Utah Department of Transportation

Provo Canyon Parking Study
US 189 From Milepost 8 to 18

Submitted to:
Utah Department of Transportation (UDOT) Region 3

Submitted by:
Project Engineering Consultants Ltd.
986 West 9000 South
West Jordan, UT 84088
801-495-4240

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Executive Summary

In June 2017, the Utah Department of Transportation (UDOT), contracted with Project Engineering Consultants Ltd. (PEC) to complete a parking study for US Route 189 from milepost 8 to milepost 18 in Provo Canyon. The project was conducted to identify, analyze, and recommend improvements to the parking areas in the canyon. Tasks of the study and planning process included:

• Identification of existing formal and informal parking areas and inventory existing parking facilities.

• Creation of precise and legible maps depicting accurate and current information.

• Collection of cursory traffic impact data including number of collisions, locations, and conditions that contributed to those collisions.

• Analysis of field data with conclusions regarding the existing condition and function of the parking facilities in the canyon.

• Preparation of recommendations for the improvement of existing parking facilities and proposed additions.

• Creation of this parking study report.

This report explores the purpose and goals of the Provo Canyon Parking Study in more depth. It provides an overview of the analysis process, illustrates components of feasibility, and suggests proposed additions or renovations.
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Project Team and Stakeholders

**UDOT Region 3**
- Matt Parker, Project Manager

**Utah County**
- Richard Nielson, Public Works Director

**Wasatch County**
- Doug Smith, County Planner

**Heber Valley Railroad**
- Mark Nelson, Director

**Project Engineering Consultants**
- Lars Anderson, Principal
- Greg Kloberdanz, Project Manager
- Kelly Harris, Traffic Engineer
- Zachary Scott, Landscape and Environmental Planner
- Tanner Nebeker, Field Technician
- Jesse Moreno, Field Technician
1.0 Introduction

In June 2017, the Utah Department of Transportation (UDOT), contracted with Project Engineering Consultants Ltd. (PEC) to complete a parking study for US Route 189 from milepost 8 to milepost 18 in Provo Canyon (see Figures 1 and 2). The project was conducted to identify, analyze, and recommend improvements to the parking areas in the canyon.

![Figure 1: US 189 in Provo Canyon. View to the northeast.](image)

Project Purpose, Goals, and Objectives

The parking study was conducted to identify aspects of existing parking facilities such as capacity, function, safety, and any other conflicts within the project area. Following the identification of areas of concern, the project team developed strategies and concept plans to improve parking areas.

- Identification of existing formal and informal parking areas and inventory existing parking facilities.
- Creation of precise and legible maps depicting accurate and current information.
- Collection of cursory traffic impact data including number of collisions, locations, and conditions that contributed to those collisions.
- Analysis of field data with conclusions regarding the existing condition and function of the parking facilities in the canyon.
- Preparation of recommendations for the improvement of existing parking facilities and proposed additions.
- Creation of this parking study report.

This report explores the purpose and goals of the Provo Canyon Parking Study in more depth. It provides an overview of the analysis process, illustrates components of feasibility, and suggests proposed additions or renovations.
Figure 2: Overview Map

Legend

- Mileposts
- Roadway Markers

1 Inch = 1 mile

Ault Bridge
Vivian Park
Deer Creek Reservoir
Orem
2.0 Area Overview

The project area is located between Orem and Heber City, Utah in Townships 5 and 6 South Range 3 East, Sections 5, 6, 7, 13, 24, 25, 26, and 33. Elevations in this location range from approximately 5,205 feet to 5,270 feet (1,586 meters to 1,606 meters) above sea level. The project area is located at the base of the Wasatch Mountains within Provo Canyon (see Figure 3). Soils within the project area are generally disturbed from the Heber Valley Railroad, historic settlement, and recreation near the Provo River.

Riparian Vegetation is primarily composed of willows (salix spp.), dogwood (cornus spp.), pine (pinus spp.), and scrub oak (quercus spp.). The project area is located within a typical regional climate characterized by low precipitation and humidity, with hot summers and cool winters. Temperature variations are extreme, ranging from over 90° Fahrenheit (F) in the summer to between 0° and 20° F in the winter.

Deer Creek Reservoir is located to the northeast of the project area; the Provo River flows from Deer Creek Reservoir adjacent to the Heber Valley Railroad, to the mouth of Provo Canyon in Orem. Both the Provo River and Heber Valley Railroad are located within the project area. Geographically, the project area is located near mountains, agricultural fields, and United States Route 189 (US-189), in Provo Canyon.

![Figure 3: Area Overview at the base of Provo Canyon. View to the northeast.](image)

3.0 Environmental Concerns

PEC performed brief evaluations of environmental resources within the area using local databases, previous reports, and site investigations. The evaluation included waters of the United States, wildlife and cultural resources. Although no major environmental concerns were found, sensitive resources and ecosystems such as the railroad and river corridors, will require consideration during the planning, design, and construction processes.
Wildlife
In August 2015, PEC conducted a field survey to determine if vegetation or habitat suitable for Ute ladies'-tresses (Spiranthes diluvialis) and yellow-billed cuckoo (Coccyzus americanus) were present within the project area (see Appendix E: Wildlife Resources Memo). Habitat for Ute Ladies’-Tresses was not present and although habitat for the Yellow-billed Cuckoo exists, existing recreation, and the railroad have disturbed the area enough that additional improvements to parking are unlikely to affect habitat.

Ute Ladies’-tresses
Emergent marsh wetlands were identified within the project area and were determined unsuitable for Ute ladies’-tresses presence. Emergent marsh wetlands contained standing water and are dominated by cattail (Typhus spp.), willow (Salix spp.), and dogwood (Cornus spp.). Because suitable habitat was not found within the project area, PEC recommends that the project will have no effect on Ute ladies’-tresses.

Yellow-billed Cuckoo
Less