion (Arrington 1958:181). Soon the people were allowed to return to their homes.

**3.3.3.1.3.2 Railroad Era (1861-1919).** During the 1860s, Provo competed with other cities in Utah to be an important stopping place on the transcontinental railroad. Surveys made in 1859 by the U.S. Corps of Topographical Engineers had identified two possible crossings of the Wasatch Range: a southerly route by way of the Provo River and a northerly route by way of the Weber River (Galloway 1989:44). Union Pacific officials opted for the northerly route through Ogden, Corrine, and Promontory because it was shorter and had more water and timber available (Arrington 1958:260). Ogden quickly supplanted Provo as the second largest city in Utah after it became the territory's main railroad hub in 1869 (Cannon 1987:20). It was not until 1873 that Provo received a railroad connection when the Utah Southern Railroad, a company under the direction of Brigham Young, was completed from Salt Lake City to Provo (Arrington 1958:280, Robertson 1986:306). As the importance of rail shipping increased, other railroad lines were built through Provo, including the Denver and Rio Grande, which in 1883 linked Provo with Ogden on the north and Denver on the east. Interurban rail service began in July 1914, when the Orem Interurban line, operated the Salt Lake and Utah Railroad Corporation, started service between Salt Lake and Provo (Robertson 1986:283). The line would eventually stretch little over 76 miles from Salt Lake City to Payson, with a short spur to Magna (Robertson 1986:283).

The farmers and ranchers of Springville and Mapleton were also affected by arrival of the railroad, which allowed them to ship their produce and animals to eastern and western markets. In 1878, Milan Packard, a Springville merchant, financed the construction of a railroad to transport coal from Scofield to Springville (Haymond 1994:327). This railroad, known as the Utah and Pleasant Valley Railway Company, was incorporated on December 11, 1875 (Robertson 1986:296). The president of the company was C.W. Scofield (Robertson 1986:296). The rails was extended to Provo in 1880 (Robertson 1986:296). On June 14, 1882, the railroad was sold to the Denver and Rio Grande Western Railway Company (Robertson 1986:296).

From the founding of Salt Lake City and the Utah Territory, Brigham Young had sought to make the Mormons self-sufficient. He understood that without local industry, the Mormons would be dependent and at the mercy of the railroads and eastern industry. This program would become known as the "Cooperative Movement" (Arrington 1958:293-322). Parley's Creek began an example of the self-sufficiency Young was after. Parley's Creek powered "as many as twenty mills" at various points along the stream (Youngberg c 1983:7). Some of these mills were for processing flour, sugar, paper, and wool. Other industrial uses included; a barrel factory, nail factory, cotton gin, glass button factory, iron factory, chemical and powder works, match factory, tannery, and a cocoonery and mulberry farm (silk production)(Youngberg c 1983:20).

Of course, Young's plans for self-sufficiency were not confined to the Salt Lake Valley. In Provo, the program took the form of the Provo Woolen Mills, which became the largest and first industry in Provo. Construction of the mills began in 1870 and was completed in 1872 (Jensen 1924:269-276, Moffitt 1975:158-159). The mills benefited from the efficiency of railroad transportation, which allowed shipment of woolen products to other parts of Utah, as well as locations outside the territory (Cannon 1987:38). In 1918, at the peak of their productivity, the mills were severely damaged by fire (Jensen 1924:276, Moffitt 1975:160). Although the mills continued to operate until 1932, they never regained the prominence they had attained earlier (Arrington 1958:320).

While Provo continued as the commercial center of the valley, its real business continued to rest in its agricultural production. During this period, the Orem bench was utilized to grow fruit and other produce while the valley floor supported both animals and crops (Powell 1994:402). These farms consisted of uncultivated pasture lands, which were used for livestock production, and cultivated fields for the production of alfalfa, rye, oats, corn, barley, peas, beans, and sugar beets (Holzapfel 1999:57).

Another important development during this period was the founding of Brigham Young Academy in 1875 (Jensen 1924:347-358). The school experienced difficulties in 1877 after the death of Brigham Young, the institution's founder and main financial supporter (Jensen 1924:350). Another setback came in 1884, when a fire destroyed the school building (Jensen 1924:351). The future of the academy became more secure when it became officially affiliated with the LDS Church in 1896 (Cannon 1987:26-27). Through the years, the school has grown to become the largest private university in the country today (Cannon 1994:448).

Another important institution is the Springville Museum of Art, which was founded in 1903 as the Springville High School Art Gallery (Hague 1994:388). The museum, renamed the Springville Museum of Art in 1937, began when a statue of Paul Revere by Cyrus Edwin Dallin was reject by the city of Boston (Francis 1994:123; Hague 1994:388). Dallin gave the statue to his hometown of Springville (Francis 1994:123).

Provo continued to experience significant population growth during this period. In 1900, the city had just over 6,000 residents. Twenty years later, the population of Provo had grown to just over 10,000 people (Powell 1994:437). In Springville, population was 4,322 in 1900 and 3,010 in 1920 (Powell 1994:438). The population of Mapleton, on the other hand, remain somewhat more constant with 584 people in 1900 and 586 in 1920 (Powell 1994:436).

**.3.3.1.3.3 Decline, Depression, and World War II (1920-1945).** In October 1923, the Columbia Steel Company constructed an iron plant in Ironton, between Provo and Springville. This produced a demand for iron ore and coal

at the plant, which came from Utah mines. Besides the iron, which was shipped to California for processing, the plant also produced coke for coal tar, ammonium sulphate, and benzol.

After World War I, the nation, including Utah, experienced a depression in agricultural prices, which began to recover towards the end of the 1920s. However, this situation worsened in the 1930s when the Great Depression settled over the nation and Utah. Many local farmers in the Provo area were forced to rely on their own crops, while other area residents found relief through various New Deal programs and the LDS Church welfare system (Cannon 1987:72). While neither organization could give full relief from the effects of the depression, both contributed in their ways. The federal government managed to provide some new jobs in the form of the Works Progress Administration and the Public Works Administration, which completed a variety of projects in Provo during the Great Depression, including street paving, sewer lines, waterworks, and a city library (Moffitt 1975:284-285).

As World War II raged in both Europe and Asia, the nation began a gradual recovery from the effects of the Great Depression. While there is little doubt that the United States entry into the fight contributed to the nation's full recovery, the national economy was starting to rebound. Utah's economy benefited from the establishment of Hill Air Field, the Defense Depot Ogden, and the Naval Ordnance Depot. In 1941, prior to U.S. entry into the War, Provo was the site selected for the construction and operation of a new industrial facility, Geneva Steel Works, which provided employment for area residents and strengthened the local economy (Cannon 1987:73).

During this period, Springville and Mapleton changed little. The economy was still agricultural based, however more people were making homes in the two communities and commuting to jobs in Provo. In 1940, Mapleton had increased from 586 in 1920 to 907 residents (Powell 1994:436). In Springville, the population grew from 3,010 in 1920 to 4,796 in 1940 (Powell 1994:438).

**3.3.3.1.3.4 Post-War (1945-present).** The recent history of Provo has been characterized by rapid population growth, the development of a strong manufacturing and service economy, and the continuing importance of Brigham Young University to the community. In the 1970s, Provo regained its position as the second largest city in Utah, surpassing Ogden in population. The 1990 census recorded 86,835 people in Provo, 13,950 in Springville, and 3,572 in Mapleton (Powell 1994:436-438). Much of this growth has been fueled by the development of a robust high technology oriented economy. Computer giant Novell, with facilities in Orem and South Provo, provides jobs for the area and pumps a significant amount of money into the local economy. This company prospered during the 1980s, increasing its revenue from less than \$4 million in 1983 to over \$81 million in 1986 (Cannon 1987:110).

Brigham Young University remains vital to Provo's economic, social and cultural life. It serves as an important employer, as well as a contributor to Utah Valley's cultural and recreational life through its programs and sporting events. In 1979, the university had an enrollment of 27,521 students and had developed an excellent academic reputation (Cannon 1987:32-33, Hanson 1981:130). The communities of Springville and Mapleton have grown substantially due to the many companies that have located operations in and around the immediate area.

**3.3.3.1.4 Southern Utah Valley (Spanish Fork, Payson, Santaquin).** Settlement of the Spanish Fork-Payson-Santaquin area occurred between 1850 and 1852 (Dixon 1974:1-2; Van Cott 1990:290, 331,349). The first settlement in this part of Utah Valley began in the area of Payson, which like Santaquin, followed the pattern of settlement set out by Brigham Young. Spanish Fork, as opposed to Payson and Santaquin, did follow the pattern and began as single homestead, which grew into a town.

**3.3.3.1.4.1 Settlement (1850-1865).** In the fall of 1850, Governor Brigham Young, president of the Church of Jesus Christ of Latter-day Saints (Mormon Church), sent four families from the Salt Lake Valley to settle the community of Peeteneet. The name of the settlement was selected in honor of Chief Peeteneet of the Ute Indian Tribe. When the town was incorporated in January 1853, the name was changed to Payson (Van Cott 1990:290).

Among the first settlers in Peeteneet were the James Pace family, the Andrew J. Stewart family, and Mr. and Mrs. John Courtland Searle (Dixon 1974:2). Mr. Searle soon completed the first irrigation ditch, known as Ditch #4, in the new settlement. Shortly thereafter, the leaders of the Mormon Church called for volunteers to join the settlers at Peeteneet, and to establish additional communities in the area. Within a few months, a company of nearly 200 men, women, and children were settled in Utah Valley (Dixon 1974:3).

Unlike Provo and Payson, Spanish Fork began as a single homestead and not as one of Brigham Young's organized settlements. In 1850, Enoch Reece and his family established a homestead along the Spanish Fork River bottoms in southern Utah County and was soon followed by other settlers into the area (Salmon 1994b:523). The original settlement was known as Palmyra and was located to the northwest of the current location of Spanish Fork City (Van Cott 1990:286). Spanish Fork City soon developed as an outgrowth of Palmyra. The two communities shared Fort Saint Luke, which was built at the mouth of Spanish Fork Canyon, as protection against attacks by the Ute Indians in the area. Palmyra began to diminish in size as its companion city grew. Within a few years Palmyra was incorporated into the larger settlement, and the name of the resulting community was changed to Spanish Fork after the nearby river (Van Cott 1990:349).

By mid 1851, a contingent of settlers, led by Benjamin Johnson, established a permanent camp at the future site of Santaquin (Salmon 1994a:488). The settlement was originally known as Summit City owing to its location on a summit between the Utah and Juab Valleys. The city was renamed Santaquin in 1856 in honor of San Pitch, a Ute Indian chief (Van Cott 1990:331). In 1855, a central fort was erected in Santaquin to provide protection against raids by the local Ute Indians (Salmon 1994a:488). Prior to this time, the settlers seeking protection abandoned settlement of Santaquin and moved to Fort Peeteneet. Upon construction of the fort at Santaquin, complete with a rock school house, the settlers returned to the area (Salmon 1994a:488).

This period encompasses the construction of several grist mills and saw mills in the area as well as development of the first county roads. Farming and lumbering became the two largest industries in the region and comprised the bulk of the area's economy. Attempts at establishing a silk industry in Santaquin around this time met with little success. Some of the original mulberry trees planted during this effort still survive in the area (Salmon 1994a:419).

In 1858, Mormon settlers recalled from California due to the "Mormon Rebellion", arrived in the area, resulting in the rapid growth of communities within Utah Valley. These settlers had been sent to California by Brigham Young several years earlier. However, as tensions mounted between the Federal Government and the Mormon Church, Young recalled the settlers to Utah to aid in the impending conflict. Many of those returning settled in Santaquin, Payson, and Spanish Fork (Dixon 1974:11). The return of the settlers to Utah provided additional soldiers to aid in the possible hostilities. The mass influx of people into the area created a shortage of employment in the new communities. To provide jobs for the unemployed, the local ward of the Mormon Church instituted a "Make Work" program, which enlisted the poor for construction of grist mills, road improvement projects, and other building projects (Dixon 1974:11).

A number of significant events occurred during this period including the construction of the first adobe house and community buildings in Payson and Santaquin (Dixon 1974:10; Salmon 1994a:488). Fort Peeteneet, begun in the center of Payson City around 1854, was nearly completed with a new adobe technology learned by Samuel Brannan while visiting a Mexican community in Southern California. Unfortunately, the fort was never completed. In 1856, the first adobe schoolhouse was constructed by Henry Nebeker near Payson. This schoolhouse served all of the children in the Payson and Santaquin area (Salmon 1994c:419).

Community development continued well into the early 1860s. This included the construction of numerous public buildings such as amusement and social halls, meeting houses, schools, and church tithing houses. Other developments, such as the fencing of farmland and the establishment of local newspapers also occurred during

this period. The Community Development Period came to a rapid, albeit temporary, halt in 1865 when the Black Hawk War commenced between the Ute Indians and the Mormon settlers. According to Dixon (1974:18), a smallpox epidemic swept through the local Ute camps in 1864-1865 killing hundreds of people. The Ute allegedly blamed the Mormon settlers for the sickness and death and set out to kill all white settlers.

While Dixon's contention of Ute revenge for the smallpox epidemic may hold some truth, it was not the primary cause of the Black Hawk War. Roughly one hundred miles to the east, in the Uintah Basin, Abraham Lincoln had established a reservation for the Ute Indians (Larson 1972:166). Understandably disgruntled by this action, the Utes resisted removal to the reservation. The situation escalated into violence when several Mormon settlers and a small group of Utes met near Manti to settle a dispute regarding cattle killed by starving Indians. Harsh words were spoken, and the Utes rode away promising revenge, which they fulfilled over the next five days by raiding settlements throughout northern Utah (Peterson 1994:44). Nearly two years of bloody raids and armed battles ensued before the conflict ended. White settlers throughout Utah moved from their small communities to the larger settlements around Heber City, Salt Lake, and Provo for protection.

**3.3.3.1.4.2 Railroad Era (1865-1919).** In 1864, O. H. Irish, U. S. Government Indian Superintendent, arranged to sign a treaty with Ute tribal leaders at a meeting held in Spanish Fork. The treaty stipulated that the Indians would cease raiding and move to a designated reservation in the Uinta Basin. In exchange, the government would construct schools and make yearly payments for thirty years to the Indians based on population (Tyler 1978:364). In accordance with the Spanish Fork Treaty, several large contingents of Ute Indians left the area for the reservation. However, attempts by white settlers and the federal government to hasten the removal of the Indians, primarily Utes, onto the reservation led to increased discontent and hostility among the remaining indigenous peoples. This tension, coupled with a smallpox epidemic, led to confrontations between the settlers and the Indians. This conflict became known as the Black Hawk War (Tyler 1978:365).

The Black Hawk War ended in early 1868 with the signing of a peace treaty between Chief Black Hawk, Mormon officials and government agents (Peterson 1994:44). Following the cessation of conflict, the settlers in Spanish Fork, Payson, and Santaquin once again turned their efforts toward improving their living conditions. Having spent much of the period prior to the war constructing many of the public facilities necessary for sustaining their communities, the settlers now concentrated on connecting their settlements and, more importantly, their industries to the outside world. This was accomplished through the construction of telegraph and rail lines.

In 1866, five years after the completion of the first transcontinental telegraph system, the Deseret Telegraph Company was created to connect Utah settlements to the east-west line via a north-south system, which ran through the state (May 1978:198-200). The Civil War, which raged in the east prevented the shipment of wires and other supplies, delaying completion of the Utah telegraph system. By the close of 1866, over 500 miles of line were operating throughout the state (May 1978:200). Provo, Springville, Spanish Fork, Payson, and Santaquin each had their own telegraph offices that were connected to the Utah line (Dixon 1974:19; May 1978:200).

In 1869, silver was discovered in the hills surrounding the town of Eureka some 15 miles west of Santaquin (Van Cott 1990:131). This discovery played an important role in the development of the towns of Spanish Fork, Payson, and Santaquin. Would-be prospectors heard of the discovery and rushed to the area. The miners required both equipment and sustenance, providing business opportunities for the merchants in the settler communities. The local merchants eagerly supplied both to the miners. As business at these settlement stores increased, many new stores and mercantile institutions were opened, including the largest store in the area, the Payson Cooperative Mercantile Institution (Dixon 1974:21).

The discovery of silver at Eureka precipitated another, more significant, development in the area. The cost of shipping silver ore to smelters, in Tooele, was prohibitively expensive, and severely diminished any profits gained by mining the silver. The demand for a more efficient means of transporting the ore grew stronger. In 1869, the same year as the silver strike in Eureka, the first transcontinental railroad was completed. This line ran east-west

and was located in Ogden, a fair distance north of Utah Valley. However, by 1875, the Utah Southern Railroad Company completed a set of tracks from the transcontinental line to the north near Ogden, running south through Salt Lake City to the communities of Payson and Santaquin. (Robertson 1986:306). This line later became part of the San Pedro, Salt Lake and Los Angeles Railroad (Dixon 1974:25). The arrival of the railroad provided a faster and more efficient means of transporting silver ore mined from the surrounding hills to distant smelters. However, ore still had to be transported by wagon from the mines to the station in Payson. Not until 1891 would spur lines connect the Eureka mines to the railroad main line.

In late 1891, and early 1892, the Tintic Range Railway Company completed a 44-mile long spur line from Springville through Payson to the mining community of Eureka (Robertson 1986:289). This connection allowed for direct and rapid transportation of silver ore mined from the surrounding hills to the Tooele and Murray smelters. This line also provided passenger service via a station at Payson.

Besides transporting ore to the smelters in Murray and Midvale, south of Salt Lake City, the railroad also provided a faster means of importing and exporting goods into the area and providing better passenger service. With this connection to larger markets for their goods, the local communities near the lines prospered. The railroad brought business ventures and helped expand existing stores and services. Among the new businesses that were established included new hotels, entertainment halls and theaters, opera houses, and dance halls. Growth and progress were not far behind the railroad. By 1890, the communities of Spanish Fork, Payson and Santaquin each had their own electric light system and fire departments (Salmon 1994a:488; 1994b:419; 1994c:523).

A number of developments occurred during this period which enhanced the agricultural industry in the area, as well. Several storage reservoirs and canal systems were completed during this period, which allowed for better control over the irrigation of the local crops (Dixon 1974:31-35). One of the more significant projects to be undertaken was the implementation of the Strawberry River Reclamation Project in 1900. This project was funded by the Federal Government and implemented by the newly formed Bureau of Reclamation. It was significant in that it was one of the first large-scale projects undertaken by the Bureau. The success or failure of the Strawberry Valley Reclamation Project would influence future projects (Sorensen 1990:86). One component of the Strawberry Project was the Strawberry Highline Canal. Built in 1916, the Strawberry Highline Canal provided better irrigation for the agricultural communities in the southern part of Utah Valley. Other improvements included those made to the power plant in Spanish Fork as part of the Strawberry Valley Reclamation Project and the construction of the Strawberry Highline Canal.

In 1903, construction commenced on an inter-urban electric railway from Salt Lake City to Payson (Carr and Edwards 1989:107-108). The electric railway, owned by financier W.C. Orem, took 13 years to build. The line, and its station in Payson, were completed in 1916, the same year as the completion of the Strawberry Irrigation Project (Dixon 1974:386; Carr and Edwards 1989:108).

Despite the improved water conditions, farmers in Payson and Santaquin met with severe difficulties during this period. Plagues of grasshopper (Mormon Crickets) in 1905 and 1906 virtually destroyed all of the crops in the area and left many farmers without a means of financial support (Dixon 1974:38). In 1907, a reservoir dam in Payson Canyon gave way, which resulted in substantial damage to several farms, as well as crops. The flood destroyed the grasshopper-weakened crops and deposited several inches of mud on large sections of farmland.

Between 1909 and 1918, several new industries were established in the current project area. These new industries included a flour mill that serviced farmers throughout the region, the Eagle Bottling Works, which produced soda pop, and a Utah-Idaho Sugar Company factory that produced granulated sugar from local crops of sugar beets (BILS 1915:154-158, 239). The Utah-Idaho Sugar Company operated from 1913 to 1925. It finally ceased production around 1925 owing to a decrease in sugar beet cultivation (Dixon 1974:41). With the United States' entry into World War I, the national and Utah economies boomed as the demand for war goods and food stuffs increased to meet demand. However, once the war in Europe ended, the national economy passed through a quick

depression-recovery cycle. Unfortunately, due to Utah's lack of industrialization, its economy was a little slower to recover than that of the rest of the nation (Alexander 1978:463).

**3.3.3.1.4.3 Decline, Depression, and World War II (1920-1945).** In Utah, the economic depression caused by the end of World War I, continued into 1922. This minor depression significantly affected agricultural, as well as mining and what little manufacturing existed in the state (Alexander 1978:463-464). Since the state's economy was mostly based upon agriculture, the state's economy was slower to recover than other states were manufacturing was able to take up some of the slack (Alexander 1978:464). In 1922, the economic situation began to improve. While mining started to show advances, the biggest changes came in the restoration of the iron industry and the new tourist industry (Alexander 1978:470-471).

Columbia Steel Company opened an iron plant in Ironton, an area between Provo and Springville. The establishment of this plant in Utah Valley stimulated other industries, such as iron ore and coal production, as well as the laying of new railroad tracks to deliver the ore and coal to Ironton. In addition, other companies that used iron for their products located in and around the Ironton plant (Alexander 1978:470).

Despite the slight down turn in the agricultural economy, the automobile, airplane and trains were making the state more accessible to tourists. Roads were being improved at a rapid rate and the public was taking advantage of their new found freedom of the open roads. This increase in tourism stimulated the number of service oriented business, such as cafes, hotels, and motels, in addition to taxis service and bus service. By 1928, the number of registered vehicles in Utah reached 100,000 (Alexander 1978:469-470). The towns of Spanish Fork, Payson and Santaquin lay along the main north-south corridor through the state, US Highway 89. However, the Stock Market Crash in October 1929, changed everything.

Despite popular belief, Utah, with an economy based heavily on mining and agriculture, was one of the states hardest hit by the vagaries of the Great Depression (McCormick 1994:136). The communities of Spanish Fork, Payson, and Santaquin were no exception. The bottom fell out of the stock market, which caused prices for goods and produce to plummet to all time lows. The prices people were will to pay for goods and food stuffs could not cover their production. Throughout the early 1930s, the residents of these small settlements struggled for survival. With little or no place to sell their goods, many people suffered to meet everyday living expenses let alone cover the cost of producing crops and raising animals (McCormick 1994:136).

Panic gripped much of the nation and a run on bank and other savings institution was not uncommon. Banks and other saving institutions in Utah were no exceptions. In 1932, several banks in the area failed and many depositors lost their entire savings (Dixon 1974:47). In order to stave off a run, some banks posted notices, such as the Church of Jesus Christ of Latter-day Saints, who held most of the stock in Zion's Savings Bank and Trust Company (Zion's Bank). The management of Zion's Bank posted notices on their doors to let their depositors and customers know that they funds were secure (McCormick 1994:137). However, this did not always prevent a run.

The Federal Government intervened and the nation began its slow recovery. The establishment of several work-producing programs such as the Civilian Conservation Corps (CCC) and the Works Projects Administration (WPA) provided employment to many needy people and ultimately led to the construction of numerous public facilities. Within the current project area, the CCC and WPA were responsible for improving and upgrading roadways and parks, the establishment of school lunch programs, and the construction of hospitals, schools, and sewer systems (Dixon 1974:48-51). Even as national and local economies were recovering, improvement projects came to a rather abrupt halt as the nation entered the World War II conflict.

Few, if any, community improvement projects were undertaken during this period as much of the area's resources were shipped away to assist in the war effort. Despite the cessation of government-funded employment projects owing to the war, the economy of the area continued improving. This recovery was the result of a wartime economy in which the resources of the region, agricultural as well as mineral, were in high demand. However,

some products, such as sugar and gasoline, were still rationed in the area (Launius 1994:645-647). Commercial development slowed and few new businesses opened in any of the communities.

**3.3.3.1.4.4 Post-War (1945-present).** The communities of Spanish Fork-Payson-Santaquin have continued to grow during the Post-War Period. While Spanish Fork, with a 1990 population of 11,272 residents, has taken on a more urban appearance, Payson and Santaquin have remained rural (Salmon 1994b:524). The economy of Spanish Fork is far more commercially based than that of Payson or Santaquin. Truck stops, restaurants, motels, and shopping malls comprise much of the community's economy. Conversely, Payson and Santaquin rely on the livestock and agricultural industries for most of their income. Fruit orchards and cattle ranches cover much of the land within these two communities. The area's reliance on agriculture has led to much improved irrigation systems in the region.

The agricultural industry is not the only significant employer in the area. A locally based medical center, Mountain View Hospital, provides employment for roughly 400 Santaquin, Payson, and Spanish Fork residents. In 1990, Santaquin and Payson boasted populations of 9,510 and 2,386 respectively (Salmon 1994a:489; Salmon 1994c:419). Despite remaining a more rural community, Payson, like Spanish Fork, has developed into a commuter city with a large percentage of its residents working in the larger, more metropolitan, Provo-Orem area.

### **3.4 Cultural Resource Sites**

The inventory of the ULS project area resulted in identification and recordation of 255 sites and 7 isolated finds. These sites were recorded in two distinct methods, at the reconnaissance level and at the intensive level (Class III). As such, the results as presented here will be separated by these types of surveys as well as by Alternative.

#### **3.4.1 Spanish Fork Canyon-Provo Reservoir Canal Alternative (Proposed Action)**

##### **3.4.1.1 Intensive Archaeological Inventory Results**

The archaeological survey of the Sixth Water Power Facility, Substation and Transmission Line corridor resulted in the location of two historic sites and two isolated finds. The first historic site, 42Ut1400, is a historic trash scatter measuring 88 by 82 feet. This site includes greater than 100 deteriorated can fragments, in addition to many glass fragments of all colors and miscellaneous metal artifacts. The second historic site is the historic Sheep Creek Road. The segment recorded measures approximately 1.98 miles. Much associated glass and metal debris is scattered along the road. One isolated find consists of a corrugated metal pipe water control feature. This feature appears to divert water from Sheep Creek to an alternative channel. The second isolated find consists of a scatter of approximately five cans situated near Sheep Creek Road.

The survey of the Santaquin-Mona Reservoir Pipeline resulted in two isolated finds. Isolate 1 is a pink quartzite, secondary flake and Isolate 2 is a finely worked white chert biface tip fragment. The survey of the Mapleton-Springville Lateral Pipeline resulted in one historic site (42Ut471). Site 42Ut471 is the Mapleton-Springville Lateral. The canal was constructed in 1918 and is a part of the Strawberry Valley Project. Site 42Ut471 begins in Spanish Fork Canyon and extends north-northwest to Hobble Creek, east of Springville. The length of the canal is approximately 6.75 miles. It has an average width of 4 feet and a water depth of 2.5 feet. The canal is concrete lined in some sections and earthen in others. This site was originally recorded in 1981. Sagebrush is creating an updated site recordation for this site.

### 3.4.1.2 Reconnaissance Level Inventory Results

The reconnaissance level inventory through Orem and Provo cities identified and recorded 12 historic properties, which included two buildings listed on the National Register of Historic Places. Eleven of the properties are located in Provo City while only one residence is situated in Orem City. These properties range in date from 1890 to 1950 and represent a variety of styles and types of buildings. Two of the properties (1076 E Center Street and 1079 E Center Street), as mentioned above, are listed on the NRHP. These buildings, an 1890 Victorian (Physician's Quarters) and a 1934 Art Deco (Director's Residence), are part of the Utah State Mental Hospital. Located on the west end of the hospital property they are situated across the street from one another. Table 3-3 shows each of these properties along with their address, date of construction, and their style and type of construction.

<b>Address</b>	<b>Date</b>	<b>Style/Type</b>	<b>Address</b>	<b>Date</b>	<b>Style/Type</b>
1093 E. 800 N., Orem (A)	1940	Min Traditional/Other	496 E. 4525 N., Provo (A)	1950	Ranch/Early Ranch w/gar
Provo Reservoir Canal (A)	c1900	Canal	440 E. 4525 N., Provo (A)	1950	Ranch/Early Ranch w/gar
1076 E. Center Street, Provo (A)	1890	Vic Eclectic/Central Blk	388 E. 4525 N., Provo (C)	1950	Min Traditional/WWII Era
1079 E. Center Street, Provo (A)	1934	Art Deco/Cen Blk/wings	4510 N. Cyn Rd, Provo (A)	1950	Rambler/Early Ranch
997 E. Center Street, Provo (A)	1935	Colonial Revival/PC	2255 S. State St., Provo (A)	1920	Rustic/Commercial Garage
2109 N. 1450 E., Provo(A)	1890	Victorian/Central Blk	2225 S. State St., Provo (C)	1930	Min Traditional/Contemp.
550 E. 4525 N., Provo (A)	1950	Min Trad/WWII Era	Provo Bench Canal (A)	c1890	Canal
5600 N. Provo River (A)	c1910	Pony Truss Bridge	West Union Canal (A)	c1890	Canal

The reconnaissance level inventory through Springville City identified and recorded 115 historic properties along 400 East. The majority of these properties are located within the Springville Historic District, which begins at approximately 400 North and terminates at about 800 South. The properties in this area range in date from 1870 to 1950 and represent a very wide variety of styles and types of buildings. While many of the properties face 400 East, a few of the properties are located at intersections that often face the cross street rather than 400 East. Table 3-4 shows each of these properties along with their address, date of construction, and their style and type of construction.

**Table 3-4  
Springville Historic Properties**

<b>Address</b>	<b>Date</b>	<b>Style/Type</b>	<b>Address</b>	<b>Date</b>	<b>Style/Type</b>
1377 S. 400 E. (A)	1920	20 <sup>th</sup> Century/Bungalow	415 N. 400 E. (B)	1900	Spanish Colonial Revival/PC
1361 S. 400 E. (A)	1945	Minimal Traditional/WWII Era	397 E. 400 N. (A)	1940	Minimal Traditional/WWII Era
1197 S. 400 E. (B)	1890	Victorian Eclectic/Central Block	411 E. 400 N. (A)	1900	Victorian/Crosswing
1171 S. 400 E. (C)	1900	20 <sup>th</sup> Century/Crosswing	385 N. 400 E. (C)	1940	Minimal Traditional/Early Ranch
1155 S. 400 E. (A)	1930	Colonial Revival/Bungalow	373 N. 400 E. (A)	1925	Prairie School/Bungalow
1113 S. 400 E. (A)	1900	Victorian/Central Block	365 N. 400 E. (C)	1925	Prairie School/Bungalow
1085 S. 400 E. (A)	1930	20 <sup>th</sup> Century/Bungalow	261 N. 400 E. (C)	1870	Vic Stick Style/Central Passage
987 S. 400 E. (A)	1875	Greek Revival/Central Passage	245 N. 400 E. (A)	1930	Colonial Revival/Period Cottage
975 S. 400 E. (A)	1920	Bungalow/Bungalow	389 E. 200 N. (A)	1900	Victorian Eclectic/Central Block
959 S. 400 E. (A)	1920	Prairie School/Bungalow	189 N. 400 E. (A)	1900	Greek Revival/Crosswing
913 S. 400 E. (A)	1910	20 <sup>th</sup> Century/Four-Square	165 N. 400 E. (A)	1925	Prairie School/Bungalow
415 E. 900 S. (B)	1890	Victorian/Central Passage	137 N. 400 E. (B)	1945	Minimal Traditional/Four-Square
875 S. 400 E. (A)	1950	Prairie School/Bungalow	395 E. 100 N. (A)	1880	Classical/Hall Parlor
851 S. 400 E. (A)	1930	20 <sup>th</sup> Century/Bungalow	91 N. 400 E. (C)	1900	Greek Revival/Crosswing
839 S. 400 E. (A)	1925	Colonial Revival/Bungalow	77 N. 400 E. (A)	1950	Rambler/Ranch with garage
837 S. 400 E. (A)	1920	Bungalow/Bungalow	35 N. 400 E. (A)	1925	Prairie School/Bungalow
815 S. 400 E. (A)	1880	Victorian/Central Passage	393 N. Center Street (A)	1925	Prairie School/Bungalow

**Table 3-4  
Springville Historic Properties**

<b>Address</b>	<b>Date</b>	<b>Style/Type</b>	<b>Address</b>	<b>Date</b>	<b>Style/Type</b>
797 S. 400 E. (A)	1930	Period Revival/Period Cottage	14 S. 400 E. (B)	1950	Ranch/Rambler
775 S. 400 E. (A)	1950	WWII Contemporary	30 S. 400 E. (A)	1930	Minimal Traditional/WWII Era
759 S. 400 E. (C)	1880	20 <sup>th</sup> Century/Hall Parlor	46 S. 400 E. (C)	1930	Greek Revival/Period Cottage
727 S. 400 E. (A)	1930	Period Revival/Period Cottage	70 S. 400 E. (A)	1950	Ranch/Rambler w/garage
707 S. 400 E. (A)	1930	Period Revival/Period Cottage	389 E. 100 S. (A)	1930	English Tudor/Period Cottage
689 S. 400 E. (A)	1930	Bungalow/Bungalow	110 S. 400 E. (A)	1880	Colonial Revival/Period Cottage
665 S. 400 E. (A)	1930	Period Revival/Period Cottage	136 S. 400 E. (A)	1920	Prairie School/Bungalow
625 S. 400 E. (A)	1945	Minimal Traditional/WWII Era	166 S. 400 E. (A)	1930	English Cottage/Period Cottage
601 S. 400 E. (A)	1890	Victorian Eclectic/Crosswing	391 E. 200 S. (A)	1925	Spanish Revival/Period Cottage
587 S. 400 E. (A)	1890	Victorian Eclectic/Crosswing	212 S. 400 E. (A)	1945	English Cottage/Ranch
515 S. 400 E. (A)	1930	20 <sup>th</sup> Century/Bungalow	244 S. 400 E. (A)	1925	Prairie School/Bungalow
507 S. 400 E. (A)	1925	Colonial Revival/Bungalow	268 S. 400 E. (A)	1935	English Cottage/Period Cottage
501 S. 400 E. (C)	1920	Bungalow/Bungalow	290 S. 400 E. (C)	1910	20 <sup>th</sup> Century/Warehouse
455 S. 400 E. (A)	1950	Minimal Traditional	390 E. 300 S. (B)	1890	Victorian/Crosswing
425 S. 400 E. (A)	1950	Minimal Traditional	360 S. 400 E. (A)	1925	Prairie School/Bungalow
419 S. 400 E. (A)	1950	Minimal Traditional	397 E. 400 S. (B)	1900	20 <sup>th</sup> Century/Enfamed Block
409 S. 400 E. (A)	1925	Colonial Revival/Period Cottage	502 S. 400 E. (C)	1890	Victorian/Cross wing

**Table 3-4  
Springville Historic Properties**

<b>Address</b>	<b>Date</b>	<b>Style/Type</b>	<b>Address</b>	<b>Date</b>	<b>Style/Type</b>
269 S. 400 E. (B)	1900	Bungalow/Bungalow	508 S. 400 E. (A)	1925	Prairie School/Bungalow
243 S. 400 E. (A)	1897	Victorian Eclectic/Crosswing	540 S. 400 E. (B)	1900	Victorian Eastlake/Crosswing
233 S. 400 E. (A)	1915	Colonial Revival/Other	580 S. 400 E. (C)	1930	Minimal Traditional/WWII Era
213 S. 400 E. (A)	1915	Prairie School/Four-Square	596 S. 400 E. (B)	1890	Victorian/Crosswing
205 S. 400 E. (A)	1915	Prairie School/Bungalow	600 S. 400 E. (B)	1915	Prairie School/Bungalow
201 S. 400 E. (A)	1925	Colonial Revival Bungalow	614 S. 400 E. (A)	1890	Victorian/Crosswing
101 S. 400 E. (C)	1890	Victorian Eclectic/Crosswing	668 S. 400 E. (A)	1890	Victorian Eclectic/Central Block
97 S. 400 E. (A)	1925	English Tudor/Period Cottage	696 S. 400 E. (C)	1880	Victorian/Crosswing
89 S. 400 E. (A)	1890	Victorian Eclectic/Crosswing	720 S. 400 E. (C)	1900	Victorian/Crosswing
69 S. 400 E. (C)	1925	Bungalow/Bungalow	740 S. 400 E. (A)	1880	Victorian/Hall Parlor
29 S. 400 E. (A)	1920	Prairie School/Bungalow	924 S. 400 E. (A)	1890	Victorian/Hall Parlor
10 N. 400 E. (A)	1930	Period Revival/Period Cottage	960 S. 400 E. (C)	1890	Victorian/Hall Parlor
44 N. 400 E. (A)	1940	Prairie School/Bungalow	980 S. 400 E. (A)	1925	Prairie School/Bungalow
66 N. 400 E. (A)	1950	Minimal Traditional/WWII Era	1048 S. 400 E. (A)	1890	Victorian/Hall Parlor
76 N. 400 E. (C)	1950	Minimal Traditional/WWII Era	1102 S. 400 E. (A)	1930	English Tudor/Period Cottage
84 N. 400 E. (A)	1925	Prairie School/Bungalow	1136 S. 400 E. (C)	1900	Victorian/Crosswing
90 N. 400 E. (C)	1950	Minimal Traditional/WWII Era	1174 S. 400 E. (B)	1880	Victorian/Saltbox

**Table 3-4  
Springville Historic Properties**

<b>Address</b>	<b>Date</b>	<b>Style/Type</b>	<b>Address</b>	<b>Date</b>	<b>Style/Type</b>
110 N. 400 E. (B)	1899	Victorian Eclectic/Central Block	1212 S. 400 E. (B)	1890	Period Revival/Other
130 N. 400 E. (A)	1910	Prairie School/Four-Square	1326 S. 400 E. (A)	1950	Minimal Traditional/WWII Era
140 N. 400 E. (A)	1950	Minimal Traditional/WWII Era	1340 S. 400 E. (C)	1940	Modern/Basement House
150 N. 400 E. (A)	1950	Minimal Traditional/WWII Era	1350 S. 400 E. (B)	1950	Minimal Traditional/WWII Era
184 N. 400 E. (A)	1950	Minimal Traditional/WWII Era	1368 S. 400 E. (C)	1890	Victorian/Crosswing
190 N. 400 E. (B)	1875	Victorian/Crosswing	1394 S. 400 E. (A)	1925	Prairie School/Bungalow
212 N. 400 E. (B)	1870	Greek Revival/Crosswing	1500 N. US-89 (A)	1930	20 <sup>th</sup> Century/Service Bay

The reconnaissance level inventory through Mapleton City identified and recorded 23 historic properties. These properties range in date from 1880 to 1950 and represent a wide variety of styles and types of buildings. All of these properties are aligned along 1600 west, which is also known as US-89, in Mapleton. The majorities of these properties are active farms and are therefore dispersed along the roadway. The only cluster of buildings occurs at Center Street, where several businesses are situated. Table 3-5 shows each of these properties along with their address, date of construction, and their style and type of construction.

**Table 3-5  
Mapleton Historic Properties**

<b>Address</b>	<b>Date</b>	<b>Style/Type</b>	<b>Address</b>	<b>Date</b>	<b>Style/Type</b>
1990 S. 1600 W. (A)	1925	Prairie School/Bungalow	326 N. 1600 W. (C)	1900	Victorian/Central Block
64 S. 1600 W. (B)	1925	Bungalow/Bungalow	256 N. 1600 W. (B)	1910	Victorian/Hall Parlor
10 S. 1600 W. (C)	1930	Min Traditional/WWII Era	175 S. 1600 W. (C)	1890	Victorian/Crosswing
33 N. 1600 W. (C)	1880	Victorian/Crosswing	1195 S. 1600 W. (B)	1940	Min Traditional/WWII w/gar

**Table 3-5  
Mapleton Historic Properties**

Page 2 of 2

Address	Date	Style/Type	Address	Date	Style/Type
91 N. 1600 W. (A)	1915	Bungalow/Temple Form	1615 S. 1600 W. (B)	1920	Arts & Craft/Bungalow
295 N. 1600 W. (A)	1953	Ranch/Rambler w/garage	1745 S. 1600 W. (B)	1910	20 <sup>th</sup> Century/Rectangular Blk
297 N. 1600 W. (A)	1950	Ranch/Rambler w/garage	1785 S. 1600 W. (B)	1920	20 <sup>th</sup> Century/Rectangular Blk
715 N. 1600 W. (A)	1945	Post WW II/Basement House	1801 S. 1600 W. (C)	1910	Bungalow/Bungalow
737 N. 1600 W. (A)	1930	Modern/WWII Cottage	1825 S. 1600 W. (A)	1945	Post WWII/Basement House
712 N. 1600 W. (A)	1950	Min Traditional/WWII w/gar	1985 S. 1600 W. (A)	1925	Arts & Craft/Bungalow
450 N. 1600 W. (C)	1890	Victorian/Other	1127 N. 1600 W. (A)	1910	Prairie School/Four-Square
440 N. 1600 W. (B)	1910	20 <sup>th</sup> Cen/Early Service Station			

The reconnaissance level inventory through Spring Lake identified and recorded 12 historic properties. These properties range in date from 1910 to 1950 and represent a variety of styles and types of buildings. The majority of these properties were active farms dispersed along State Route 198 and US 6. Table 3-6 shows each of these properties along with their address, date of construction, and their style and type of construction.

**Table 3-6  
Spring Lake Historic Properties**

Page 1 of 2

Address	Date	Style/Type	Address	Date	Style/Type
12163 S. SR 198 (B)	1920	Arts & Crafts/Bungalow	1406 S. SR 198 (B)	1950	Min Trad/WWII Era w/garage
12077 S. SR 198 (B)	1920	Bungalow/Foursquare	11938 S. SR 198 (C)	1930	Spring Lake Irrigation System
12035 S. SR 198 (C)	1940	Min Traditional/WWII Era	11968 S. SR 198 (C)	1945	Min Tradition/WWII Era

**Table 3-6  
Spring Lake Historic Properties**

**Page 2 of 2**

<b>Address</b>	<b>Date</b>	<b>Style/Type</b>	<b>Address</b>	<b>Date</b>	<b>Style/Type</b>
1975 S. SR 198 (C)	1945	Min Traditional/WWII Era	12188 S. SR 198 (C)	1950	Early Ranch/Ranch
11873 S. SR 198 (B)	1935	Vernacular/WWII Era	12688 S. SR 198 (B)	1930	Barn and out buildings
11733 S. SR 198 (C)	1935	Early Ranch/Early Ranch	4035 W. 12400 S. (C)	1910	Arts & Crafts/Foursquare

This reconnaissance level inventory through Payson City identified and recorded 21 historic properties. These properties range in date from 1900 to 1950 and represent a variety of styles and types of buildings. Table 3-7 shows each of these properties along with their address, date of construction, and their style and type of construction.

**Table 3-7  
Payson Historic Properties**

**Page 1 of 2**

<b>Address</b>	<b>Date</b>	<b>Style/Type</b>	<b>Address</b>	<b>Date</b>	<b>Style/Type</b>
1145 S. Main Street (B)	1940	Vernacular/Barn	2053 W. Salem Canal Rd (C)	1950	Early Ranch/Early Ranch
1001 S. Main Street (A)	1935	English Tudor/Per Cottage	1979 W. Salem Canal Rd (B)	1910	Bungalow/Foursquare
770 S. Main Street (B)	1950	Min Trad/WWII Era w/gar	1945 W. Salem Canal Rd (B)	1900	Other/Hall-Parlor
814 S. Main Street (B)	1920	Arts & Crafts/Bungalow	1917 W. Salem Canal Rd (B)	1920	Other/Chicken Coop
1106 S. Main Street (B)	1925	Bungalow/Bungalow	1709 W. Salem Canal Rd (C)	1950	Min Tradition/WWII Era
1242 S. Main Street (C)	1945	Min Traditional/WWII Era	2030 W. Salem Canal Rd (B)	1890	Vic Eclectic/Crosswing
440 E. 700 S. (B)	1950	Early Ranch/Early Ranch	10787 S. 2100 W. (B)	1890	Vic Eclectic/Crosswing
460 E. 700 S. (B)	1900	Vernacular/Hall-Parlor	10639 S. 1600 W. (B)	1945	Min Trad/WWII Era w/gar

**Table 3-7  
Payson Historic Properties**

Address	Date	Style/Type	Address	Date	Style/Type
2247 W. Salem Canal Rd (A)	1925	Bungalow/Bungalow	9697 S. 400 E. (B)	1910	Bungalow/Foursquare
2197 W. Salem Canal Rd (B)	1945	Min Traditional/WWII Era	9658 S. 400 E. (B)	1945	Min Tradition/WWII Era
2189 W. Salem Canal Rd (B)	1910	Bungalow/Bungalow			

The reconnaissance level inventory through the Salem City identified and recorded five historic properties. These properties range in date from 1910 to 1950 and represent a variety of styles and types of buildings. All of these properties were aligned along Salem Canal Road. The majorities of these properties are active farms and were therefore dispersed. Table 3-8 shows each of these properties along with their address, date of construction, and their style and type of construction.

**Table 3-8  
Salem City Historic Properties**

Address	Date	Style/Type	Address	Date	Style/Type
1493 W. Salem Canal Rd (B)	1950	Min Traditional / WWII Era	307 W. Salem Canal Rd (A)	1915c	Ranch/Bungalow
1485 W. Salem Canal Rd (C)	1920/50	Other/Agriculture	1530 W. Salem Canal Rd (C)	1950	Min Tradition/WWII Era
415 W. Salem Canal Rd (A)	1910	Bungalow/Bungalow			

This reconnaissance level inventory north of Salem City identified and recorded seven historic properties. These properties range in date from 1915 to 1950 and represent a variety of styles and types of buildings. Four of the properties were active farms aligned along 8800 South 1600 West while the remaining were located along 800 East. Table 3-9 shows each of these properties along with their address, date of construction, and their style and type of construction.

**Table 3-9  
North of Salem City Historic Properties**

<b>Address</b>	<b>Date</b>	<b>Style/Type</b>	<b>Address</b>	<b>Date</b>	<b>Style/Type</b>
814 E. 8800 S. (A)	1940	Min Traditional/WWII Era	9021 S. 800 E. (A)	1915	Bungalow/Bungalow
998 E. 8800 S. (A)	1950	Min Traditional/WWII Era	9009 S. 800 E. (A)	1945	Min Tradition/WWII Era
1012 E. 8800 S. (A)	1950	Min Traditional/WWII Era	8845 S. 800 E. (B)	1950	Other/Barns
1028 E. 8800 S. (A)	1950	Min Trad/WWII Era w/garage			

### **3.4.1.3 Spanish Fork Canyon**

The segment of the project area paralleling U.S. Highway 6, from Diamond Fork Canyon (MP 184.3) to Moark Junction (MP 178), was previously surveyed as part of several cultural resource projects. As a result, no inventory was undertaken during the current project. These inventories include Allison, et al. 1996; Rust and Billat 2000; Fergusson 2000; and Elsken 2004. The highway right-of-way on the north side of the highway from MP 178 to MP 184.3 was surveyed by JBR Consultants (Rust and Billat 2000) and Baseline Environmental (Allison et al. 1996). The right-of-way on the south side of the highway was surveyed by SWCA from MP 178 to MP 184.3 (Fergusson 2000; and Elsken 2004). In addition, a second SWCA project was undertaken of a linear corridor outside of the existing right-of-way, extending out 250 feet from the centerline of the highway on both sides.

Nine new and previously recorded archaeological sites were located during these surveys along this portion of US Highway 6. They include site 42Ut362, the historic Castilla Warm Springs resort site; 42Ut469, a historic diversion dam located south of US Highway 6 and the Rio Grande Railroad on the Spanish Fork River; 42Ut471, the historic Mapleton Lateral Canal; 42Ut472, the historic Mapleton Siphon; 42Ut501, a historic homestead; 42Ut1125, the Rio Grande Western Railroad; 42Ut1127, the Illinois Powder Railroad Spur; 42Ut1386, historic earthen berms; and 42UT1387, a historic rock retaining wall. The historic diversion dam, 42Ut469, is located on the south of US Highway 6, which places the structure outside the current area of potential effects. The Mapleton Lateral Canal, 42Ut471, is an eligible property, which is described and discussed in each of the four alternatives. The Mapleton Siphon, 42Ut472, is an eligible property, which is located outside the current area of potential effect. Both the historic homestead, 42Ut501, and the Denver and Rio Grande Western Railroad, 42Ut1125, are located on the south side of US Highway 6, which places both properties outside the current area of potential effect. The Illinois Powder Railroad Spur, 42Ut1127, was recommended as not eligible to the NRHP by SWCA. Both the earthen berms, 42Ut1386, and the rock retaining wall, 42Ut1387, were determined to be ineligible for the NRHP.

### **3.4.2 Bonneville Unit Water Alternative**

#### **3.4.2.1 Intensive Archaeological Inventory Results**

The archaeological survey of the Sixth Water Power Facility, Substation and Transmission Line corridor resulted in the location of two historic sites and two isolated finds, which is discussed in Section 3.4.1.2.

The survey of the Mapleton-Springville Lateral Pipeline resulted in locating one historic site (42Ut471), which is discussed in Section 3.4.1.2.

### 3.4.2.2 Reconnaissance Level Inventory Results

The Hobble Creek channel from the Mapleton Lateral west to Utah Lake is crossed 23 times by various transportation structures including, motorized vehicles, railroads, and pedestrians. The pedestrian crossings consist of one of two types of concrete sidewalks or metal grates with rails. These features are always associated with the transportation structures, which consist of either bridges or box culverts. The fourteen historic transportation structures inventoried consisted of seven concrete slab bridges along with a concrete arch bridge, three concrete “T” beams, two steel stringers and one box culvert. These structures and their locations are shown in Table 3-10.

**Table 3-10  
Historic Transportation Structures that Cross Hobble Creek in Springville City**

<b>Crossing</b>	<b>Address</b>	<b>Description</b>	<b>Photo No.</b>
3	900 South 1100 East	c 1940 Concrete Slab	Roll 14 - 7/8
4	700 South 800 East	c 1940 Concrete Slab	Roll 14 - 9/10
6	400 South 500 East	c 1940 Concrete Slab	Roll 14 - 13/14
7	250 South 400 East	1935 Concrete “T” Beam	Roll 14 - 15
8	200 South 300 East	1935 Concrete “T” Beam	Roll 14 - 16
10	100 South 200 East	1935 Concrete Arch with concrete rails	Roll 14 - 18/19
13	25 North Main Street	c 1940 Concrete Box	Roll 14 - 24
14	94 North 100 West	c 1935 Concrete “T” Beam ?	Roll 14 - 25
15	150 South 200 West	c 1930 Concrete Slab	Roll 15 - 1/2
17	300 North 400 West	c 1940 Steel Stringer Railroad Bridge – Single Track	Roll 15 - 5
18	600 North 1200 West	c 1940 Steel Stringer	Roll 15 - 6/7
20	750 North 1800 West	4 Span Concrete Block/Slab Bridge – Single Railroad Track	Roll 2 - 10
21	750 North 1800 West	3 Span Concrete Slab Bridge - 3 Railroad Tracks	Roll 2 - 9
22	750 North 1800 West	West Frontage Road - Concrete Slab Bridge	Roll 2 - 11

### 3.4.3 No Action Alternative

None.

### 3.5 NRHP Eligibility Criteria

For this evaluation, impacts on cultural resources are considered significant if the resources are eligible for inclusion in the NRHP or have already been listed. Eligibility to the NRHP is defined by the federal legislation in 36 CFR Part 60.4, which states that consideration is given to:

“districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association, and; (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past; or (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or (d) that have yielded, or may be likely to yield, information important in prehistory or history.”

### 3.6 Spanish Fork Canyon-Provo Reservoir Canal Alternative (Proposed Action)

#### 3.6.1 Construction Phase

##### 3.6.1.1 Sixth Water Power Facility, Substation and Transmission Line

###### 3.6.1.1.1 NRHP Eligibility Determinations

A. Archaeological Sites. The historic cabin foundation and features known as the First Water Cabin (42Ut649) were the remains of a Spanish Fork Livestock Association herder's cabin. This site appeared to be older than fifty years of age and retained its integrity of location, design, setting, feeling and association. However, after considerable research, little could be found concerning the history of the Spanish Fork Livestock Association and, none concerning its association with livestock activities within the Uinta National Forest. As such, it is likely that further research on this site would provide only limited information regarding early 20<sup>th</sup> century livestock herding and occupation of the forest. As such, the site is recommended NOT eligible to the NRHP under criteria A, B, or C. There is, however, potential for subsurface deposits to exist on this site. As such, it is recommended ELIGIBLE to the NRHP under criterion D.

Site 42Ut1400, located in Spanish Fork Canyon, north of SR 6 between Sheep Creek and Sheep Creek Road, was a historic trash scatter measuring 20 by 33 meters. The majority of artifacts were centrally located within the site boundaries. This concentration measures approximately 6 by 9 meters. Artifacts located at this site include greater than 100 deteriorated can fragments, most of which appear to be sanitary cans; glass fragments of clear, amethyst, aqua and pink; 4 whiteware fragments; 3 porcelain doll fragments; 1 teacup fragment; one metal buckle; and 4 shot gun shells. Because of this site's association with the recommended eligible Sheep Creek Road, site 42Ut1400 is recommended eligible under criterion D, as it has the potential to yield information important in history about the Sheep Creek Road.

B. Historic Properties/Sites. The historic Sheep Creek Road was a segment of road that runs northeast-southwest along Sheep Creek in the Uinta National Forest. The segments recorded measure 1.9 miles in length. On the 1884 General Land Office (GLO) map for the area, Sheep Creek was identified as Strawberry Canyon Creek and the road segment was unnamed. By 1916, the creek had been renamed to Sheep Creek. Because the road historically appears to have served as an important corridor of travel between southern Utah Valley and Vernal, the site was recommended eligible under criterion A.

### ***3.6.1.2 Upper Diamond Fork Power Facility***

#### **3.6.1.2.1 NRHP Eligibility Determinations**

A. Archaeological Sites. None.

B. Historic Properties/Sites. None.

### ***3.6.1.3 Spanish Fork Canyon Pipeline***

#### **3.6.1.3.1 NRHP Eligibility Determinations**

A. Archaeological Sites. The Castilla Warm Springs Spa (42Ut362) consists of a number of concrete foundations and associated features. This site was a historic recreation site that operated at the turn of the twentieth century through the 1930s. This archaeological site maintains its integrity of location, setting, materials, feeling and association, and was recommended eligible for the NRHP, under criteria A and D.

B. Historic Properties/Sites. None.

### ***3.6.1.4 Spanish Fork-Santaquin Pipeline***

#### **3.6.1.4.1 NRHP Eligibility Determinations**

A. Archaeological Sites. None.

B. Historic Properties/Sites. The historic Strawberry-Highline Canal in Payson, the Salem Canal in Payson and Salem, and the Mill Race Canal in Spanish Fork are all older than fifty years of age and appear to maintain their “integrity of location, design, settings, materials, workmanship, feeling, and association.” Therefore, these canals are recommended eligible for the NRHP, under criteria A and C.

In addition, there are two historic residences in Payson (2247 W. Salem Canal Road, 2189 W. Salem Canal Road) that may be affected by the proposed project. These properties are older than fifty years of age and maintain their “integrity of location, design, setting, materials, workmanship, feeling and association.” Therefore, these properties are recommended eligible for the NRHP, under criterion C.

The pipeline would also have an adverse effect upon two farmsteads in Salem, 9697 S. 400 E., and 9658 S. 400 E. These farms are older than fifty years of age and maintain their “integrity of location, design, setting, materials, workmanship, feeling, and association.” Therefore, these properties are recommended eligible for the NRHP, under criterion C.

### ***3.6.1.5 Santaquin-Mona Reservoir Pipeline***

#### **3.6.1.5.1 NRHP Eligibility Determinations**

A. Archaeological Sites. None.

B. Historic Properties/Sites. The Summit Creek Reservoir drain structure was a historic feature of the Summit Creek Reservoir, which is older than fifty years of age. The drain structure is a man made feature that maintains “integrity of location, design, setting, materials, workmanship, feeling and association.” Therefore, this structure was recommended eligible for the NRHP, under criterion C.

### ***3.6.1.6 Mapleton-Springville Lateral Pipeline***

#### **3.6.1.6.1 NRHP Eligibility Determinations**

A. Archaeological Sites. None.

B. Historic Properties/Sites. This property is an historic canal, 42Ut471, which is older than fifty years of age and maintains its “integrity of location, design, setting, materials, workmanship, feeling and association.” Therefore, this structure was recommended eligible for the NRHP, under criteria A and C.

### ***3.6.1.7 Spanish Fork-Provo Reservoir Canal Pipeline***

#### **3.6.1.7.1 NRHP Eligibility Determinations**

A. Archaeological Sites. None.

B. Historic Properties/Sites. The property consisted of a circa 1910 historic pony truss bridge, which crossed the Provo River at 5600 North in Provo. This bridge is older than fifty years of age and maintains its “integrity of location, design, setting, materials, workmanship, feeling, and association.” Therefore, this structure was recommended eligible for the NRHP, under criterion C.

The project would cross the historic West Union Canal in Provo, and the Provo Bench Canal and Provo Reservoir Canal in Orem, which are historic canals. These canals are older than fifty years of age and maintain their “integrity of location, design, setting, materials, workmanship, feeling, and association.” Therefore, these structures were recommended eligible for the NRHP, under criterion C.

## **3.7 Bonneville Unit Water Alternative**

### **3.7.1 Construction Phase**

#### ***3.7.1.1 Sixth Water Power Facility, Substation and Transmission Line***

See Section 3.7.1.1 for NRHP eligibility determination.

#### ***3.7.1.2 Upper Diamond Fork Power Facility***

See Section 3.7.1.2 for NRHP eligibility determination.

#### ***3.7.1.3 Spanish Fork Canyon Pipeline***

See Section 3.7.1.3 for NRHP eligibility determination.

#### ***3.7.1.4 Spanish Fork-Santaquin Pipeline***

See Section 3.7.1.4 for NRHP eligibility determination.

### ***3.7.1.5 Mapleton-Springville Lateral Pipeline***

See Section 3.7.1.6 for NRHP eligibility determination.

## **3.8 No Action Alternative**

Since the alternative would not change the baseline conditions, there would be no impacts caused by the operation of the ULS under this alternative.

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## **Chapter 4**

### **Effects and Recommendations**

#### **4.1 Effects Criteria**

Federal legislation in 36 CFR Part 800.4 and 800.5 states that cultural resource assessments of federal “undertakings” of eligible properties should result in one of three determinations; (a) no effect; (b) no adverse effect, i.e., one or more historic properties will be affected, but the historic qualities that make them significant will not be harmed; or (c) adverse effect, i.e., the undertaking will cause harm to one or more historic properties.

Ultimately, eligibility of sites was determined by the Department of the Interior (DOI) in consultation with the federal land owning agency (as applicable) and the State Historic Preservation Office (SHPO). The DOI, in consultation with the federal land owning agency (as applicable), the SHPO and the Advisory Council on Historic Preservation (ACHP), determined the significance of impacts and treatment planning related to these resources. If the eligibility of a site was not determined, it was assumed for the purpose of this analysis that the site was eligible. Impacts on cultural resources were considered significant if either of the following occurred.

- Disturbance or alteration of cultural resource site surfaces and/or features occurred, including traditional cultural properties; excavation, burial or inundation of any cultural resource that is listed in or is eligible for nomination to the NRHP
- Alteration of surrounding topographic features cultural features that adversely affected the feeling, setting or association of a significant site

#### **4.2 Potential Effects Eliminated From Further Analysis**

##### **4.2.1 Traditional Cultural Properties and Sacred Sites Consultation**

Consultation was carried out with five Native American tribes within the region who could have a potential interest in development activity within the project area was undertaken over a period of several months. These tribes included the Northwestern Band of Shoshone Tribe, the Shoshone-Bannock Tribes, the Ute Indian Tribe, the Skull Valley Band of Goshute, and the Southern Paiute Indian Tribe. No comments were received from these tribes concerning traditional cultural properties nor sacred sites that may be located in or near the project area. Therefore, potential effects on traditional cultural properties and sacred sites have been eliminated from further analysis.

#### **4.3. Spanish Fork Canyon-Provo Reservoir Canal Alternative (Proposed Action)**

##### **4.3.1 Construction Phase**

###### ***4.3.1.1 Sixth Water Power Facility, Substation and Transmission Line***

###### **4.3.1.1.1 Site Effect Determinations**

A. Archaeological Sites. Construction would not affect the historic cabin (known as the First Water Cabin) and its

associated features (42Ut649) or Site 42Ut1400 (historic trash scatter) because the treatment plan would require flagging the sites before starting construction and briefing the contractor on procedures required to avoid the sites (see EIS, Chapter 1, Section 1.8.8.8). The treatment plan would stipulate that the sites would be flagged prior to the commencement of construction activities and that the construction contractor would be briefed on the procedures required to avoid the sites. Under these conditions, the “integrity of location, design, setting, materials, workmanship, feeling and association” would be maintained and therefore, the construction of the power line would have a “no effect” on these sites. To ensure that this commitment to avoid the sites is met, construction activities near the cabin and the trash scatter will be monitored by a qualified archaeologist.

B. Historic Properties/Sites. The Sheep Creek Road is a historic transportation corridor that would be used to transport materials and heavy equipment through the area. The treatment plan would require that the construction contractor be briefed on the historic significance of the road and the procedures required to preserve its historic integrity. Therefore, the “integrity of location, design, setting, materials, workmanship, feeling and association” would be maintained and the project would have “no effect” on the road.

### ***4.3.1.2 Upper Diamond Fork Power Facility***

#### **4.3.1.2.1 Site Effect Determinations**

A. Archaeological Sites. None.

B. Historic Properties/Sites. None.

### ***4.3.1.3 Spanish Fork Canyon Pipeline***

#### **4.3.1.3.1 Site Effect Determinations**

A. Archaeological Sites. This alternative would have an “adverse affect” on the Castilla Warm Springs Spa (42Ut362) historic archaeological site by construction of the pipeline through the area of the former spa. The placement of the pipeline through the site would alter the integrity of location, design, setting, materials, workmanship, feeling and association. Castilla Warm Springs (42Ut362) was determined eligible for the NRHP under criteria A and D. See Section 3.6.1.3.1 NRHP Eligibility Determinations, A. Archaeological Sites.

B. Historic Properties/Sites. None.

### ***4.3.1.4 Spanish Fork-Santaquin Pipeline***

#### **4.3.1.4.1 Site Effect Determinations**

A. Archaeological Sites. None.

B. Historic Properties/Sites. This alternative would have a “no adverse effect” on the historic Strawberry-Highline Canal in Payson, the Salem Canal in Payson and Salem, and the Mill Race Canal in Spanish Fork. The construction outlined in Chapter 1 (1.4.4.3:1-33) has stated that “All canal crossings would be constructed as open cuts using the pipe trench excavation technique during the non-irrigation season.” This construction technique would therefore require that each canal structure be breached. This breaching, however, is not considered significant enough to warrant an “adverse effect” determination.

The project would not adversely effect two historic residences in Payson (2247 W. Salem Canal Road and 2189 W. Salem Canal Road). The treatment plan would stipulate that the site would be flagged prior to the

commencement of construction activities and that the construction contractor would be briefed on the procedures required to avoid the site. Under these conditions, the “integrity of location, design, setting, materials, workmanship, feeling and association” would be maintained and therefore, the construction of the pipeline would have a “no adverse effect” on these sites.

The pipeline would have an adverse effect upon two farmsteads in Salem (9697 S. 400 E., and 9658 S. 400 E.) The pipeline construction activity would physically affect these historic residences and farms. Such activities would have an “adverse effect” upon the “integrity of . . . design, setting, materials, workmanship, feeling, and association” of these properties.

#### ***4.3.1.5 Santaquin-Mona Reservoir Pipeline***

##### **4.3.1.5.1 Site Effect Determinations**

A. Archaeological Sites. None.

B. Historic Properties/Sites. This pipeline would have an adverse effect on the Summit Creek Reservoir drain structure. The construction of the pipeline would require that the drain structure be breached, which would have an “adverse effect”. This construction technique would therefore alter the integrity of design, materials, and workmanship of the drain structure.

#### ***4.3.1.6 Mapleton-Springville Lateral Pipeline***

##### **4.3.1.6.1 Site Effect Determinations**

A. Archaeological Sites. None.

B. Historic Properties/Sites. This pipeline, which would replace the Mapleton Lateral with a pipeline, would have an “adverse effect” by altering the “integrity of . . . design, setting, materials, workmanship, feeling and association” of the historic canal.

#### ***4.3.1.7 Spanish Fork-Provo Reservoir Canal Pipeline***

##### **4.3.1.7.1 Site Effect Determinations**

A. Archaeological Sites. None.

B. Historic Properties/Sites. The construction plans, outlined in the EIS, Chapter 1, Section 1.4.4.4 indicate that a microtunnel would be constructed under the c 1910 historic pony truss bridge and Provo River at 5600 North in Provo. This method would not affect the “integrity of location, design, setting, materials, workmanship, feeling, and association” of either the bridge or the river bed. Therefore, this pipeline would not have an effect upon this property.

This pipeline would have an “adverse effect” on the historic West Union Canal in Provo. (This canal is covered with thick vegetation that has grown over the site for a number of years. This canal is located along a scenic trail and bike path, and the removal of this vegetation in one section would adversely affect the setting and feeling of this canal and the aesthetics of the trail.) The construction outlined in the EIS, Chapter 1 (Section 1.4.4.3) has stated that “All canal crossings would be constructed as open cuts using the pipe trench excavation technique during the non-irrigation season.” In addition, construction plans (EIS, Chapter 1, Section 1.4.4.2) state that the vegetation that covers the canal would be removed. These construction methods would therefore require that the

canal structure be breached and the vegetation removed, which would alter the “integrity of . . . design, setting, materials, workmanship, feeling, and association” of the canal.

Except for the removal of the vegetation, this same method of construction would be used in crossing the Provo Bench in Orem. Therefore, the impacts by the construction of the pipeline on this canal would be a “no adverse effect.”

The Provo Reservoir Canal in Orem would be adversely impacted by the placement of the pipeline immediately adjacent to the canal and along the back property lines of residences in northeast Orem for a distance of approximately 0.5 mile. This construction would alter the integrity of design, materials, and workmanship of a portion of the canal. This impact would be an “adverse effect.”

## **4.4 Bonneville Unit Water Alternative**

### **4.4.1 Construction Phase**

#### ***4.4.1.1 Sixth Water Power Facility, Substation and Transmission Line***

See Section 4.3.1.1 for site effect determination.

#### ***4.4.1.2 Upper Diamond Fork Power Facility***

See Section 4.3.1.2 for site effect determination.

#### ***4.4.1.3 Spanish Fork Canyon Pipeline***

See Section 4.3.1.3 for site effect determination.

#### ***4.4.1.4 Spanish Fork-Santaquin Pipeline***

See Section 4.3.1.4 for site effect determination.

#### ***4.4.1.5 Mapleton-Springville Lateral Pipeline***

See Section 4.3.1.6 for site effect determination.

## **4.5 No Action Alternative**

Since the alternative would not change the baseline conditions, there would be no impacts caused by the operation of the ULS under this alternative.

## **Chapter 5 Mitigation and Monitoring**

### **5.1 Spanish Fork–Provo Reservoir Canal Alternative**

#### **5.1.1 Mitigation**

Since the proposed project would have an impact upon known cultural resources, mitigation of these resources will be necessary. While project construction impacts located within the road prism where the project pipeline and power lines follow established roads and highways, it is anticipated that there will be no need for mitigation measures. However, should the construction corridor fall outside the road prism, measures may be necessary to mitigate the impacts to eligible historic properties. These measures for historic properties/sites could include:

1. Additional historical research and photographs, recordation and architectural descriptions
2. Historic American Engineering Record or Historic American Buildings Survey documentation
3. Excavation
4. All mitigation measures for effects to historic properties from the project will be addressed in the MOA with the SHPO.

Measures for archaeological properties/sites could include:

1. Test excavation
2. Full excavation

#### **5.1.2 Monitoring**

Since the project passes through some areas of cultural sensitivity, which could contain evidence of Native American occupation or other activity, it will be necessary to implement a construction monitoring program. It is anticipated that this program will consist of a combination of construction worker training, excavation monitoring and trench inspection. This program will specifically require the training of field supervisors and equipment operators in the recognition of cultural resource material and features. It will involve the monitoring of excavation in sensitive areas by qualified archaeologists. In addition, trench inspection will be carried out in culturally sensitive areas by qualified archaeologists.

### **5.2 Bonneville Unit Water Alternative**

#### **5.2.1 Mitigation**

Same as described under Section 5.1.1.

#### **5.2.2 Monitoring**

Same as described under Section 5.1.2.

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## **Chapter 6**

### **Unavoidable Adverse Impacts**

There would be no unavoidable adverse impacts as all effects would be mitigated.

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## **Chapter 7**

### **Cumulative Impacts**

There would be no cumulative impacts as all effects resulting from other projects would be mitigated for as required by law.

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## Glossary

**Affected environment.** The part of the environment that changes from a proposed change in operation or management.

**Alternative.** A proposition or situation offering a choice between two or more proposals, only one of which may be chosen. An opportunity for deciding between two or more courses or propositions.

**Baseline.** The set of starting conditions from which changes and impacts are quantified.

**Mitigate, mitigation.** To cause to become less severe or harmful; reduce impacts; actions to avoid, minimize, reduce, eliminate or rectify impacts to resources.

**Monitor.** To systematically and repeatedly measure conditions in order to track changes.

**Proposed Action.** The proposal or proposed project by sponsoring agent or proponent.

**Reclamation.** Returning disturbed land to a form and productivity that will be ecologically balanced and in conformity with a predetermined goal and land-use objective.

**Scoping.** Process established to incorporate public input on proposed activities, disclosed in a NEPA document.

**Standard Operating Procedures (SOPs).** Measures followed during construction, operation or maintenance of a project to avoid, minimize or rectify adverse impacts on natural resources and people.

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## Abbreviations and Acronyms

A	Eligible for the NRHP and an excellent representation of style and type
ACHP	Advisory Council on Historic Preservation
AERC	Archaeological-Environmental Research Corporation
AIRFA	American Indian Religious Freedom Act of 1978
ARCON	Archaeological Research Consultants
B	Eligible for the NRHP and a good representation of style and type
BYU	Brigham Young University
CCC	Civilian Conservation Corps
CRMS	Cultural Resource Management Services (Changed to OPA/BYU)
BLM	Bureau of Land Management
Reclamation	Bureau of Reclamation
C	Currently ineligible for the National Register of Historic Places
CLG	Certified Local Government
CUPCA	Central Utah Project Completion Act
D	Out of the historic period
DOI	Department of the Interior
E	Eligible for the National Register of Historic Places
GLO	General Land Office
HABS/HAER	Historic American Building Survey/Historic American Engineering Record
SCS	Utah Historic Computer System
iMACS	Intermountain Antiquities Computer System
JBR	JBR Environmental Consultants, Inc.
JSRIP	June Sucker Recovery Implementation Program
MESA	MESA Corporation
M&I	Municipal and Industrial
N	Not eligible for the NRHP
NAGPRA	Native American Graves and Repatriation Act of 1990
NCG	Nielson Consulting Group
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NRHP	National Register of Historic Places
OPA/BYU	Office of Public Archaeology, Brigham Young University
SHPO	State Historic Preservation Office
SUVMWA	South Utah Valley Municipal Water Association
SVP	Strawberry Valley Project
SWCA	SWCA, Inc. Environmental Consultants
U	No NRHP recommendations were made for this site.
UDOT	Utah Department of Transportation
ULS	Utah Lake System
UofU	University of Utah
USFS	United States Forest Service
USHPO	Utah State Historic Preservation Office
UTARC	Utah Archaeological Research Corporation
PA	Works Projects Administration
./PRS	Water & Power Resources Service

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***Utah Lake Drainage Basin  
Water Delivery System***

***Cultural Resources***

***Technical Report***

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***Appendix A***

**UHCS (Utah Historic Computer System)  
Reconnaissance Level Survey Forms**

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## RECONNAISSANCE FORM INDEX

<b>Recon Form Name &amp; Street</b>	<b>Alternative</b>	<b>Map No.</b>	<b>Map Segment</b>
Spanish Fork - 8800 South	Spanish Fork-Provo Reservoir Canal	5	Santaquin -1
Spanish Fork - 800 East	Spanish Fork-Provo Reservoir Canal	5	Santaquin -1
Salem - Salem Canal Road	Spanish Fork-Provo Reservoir Canal	6	Santaquin -2
Salem - Elk Ridge Drive	Spanish Fork-Provo Reservoir Canal	6	Santaquin -2
Salem - 2100 West	Spanish Fork-Provo Reservoir Canal	6	Santaquin -2
Payson - Salem Canal Road	Spanish Fork-Provo Reservoir Canal	6	Santaquin -2
Payson - 700 South	Spanish Fork-Provo Reservoir Canal	6	Santaquin -2
Payson - 400 East	Spanish Fork-Provo Reservoir Canal	6	Santaquin -2
Payson - Main	Spanish Fork-Provo Reservoir Canal	6	Santaquin -2
Spring Lake - SR-198	Spanish Fork-Provo Reservoir Canal	7	Santaquin -3
Spring Lake - 12400 South	Spanish Fork-Provo Reservoir Canal	7	Santaquin -3
Mapleton - 1600 West	Spanish Fork-Provo Reservoir Canal	12	Utah Valley -1
Mapleton - 1600 North	Spanish Fork-Provo Reservoir Canal	12	Utah Valley -1
Mapleton - US-89	Spanish Fork-Provo Reservoir Canal	12	Utah Valley -1
Provo - State Street	Spanish Fork-Provo Reservoir Canal	13	Utah Valley -2
Provo - 1450 East	Spanish Fork-Provo Reservoir Canal	14	Utah Valley -3
Provo - Center Street	Spanish Fork-Provo Reservoir Canal	14	Utah Valley -3
Orem - 800 North	Spanish Fork-Provo Reservoir Canal	15	Utah Valley -4
Provo - Canyon Road	Spanish Fork-Provo Reservoir Canal	15	Utah Valley -4
Provo - 4525 North	Spanish Fork-Provo Reservoir Canal	15	Utah Valley -4
Springville - 400 East	Spanish Fork-Provo Reservoir Canal	17-18	Springville Recon - 1-4
Springville - 400 North	Spanish Fork-Provo Reservoir Canal	17	Springville Recon - 1
Springville - 300 North	Spanish Fork-Provo Reservoir Canal	17	Springville Recon - 1
Springville - 200 North	Spanish Fork-Provo Reservoir Canal	17	Springville Recon - 1
Springville - 100 North	Spanish Fork-Provo Reservoir Canal	17	Springville Recon - 1
Springville - Center Street	Spanish Fork-Provo Reservoir Canal	17	Springville Recon - 1
Springville - 100 South	Spanish Fork-Provo Reservoir Canal	18	Springville Recon - 2
Springville - 200 South	Spanish Fork-Provo Reservoir Canal	18	Springville Recon - 2
Springville - 300 South	Spanish Fork-Provo Reservoir Canal	18	Springville Recon - 2
Springville - 400 South	Spanish Fork-Provo Reservoir Canal	18	Springville Recon - 2
Springville - 900 South	Spanish Fork-Provo Reservoir Canal	19	Springville Recon - 3
Springville - 1000 South	Spanish Fork-Provo Reservoir Canal	19-20	Springville Recon - 3-4
Springville - US-89	Spanish Fork-Provo Reservoir Canal	20	Springville Recon - 4

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - *Utah State Historic Preservation Office***

**STREET:** 8800 South    **CITY:** Spanish Fork    **CODE:** UT44    **COUNTY:** Utah    **CODE:** UT    **SURVEY DATE:** July 2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT	MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
20		814 East	A	1940		CD		WW		HA	R1	1	0	House and carport
21		998 East	B	1950		EI		WW		HA	R1	0	0	House
22		1012 East	B	1950		EI		WW		HA	R1	0	0	House
23		1028 East	B	1950		EI		WW		HB	R1	0	0	House with garage

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 800 East    **CITY:** Spanish Fork    **CODE:** UT44    **COUNTY:** Utah    **CODE:** UT    **SURVEY DATE:** July 2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
13		9021 South	A	1915			BE		TB		RU	R1	0	0	House
14&15		9009 South	A	1945			EI		WW		HA	R1	0	0	House
16&17		8845 South	B	1950			FB		OT		BZ	A4	30		Cow buildings- Agricultural

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** Salem Canal Road    **CITY:** Salem City    **CODE:** UT27    **COUNTY:** Utah    **CODE:** UT    **SURVEY DATE:** July 2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
14&15		1493 West	B	1950			CA	BE	WW		HA	R1	3	0	House and outbuildings
16&17		1485 West	C	1920 & 1950			FB	BF	OT		KN	AO	2	0	Agricultural buildings- cinder block bldg (1950) added onto wood building (1920)
18&19		415 West	A	1910			CA		TB		RU	R1	2	0	House and garage
20&21		307 West	A	1915?			EA		WR		RU	R1	2		House and garage
32	?	1530 West	C	1950			FB		WW		HA	R1	2		House, garage (plywood), shed; estimated address



**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 2100 West    **CITY:**Salem    **CODE:** UT27    **COUNTY:** Utah    **CODE:** UT    **SURVEY DATE:** July 2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
35&36		10787 South	B	1890			CA	EA	VE		RX	R1	9		House and outbuildings



**UHCS RECONNAISSANCE SURVEY FORM - Utah Lake - *Utah State Historic Preservation Office***

**STREET:** 700 South    **CITY:** Payson    **CODE:** UT24    **COUNTY:** Utah    **CODE:** UT    **SURVEY DATE:** July 2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
30		440 East	B	1950			BH		WE		HC	R1	0	0	House
31		460 East	B	1900			EA		OV		RH	R1	0	0	House

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - *Utah State Historic Preservation Office***

**STREET:** 400 East    **CITY:** Payson    **CODE:** UT24    **COUNTY:** Utah    **CODE:** UT    **SURVEY DATE:** July 2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
4-6		9697 South	B	1910			EA		TB		RF	R1	5		House and outbuilding- concrete block building
7-9		9658 South	B	1945			EI		WW		HA	R1	2	2	House, garage and outbuilding

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** Main      **CITY:** Payson    **CODE:** UT24      **COUNTY:** Utah      **CODE:** UT      **SURVEY DATE:** July 2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
22		1145 South	B	1940			BE		OV		BD	AO	0	0	Business- Riley's Orchards: Cherries-Clapboard siding, gambrel roof, shed roof sides; stand alone business
23		1001 South	A	1935			CA		RT		RI	RI	1	1	House and stand alone garage
24		770 South	B	1950			CA		WW		HB	RI	0	0	House
25&26		814 South	B	1920			EA		TA		RU	RI	0	0	House
27&28		1106 South	B	1925			CA		TB		RU	RI	2		House and outbuildings
29		1242 South	C	1945			EI		WW		HA	RI	0	0	House

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** SR 198/US 6    **CITY:** Spring Lake    **CODE:** UT30    **COUNTY:** Utah    **CODE:** UT    **SURVEY DATE:** July 2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT	MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
1		12163 South	B	1920		CA		TA		RU	R1	1	0	House and outbuilding
2		12077 South	B	1920		EH		TB		RF	R1	2	2	House and outbuildings
3		12035 South	C	1940		EH		WW		HA	R1	2	0	House and outbuildings
4		1975 South	C	1945		FB		WW		HA	R1	4	1	House and outbuildings (Cloward Residence)
5&6		11873 South	B	1935		EH		OV	WW	HA	R1	2	2	House and outbuildings (Schramm Residence)
7&8		11733 South	C	1935		EA		WE		HC	R1	1	1	out of period, 2-story house on same property; outbuilding could be Bow Truss roof building. (Oliphant Residence)
9		1406 South	B	1950		CA		WW		HB	R1	0	0	House (North of Spring Lake)
10-12		11938 South	C	1930										House-out of period; Irrigation box lies on roadway, no longer connected to irrigation system comes from 11917 South house property across road
13-15		11968 South	C	1945		EI		WW		HA	R1	6	0	House and outbuildings
16&17		12188 South	C	1950		EI		WE		HE	R1	0	0	House and Farmstead outbuildings (Mower Residence)
21		12688 South	B	1930		FB		OV		BZ	A0	5	1	Barn- gambrel roof, Shed, and corral buildings (Saunder Livestock Corp) tel # 465-2777 & 465-2370

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - *Utah State Historic Preservation Office***

**STREET:** 12400 South    **CITY:** Spring Lake    **CODE:** UT30    **COUNTY:** Utah    **CODE:** UT    **SURVEY DATE:** July 2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
18&19		4035 West	C	1910			EA		TA	TB	RF	R1	3	0	House and outbuildings (R & C Patton Residence)

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 1600 West    **CITY:** Mapleton

**CODE:** UT22

**COUNTY:** Utah

**CODE:** UT

**SURVEY DATE:** June  
2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
		2600 S	D	1960	1	5	CR	BH	LE	LC	HO	R1	0	12	Barns, sheds, & corral complex
		1990 S	A	1925	1	0	CA	FZ	TB	TP	RU	R1	0	1	Wood shed
		64 S	B	1925	1	0	BC		TB	TZ	RU	R1	0	1	Brick house in rear
		10 S	C	1930	1	0	E1		WW	MC	HA	R1	0	0	Side addition
		33 N	C	1880	1	5	E1		VZ		RX	R1	1	0	Major rear addition
		91 N	A	1915	1	0	EL		TB	TZ	RT	R1	0	0	Basement house
		295 N	A	1953	1	0	CD	DF	WR	OV	HF	R1	0	1	Board and Batten garage
		297 N	A	1950	1	0	CA		WR	OV	HF	R1	0	1	Heavily vegetated
		375 N	D	1960	1	0	CA		WR	OV	HF	R1	0	0	
		1127 N	A	1910	1	0	EA	BZ	TB	TP	RF	R1	0	2	Farmstead
		715 N	A	1945	0	5	BG		WZ	OV	RA	R1	0	3	Basement house with barn and silo
		737 N	A	1930	1	0	EL		MZ	OV	HA	R1	1	1	
		712 N	A	1950	1	0	CA		WW	OV	HB	R1	1	0	
		450 N	C	1890	1	0	EA		VZ	OV	RZ	R1	1	0	Major additions
	?	440 N	B	1910	1	0	BD	CB	TZ		CP	C8	1	0	Cinder block bay attached
		326 N	C	1900	2	5	E1		VZ		RJ	R1	0	0	Major alterations
		256 N	B	1910	1	0	EA		VZ		RH	R1	0	1	In period alterations

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 1600 West **CITY:** Mapleton

**CODE:** UT22

**COUNTY:** Utah

**CODE:** UT

**SURVEY DATE:** June 2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
	?	175 S	C	1890	1	5	EZ		VZ		RX	R1	2	0	Remodeled
		1195 S	B	1940	1	0	CA		WW		HB	R1	1	2	
		1615 S	B	1920	1	0	E1		TB	TA	RU	R1	1	3	
		1745 S	B	1910	1	0	CB		TZ		RB?	R1	0	1	
		1785 S	B	1920	1	0	E1		TZ		RB?	R1	0	1	
		1801 S	C	1910	1	0	E1		TB	VZ	RU	R1	0	1	Major alterations
		1825 S	A	1945	1	5	CB	EA	WZ	MZ	RA	R1	1	0	Flat roof - split level
		1985 S	A	1925	1	5	EH	BB	TB	TA	RU	R1	1	0	Original siding

















**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 400 East

**CITY:** Springville

**CODE:** UT31

**COUNTY:** Utah

**CODE:** UT

**SURVEY DATE:** June  
2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
		1449 S	D	1960	1	0	EI		TZ	OV	HZ	R1	0	0	
		1437 S	D	1975	1	0	CA		LE		AA	R1	0	0	Duplex
		1427 S	D	1970	1	0	CA		LL		HI	R1	0	0	
		1413 S	D	1970	1	0	CA	BB	WR		HF	R1	0	0	
		1401 S	D	1970	1	5	CA	BZ	LL		HI	R1	1	0	
	?	1397 S	D	1985	1	0	CA		WR		HF	R1	0	0	
		1377 S	A	1920	1	0	EH		TZ	OV	RU	R1	1	0	with basement
		1361 S	A	1945	1	0	EH		WW		HA	R1	0	1	with cinder block garage
		1347 S	D	1975	1	5	EI	EL	NM	LC	HN	R1	0	0	
		1319 S	D	1975	1	0	CA	EI	WR		HE	R1	0	0	with basement
		1305 S	D	1970	1	5	CA		LE	LC	HN	R1	0	0	
		1291 S	D	1970	1	0	CA	EI	WR		HE	R1	0	0	
	?	1275 S	D	1970	1	0	CA	BB	TZ		HK	R1	0	0	
		1257 S	D	1980	1	5	CA	EI	TZ	LE	HN	R1	0	0	
		1205 S	D	2000	1	0	CA		OT		XA	J0	0	0	LDS Ward House
		1197 S	B	1890	1	5	CA	BC	VE		RJ	R1	0	0	In period alterations
		1171 S	C	1900	1	5	EA		TZ		RX	R1	1	0	
		1155 S	A	1930	1	0	BF		RC		RU	R1	0	1	

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 400 East

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**COUNTY:** Utah

**CODE:** UT

**SURVEY DATE:** June  
2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
		1129 S	D	1985	1	0	CA		TZ		AA	R1	0	0	
		1113 S	A	1900	2	0	CA		VQ	VO	RJ	R1	0	0	
		1085 S	A	1930	1	0	BF		TZ	OV	RU	R1	0	0	
		1031 S	D	1990	1	0	CA	EI	LZ		AA	R1	0	0	Duplex 1031-33
		987 S	A	1875	1	0	EA		CG		RC	R1	0	0	
		975 S	A	1920	1	0	BF		TB	OV	RU	R1	0	1	
		959 S	A	1920	1	0	BC		TP		RU	R1	0	1	
		945 S	D	1960	1	0	CA		WR		HD	R1	0	0	
		913 S	A	1910	1	0	CA		TZ	OV	RF	R1	0	1	
		875 S	A	1950	1	0	CA		TP	TB	RU	R1	0	0	Attached garage
		851 S	A	1930	1	0	BF		TZ	TB	RU	R1	1	0	
		839 S	A	1925	1	0	BC	BD	RC	TB	RU	R1	0	1	
		837 S	A	1920	1	0	BD		TB	TZ	RU	R1	0	0	
		815 S	A	1880	1	0	CA		VZ	OV	RC	R1	0	2	
		797 S	A	1930	1	5	CA		RZ	OV	RI	R1	0	0	
		785 S	D	1970	1	0	CA		LC		HK	R1	0	0	
		775 S	A	1950	1	0	CA		WW		HK	R1	1	0	
		759 S	C	1880	1	0	BE		TZ		RH	R1	1	0	Remodeled circa 1915

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 400 East

**CITY:** Springville

**CODE:** UT31

**COUNTY:** Utah

**CODE:** UT

**SURVEY DATE:** June  
2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
		727 S	A	1930	1	0	CA		RZ	OV	RI	R1	0	1	
		707 S	A	1930	1	0	CA		RZ	OV	RI	R1	1	0	
	?	689 S	A	1930	1	5	CA		TB	RC	RU	R1	0	0	
		665 S	A	1930	1	0	CA		RZ	OV	RI	R1	0	1	
		625 S	A	1945	1	0	CA		WW	OV	HA	R1	0	0	
		615 S	D	1965	1	0	CA		WR		HK	R1	0	0	
		601 S	A	1890	1	5	CA		VE		RX	R1	0	0	
		595 S	D	1980	2	0	CA		LC	OV	AZ	R1	0	0	4 Plex
	?	587 S	A	1890	1	5	CA		VE		RX	R1	0	0	
		575 S	D	1960	1	0	CA		WW		HZ	R1	0	0	
		555 S	D	1960	1	0	CA		WW		HZ	R1	0	0	
		515 S	A	1930	1	5	CA		TZ		RU	R1	0	0	
		507 S	A	1925	1	0	CA		RC		RU	R1	0	1	
		501 S	C	1920	1	0	EI		TB		RU	R1	1	0	
		489 S	D	1965	1	0	CA		WR		HZ	R1	0	0	With attached garage
		473 S	D	1970	1	0	CA		WR		HZ	R1	0	0	
		455 S	A	1950	1	0	CA		WW		HZ	R1	0	1	
	?	425 S	A	1950	1	0	CA		WW		HZ	R1	0	0	

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 400 East

**CITY:** Springville

**CODE:** UT31

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**SURVEY DATE:** June  
2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
		419 S	A	1950	1	0	CA		WW		HZ	R1	0	0	
	?	409 S	A	1925	1	0	CA		RC		RI	R1	0	1	
		385 S	D	1995	1	0	CA		LZ	OT	CZ	H0	0	0	IHC Health Center
		269 S	B	1900	1	0	EI		TB	OV	RU	R1	1	0	Cross wing plan
		243 S	A	1897	2	0	CA		VE		RX	R1	0	0	
		233 S	A	1915	1	0	BC		RC		RZ	R1	0	0	
		213 S	A	1915	1	0	BC		TP	TB	RF	R1	0	0	
		205 S	A	1915	1	0	BE		TP	TB	RU	R1	0	0	
		201 S	A	1925	1	0	EH		RC	TB	RU	R1	0	1	Cinder block garage
		151 S	D	1960	1	0	CA		LZ	OT	YZ	E1	0	0	Grant Elementary School
		101 S	C	1890	1	5	CA		VE		RX	R1	0	0	2 <sup>nd</sup> Story shed roof addition
		97 S	A	1925	1	0	CA		RT		RI	R1	0	0	
		89 S	A	1890	1	5	CA		VE		RX	R1	0	0	
		69 S	C	1925	2	0	CA	EA	TB		RU	R1	0	0	Remodel with 2 <sup>nd</sup> story
		29 S	A	1920	1	5	FC		TP	TB	RU	R1	0	1	
		11 S	D	2000	2	0	DV	EA	LZ	OT	HZ	R1	1	0	
		10 N	A	1930	1	0	CA		RZ		RI	R1	0	0	
		26 N	D	1965	1	0	CA		WR		HF	R1	0	0	

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 400 East      **CITY:** Springville      **CODE:** UT31      **COUNTY:** Utah      **CODE:** UT      **SURVEY DATE:** June 2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
		44 N	A	1940	1	0	CA		TP	TB	RF	R1	0	1	
		66 N	A	1950	1	0	CA		WW		HA	R1	0	1	
		76 N	C	1950	1	0	EI		WW		HA	R1	1	0	
		84 N	A	1925	1	0	FB		TP	TB	RU	R1	0	1	
		90 N	C	1950	1	0	EI		WW		HA	R1	1	0	
		110 N	B	1899	1	5	CA		VE		RJ	R1	0	0	Dormers with aluminum windows
	?	130 N	A	1910	1	0	BD		TB	OV	RF	R1	0	0	
		140 N	A	1950	1	0	CA		WW		HA	R1	0	1	
		150 N	A	1950	1	5	CA		WW		HA	R1	1	0	
		184 N	A	1950	1	0	CA	EH	WW		HA	R1	0	1	
		190 N	B	1875	1	0	EA	CA	VZ	OV	RX	R1	0	0	
		212 N	B	1870	2	0	EI		CG	OV	RX	R1	1	0	Original faces south- Resided
		292 N	D	2000	1	0	EA	CA	OT	LC	AA	R1	0	0	Duplex with garages
		350 N	D	1975	1	0	CA		OT		XA	J1	0	0	LDS Wardhouse
	?	415 N	B	1900	1	5	EA		RS	OV	RI	R1	0	0	
		385 N	C	1940	1	0	EI	CA	WW		HC	R1	0	0	
		373 N	A	1925	1	0	BD	BF	TB	TP	RU	R1	0	0	Modified bungalow plan
		365 N	C	1925	1	0	EI		TB	OV	RU	R1	0	0	Remodeled same as above (373)

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 400 East

**CITY:** Springville

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**COUNTY:** Utah

**CODE:** UT

**SURVEY DATE:** June  
2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT	MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/ #CON	COMMENTS ALTERNATE ADDRESSES
		355 N	D	1960	1 0	CA	BF	LZ		HE	R1	1 0	
		311 N	D	1985	2 0	CA		LZ		AZ	R2	0 0	311-317 4-Plex apartments
		261 N	C	1870	1 0	EI		VT	OV	RC	R1	0 0	
		245 N	A	1930	1 0	CA		RC	RG	RI	R1	1 0	
		189 N	A	1900	1 0	EA		CG		RX	R1	0 1	CP front
		165 N	A	1925	1 0	CA		TP	TB	RU	R1	0 1	
		137 N	B	1945	1 0	CA		WW		RF	R1	0 1	Remodeled 4 Square- in period
		91 N	C	1900	1 0	EI		CG		RX	R1	0 0	
		77 N	A	1950	1 0	CA		WR		HF	R1	0 0	
		61-65 N	D	2000	1 0	CA		LZ	OT	HK	R1	0 0	Condo/Duplex
		35 N	A	1925	1 0	CA		TP	TB	RU	R1	2 0	
		14 S	B	1950	1 0	CA		WR		HE	R1	0 0	
		30 S	A	1930	1 0	EH		WW		HA	R1	0 1	
		46 S	C	1930	1 0	EI		RG	OV	RI	R1	1 0	Re-sided
		70 S	A	1950	1 0	CA		WR		HF	R1	0 0	
		110 S	A	1880	1 5	CA	EH	RZ	RC	RI	R1	0 0	
		136 S	A	1920	1 0	CA		TP	TB	RU	R1	0 1	
		166 S	A	1930	1 0	CA		RG	RC	RI	R1	0 0	

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 400 East

**CITY:** Springville

**CODE:** UT31

**COUNTY:** Utah

**CODE:** UT

**SURVEY DATE:** June  
2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
		391 S	A	1925	1	5	CA		RS		RI	R1	0	0	
		212 S	A	1945	1	0	CA		WR	RG	RI	R1	0	0	Ranch w/ English Cottage elements
		244 S	A	1925	1	0	EH		TP	TB	RU	R1	0	0	
		268 S	A	1935	1	0	CA		RG		RI	R1	0	1	
		290 S	C	1910	1	0	CC	FB	TZ		C1	C7	0	0	
		360 S	A	1925	1	0	BE		TB	TP	RU	R1	0	1	
	?	410 S	D	1995	1	0	CA		LZ	OT	CE	CO	0	0	Conoco
	?	430 S	D	1995	1	0	CA		LZ	OT	CE	CO	1	0	Conoco Car Wash "Jake's"
		502 S	C	1890	1	0	EH	DD	VZ		RX	R1	0	0	Remodeled
		508 S	A	1925	1	0	BC		TB	TP	RU	R1	0	1	
		540 S	B	1900	1	0	EI		VL	OV	RX	R1	0	1	
		554 S	D	2000	1	0	CA	EA	OT		AZ	H3	0	0	Reid's Park Place Assisted Living
		580 S	C	1930	1	0	BD	CA	WW		HA	R1	0	0	
		596 S	B	1890	1	0	EH		VZ		RX	R1	0	1	
		600 S	B	1915	1	0	EH		TB		RU	R1	0	0	
		614 S	A	1890	1	0	EA		VZ	OV	RX	R1	0	0	
		636 S	D	1960	1	0	BB	DF	LC	LZ	HL	R1	0	0	
		668 S	A	1890	1	0	CA		VE		RI	R1	0	2	

**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 400 East

**CITY:** Springville

**CODE:** UT31

**COUNTY:** Utah

**CODE:** UT

**SURVEY DATE:** June  
2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
		696 S	C	1880	1	0	EI	DB	VZ	OV	RX	R1	1	1	
		720 S	C	1900	1	5	CA		VZ	OV	RX	R1	0	0	
		740 S	A	1880	1	0	BC		VZ	OV	RH	R1	0	1	
		750 S	D	1995	1	0	EI		LZ	WR	HF	R1	0	0	
		790 S	D	1970	1	0	CR		LZ	WR	HF	R1	1	0	
		820 S	D	1990	1	0	CA		OT		XA	J1	0	0	
		900 S	D	1960	1	0	CA	BB	LZ	WR	HF	R1	0	0	
		924 S	A	1890	1	5	CA		VZ	OT	RH	R1	0	0	
		960 S	C	1890	1	0	CR		VZ	OT	RH	R1	1	0	
		980 S	A	1925	1	0	CA		TB		RU	R1	0	0	
		1010 S	D	1970	1	0	OT		LM		HG	UN	0	0	Maple View Trailer Court
		1030 S	D	1980	1	0	CA		LZ	WR	HF	R1	0	0	
		1048 S	A	1890	1	0	EH		VZ	OT	RH	R1	0	0	
		1102 S	A	1930	1	0	CA		RT		R1	R1	0	1	
		1136 S	C	1900	1	0	EI		VZ	OT	RX	R1	1	0	
		1174 S	B	1880	1	0	EH	BD	VZ	OT	RL	R1	0	1	
		1188 S	D	1980	1	0	CA	EI	LZ	OT	RU	R1	1	0	
		1212 S	B	1890	1	0	CA	EH	RZ		RZ	R1	0	1	In period alteration



**UHCS RECONNAISSANCE SURVEY FORM -Utah Lake - Utah State Historic Preservation Office**

**STREET:** 400 North      **CITY:** Springville      **CODE:** UT31      **COUNTY:** Utah      **CODE:** UT      **SURVEY DATE:** June 2003

SHOT #	?	HOUSE #	EVAL	CONST DATE	HT		MAT 1	MAT 2	ST 1	ST 2	TYPE	ORIG USE	#NON/#CON		COMMENTS ALTERNATE ADDRESSES
		411 E	C	1900	1	0	CA		VZ	OV	RX	R1	0	1	Being remodeled
		397 E	A	1940	1	0	CA		WW		HB	R1	0	0	























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***Utah Lake Drainage Basin  
Water Delivery System***

***Cultural Resources***

***Technical Report***

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***Appendix B***

**UHCS Reconnaissance Level Photographs**

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## PHOTOGRAPH INDEX

City Name	Locations
Spanish Fork	All
Salem	All
Payson - 1	Main, 700 South, Salem Canal Road
Payson - 2	Salem Canal Road, 2100 West
Spring Lake	All
Mapleton	All
Provo and Orem	All
Springville - 1	1449 S 400 E thru 913 S 40 E
Springville - 2	415 E 900 S, 875 S 400 E thru 419 S 400 E
Springville - 3	409 S 400 E thru 190 N 400 E
Springville - 4	212 N 400 E thru 290 400 E
Springville - 5	360 S 400 E thru 1188 S 400 E
Springville - 6	1212 S 400 E thru 1500 N Hwy 89
Springville - 7	400 N, 300 N, 200 N, Center St, 100 S, 200 S, 300 S, 400 S

City of Spanish Fork 1253/4M: 12-25 & 5M:1-9

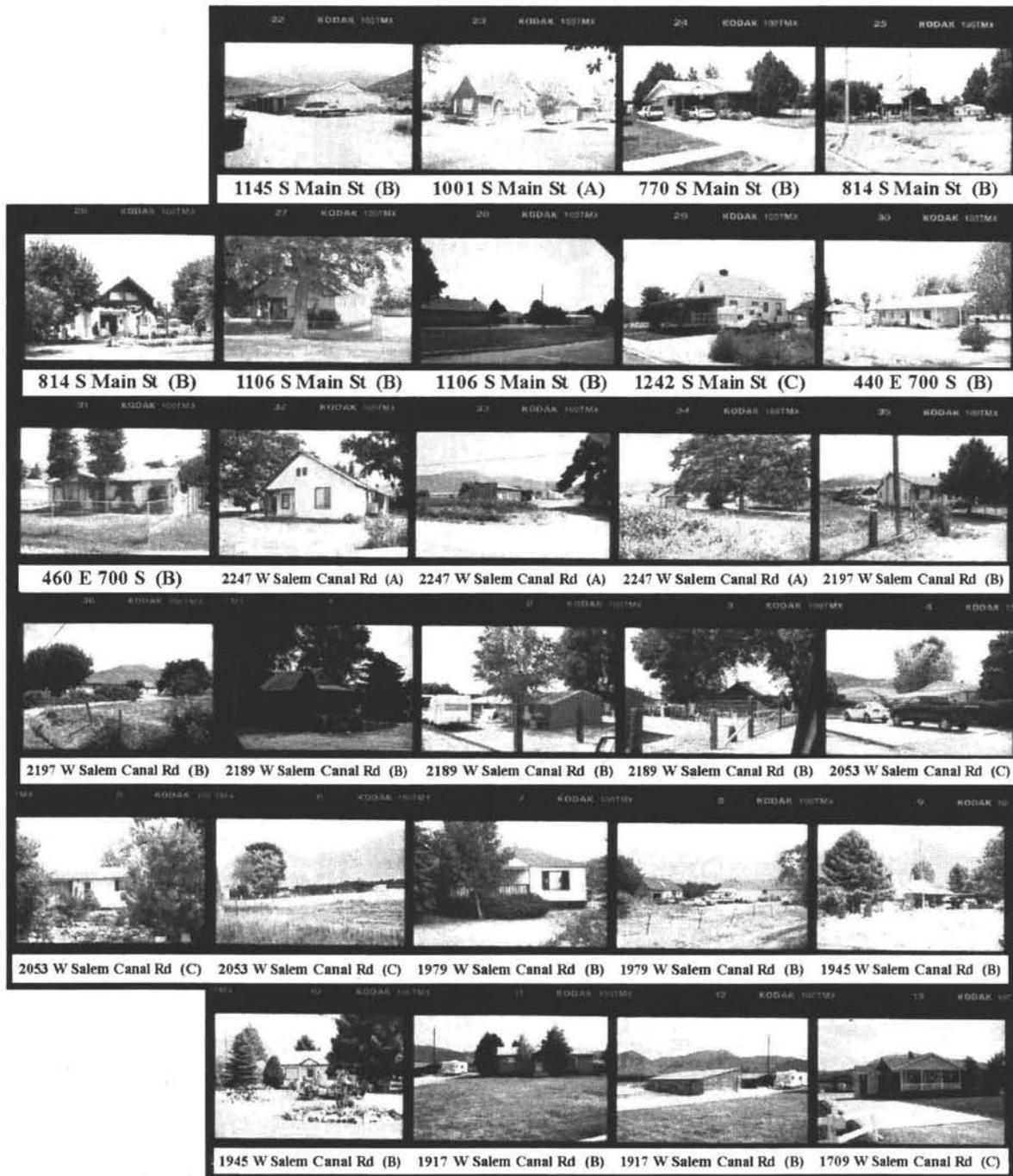


City of Salem 1253/3M: 14-25, 32 & 4M: 1, 4-11

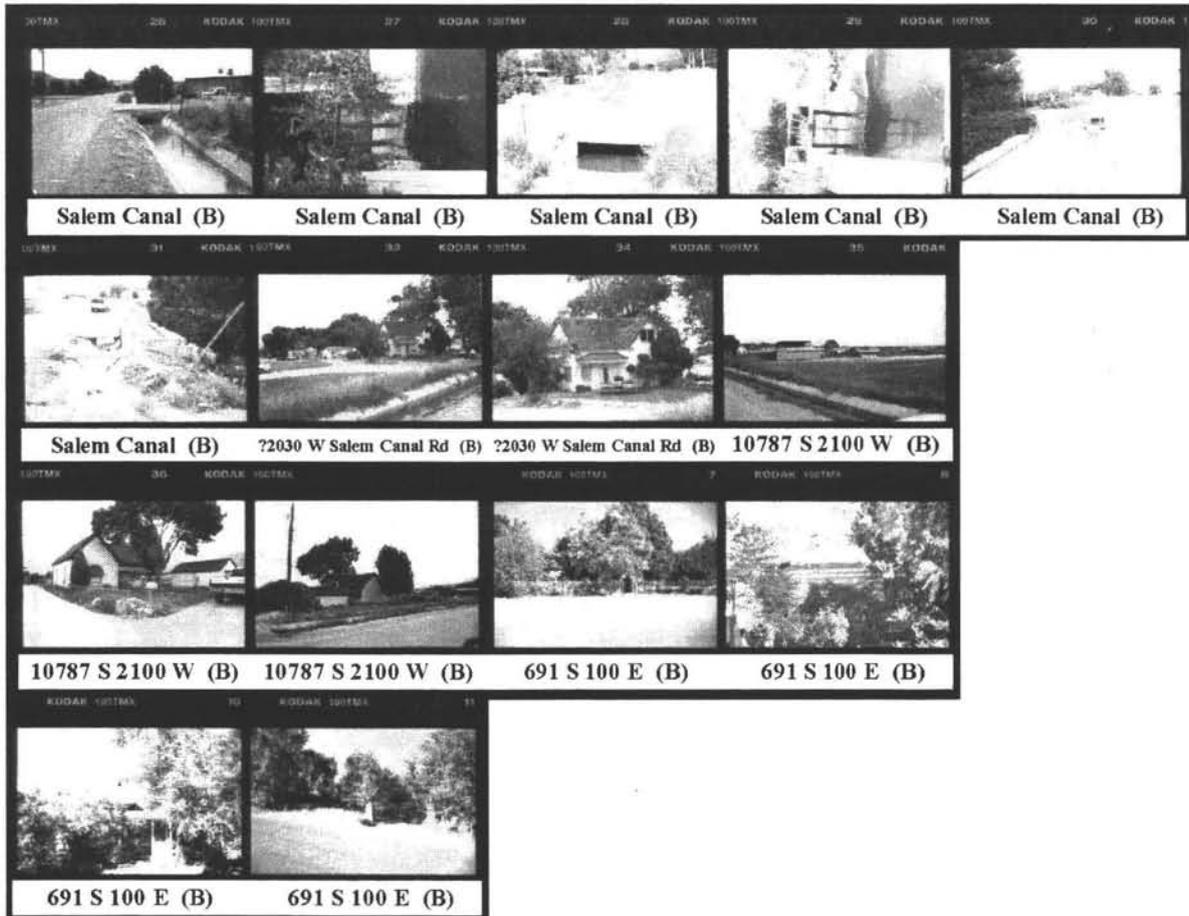


City of Payson

1253/2M: 22-36 & 3M: 1-13

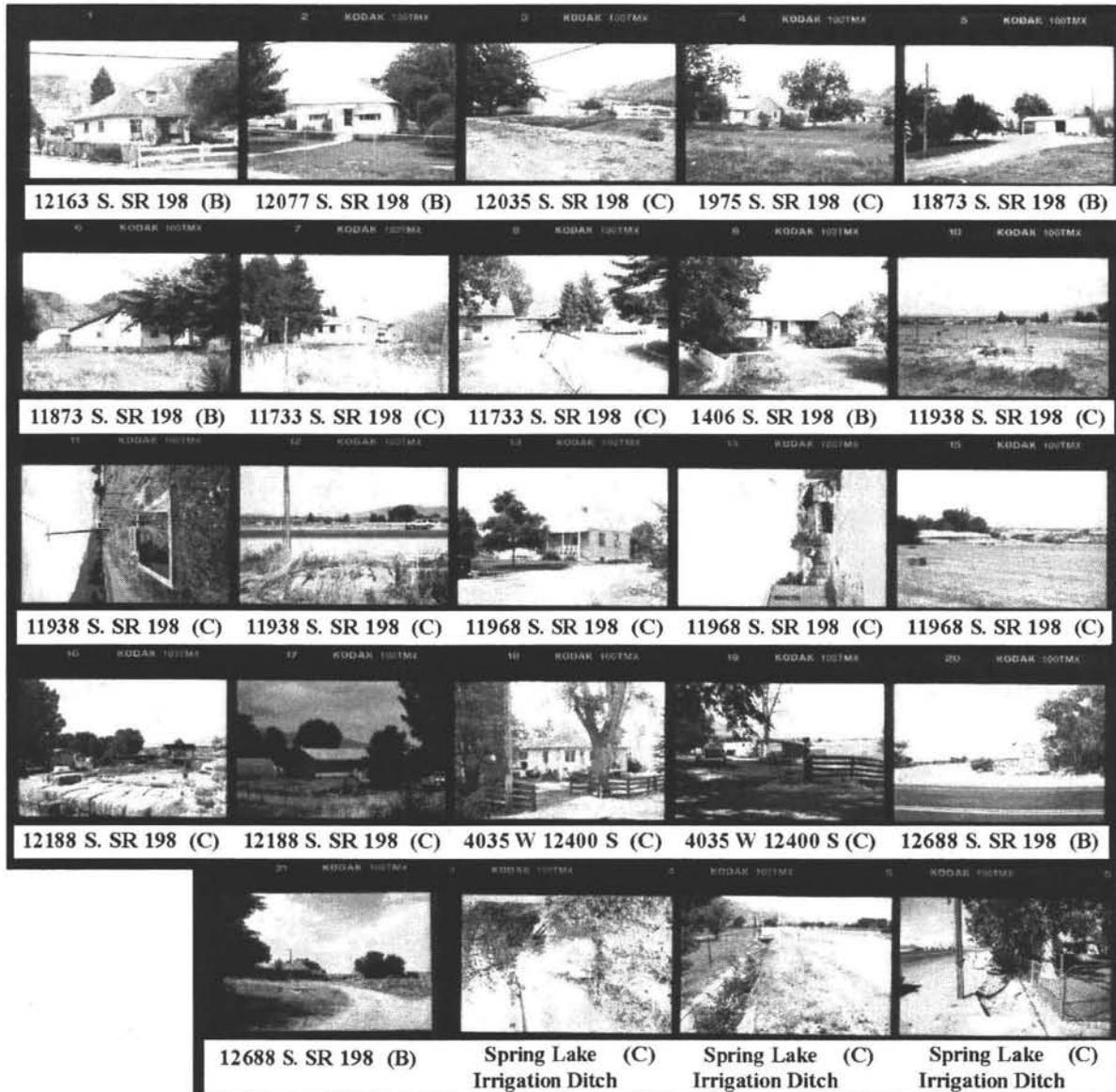


City of Payson 1253/3M: 26-31, 33-37 & 6M: 6A-7A, 9A-10A



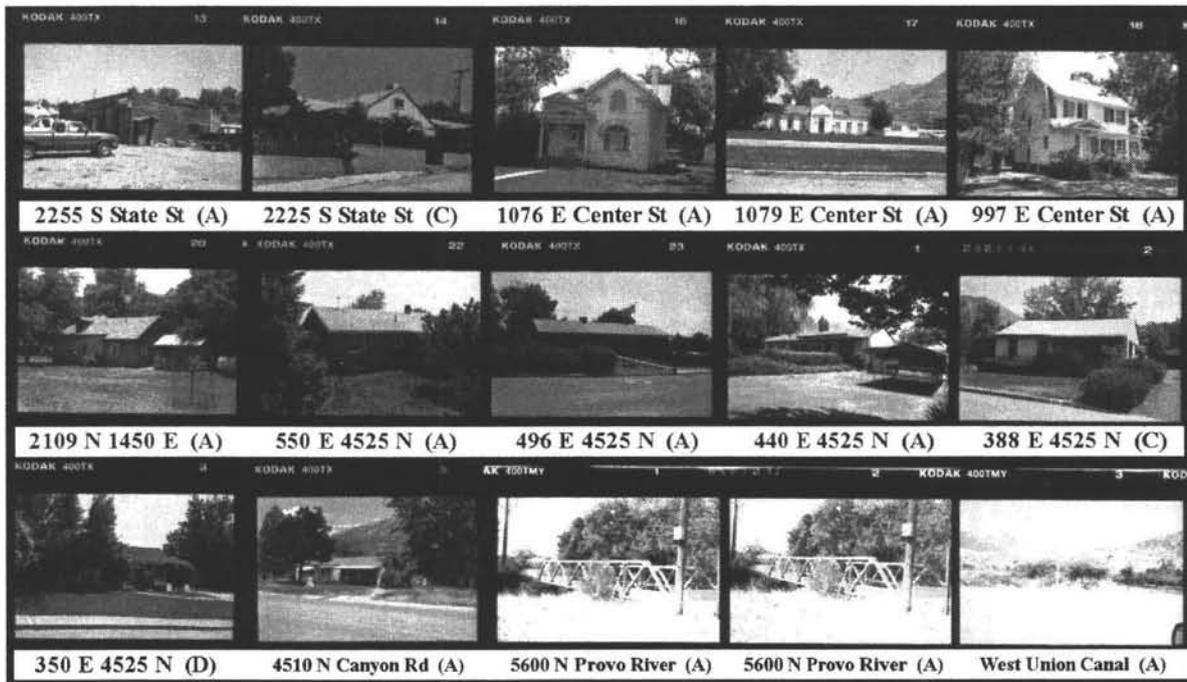
City of Spring Lake

1253/2M: 1-21 & 6M: 3A-5A

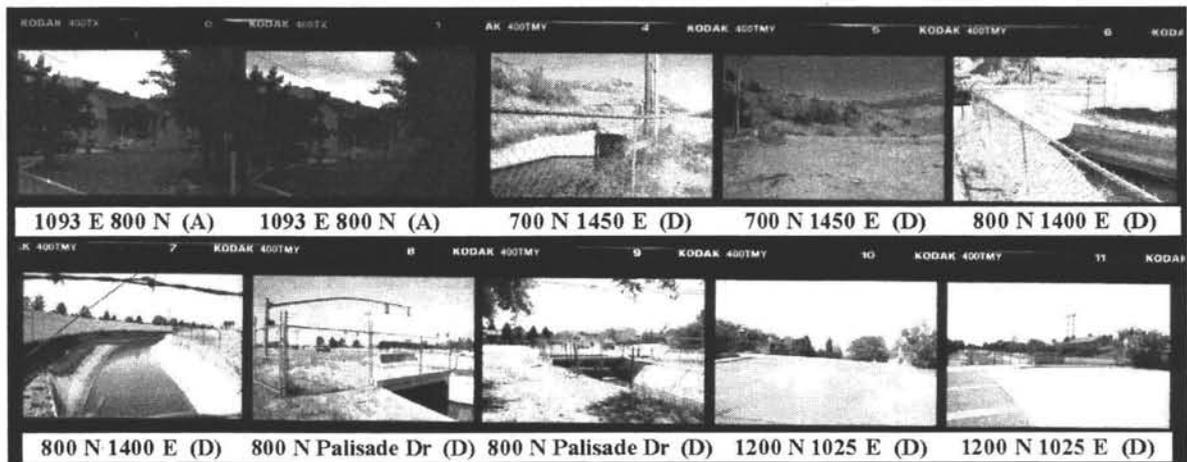


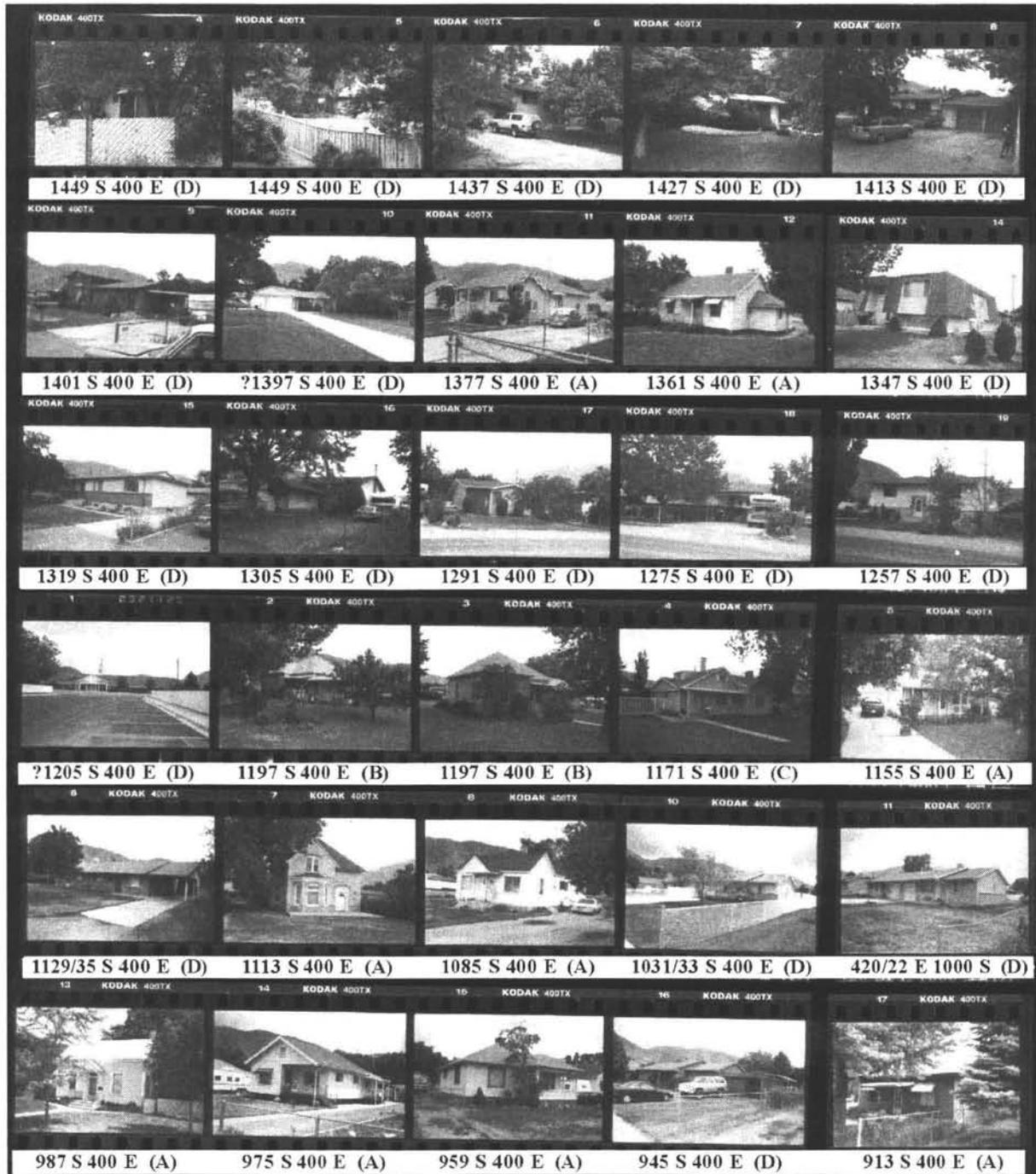


City of Provo 1253/2D: 13-14, 16-18, 20, 22-23; 3D: 1-3, 5 & 19D: 1-3

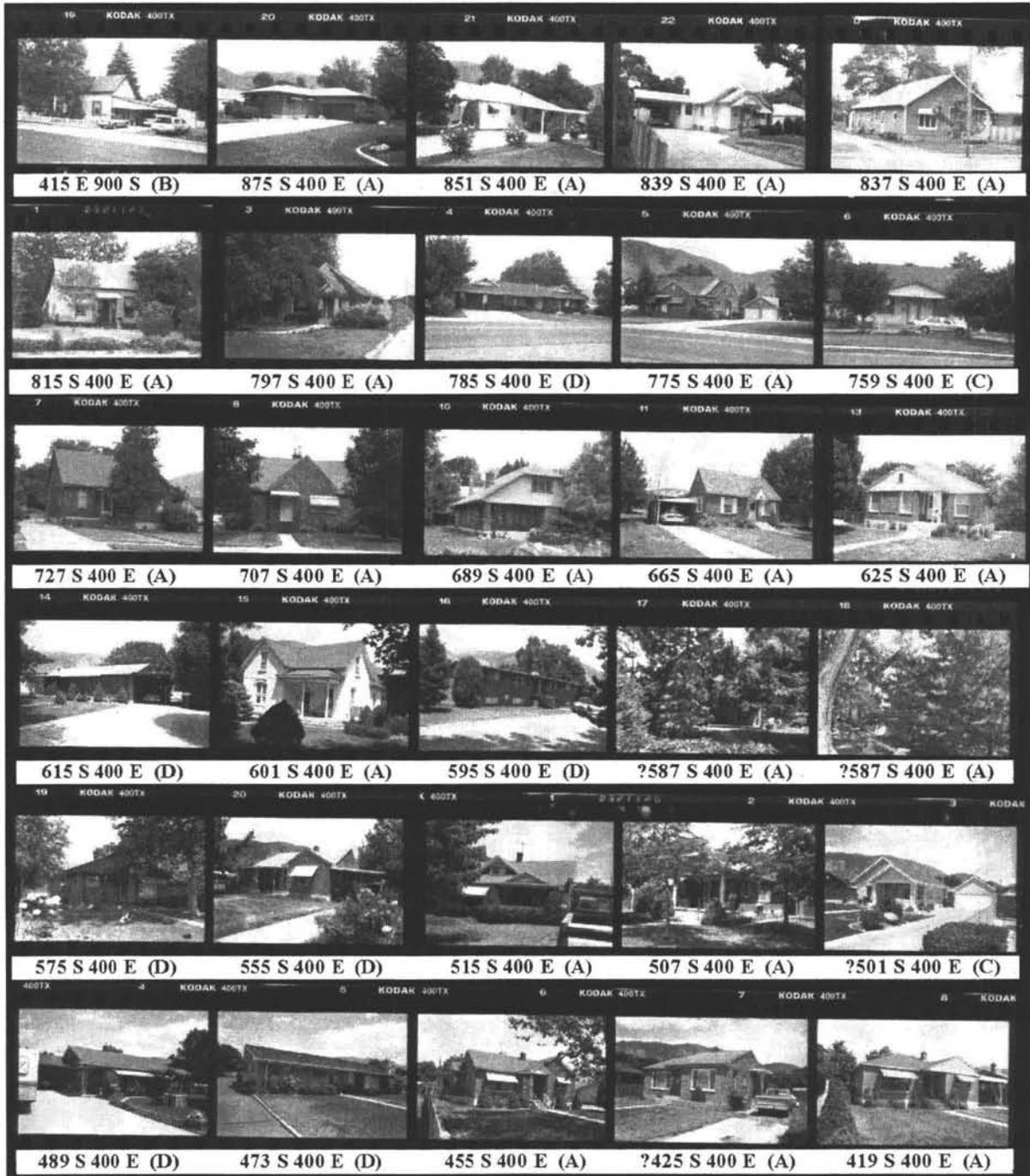


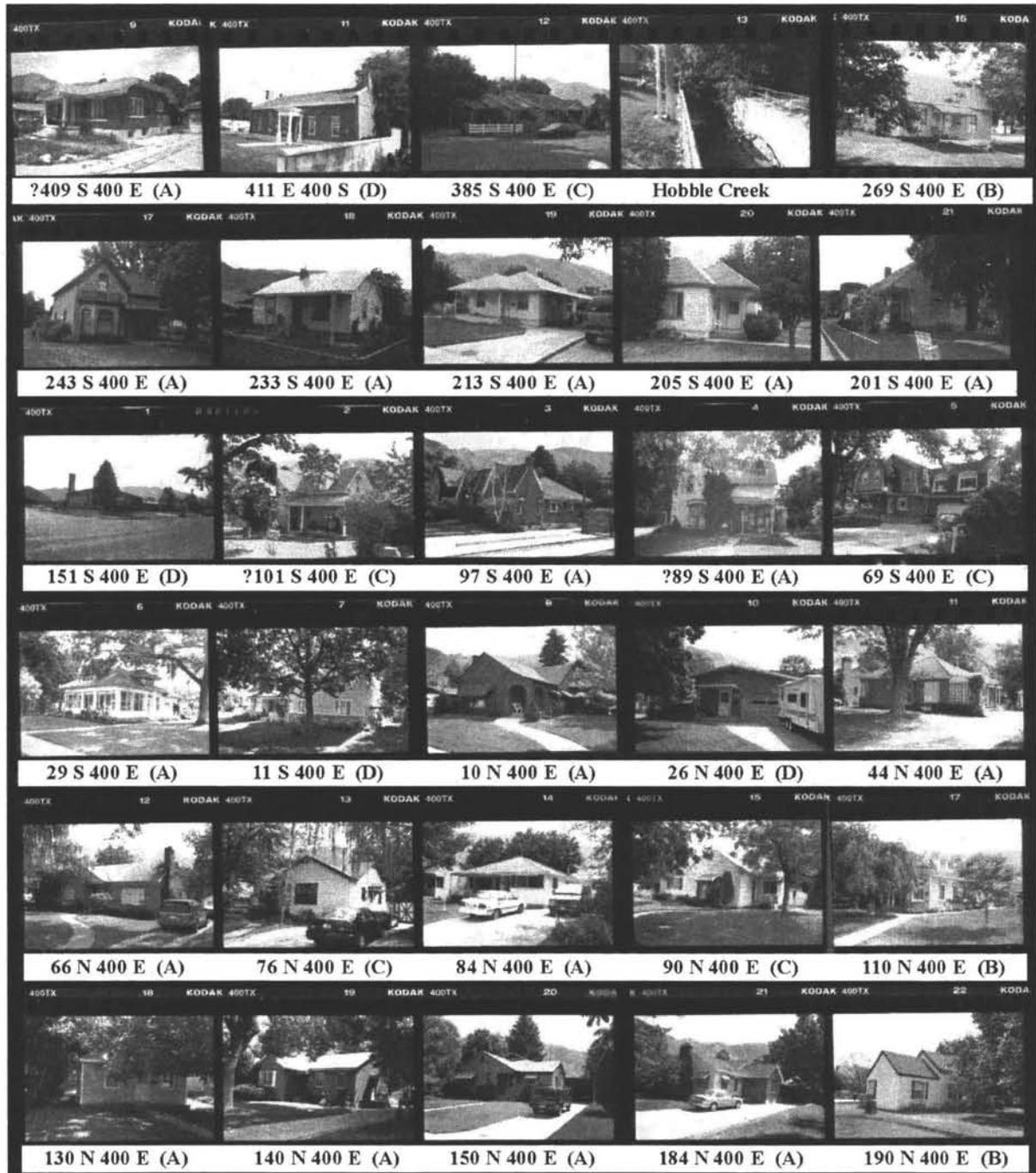
City of Orem 1253/4D: 0-1 & 19D: 4-11

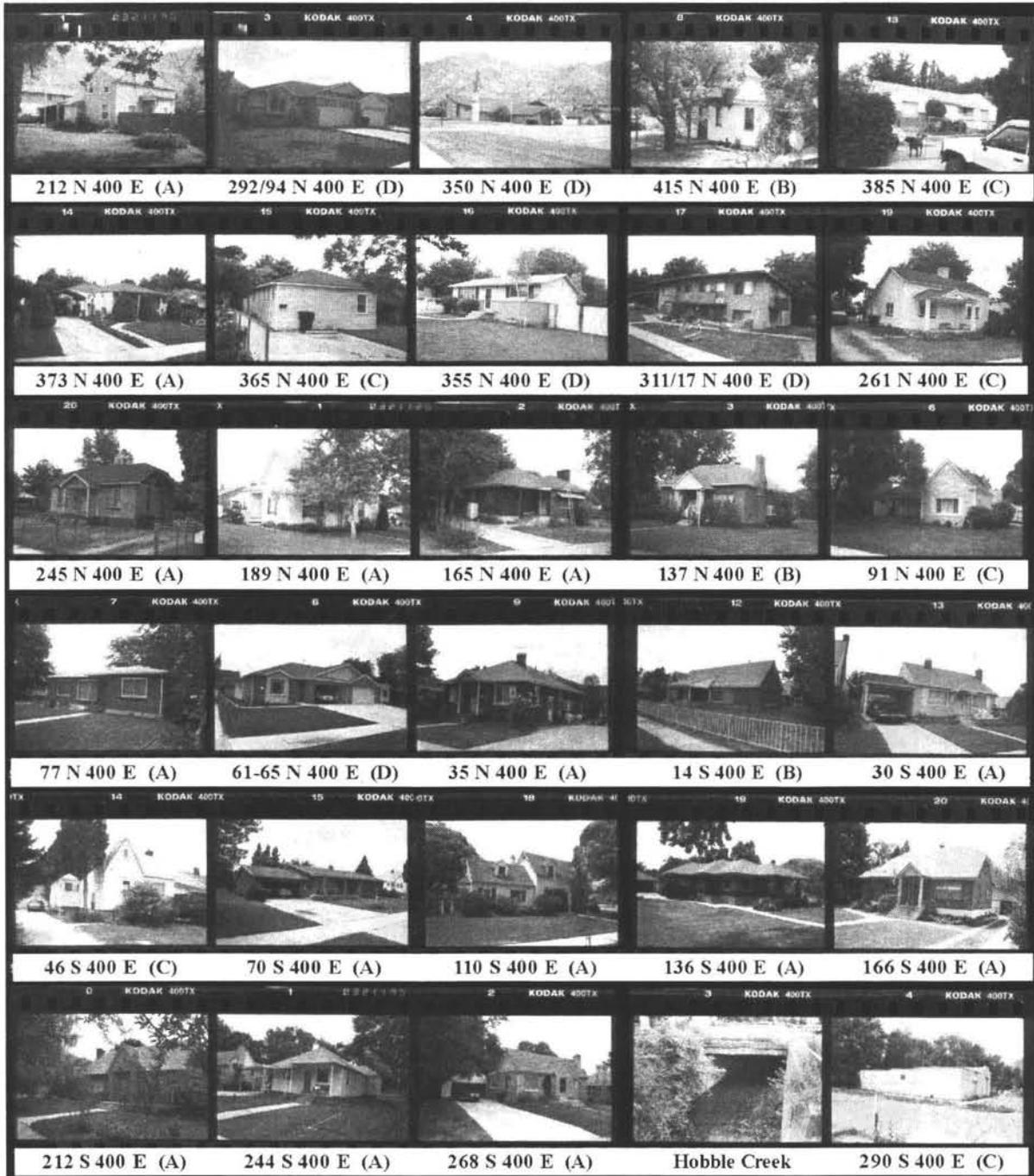


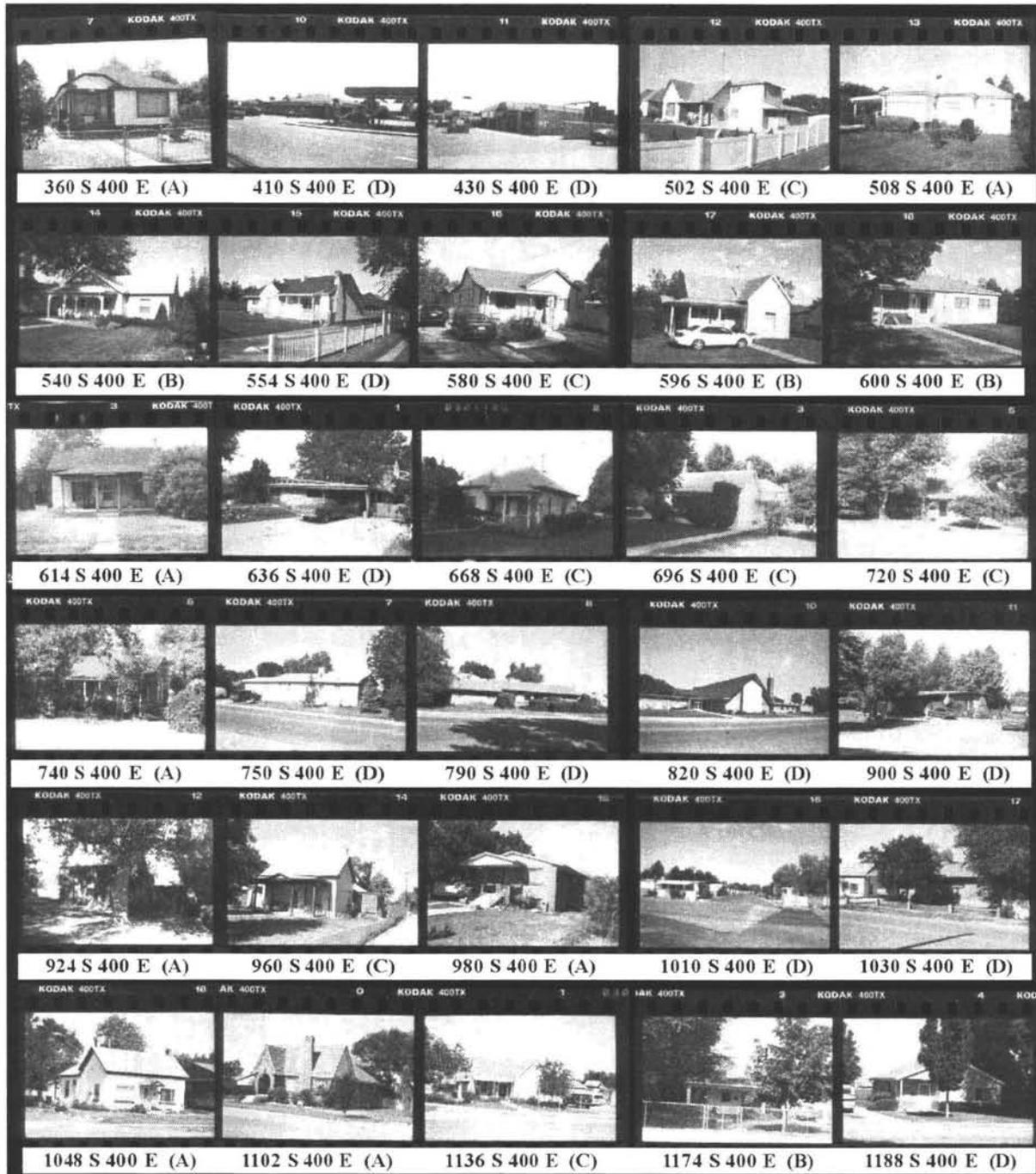


City of Springville 1253/5D: 19-22; 6D: 0-1, 3-8, 10-11, 13-20 & 7D: 1-8









City of Springville 1253/13D: 5-13, 15

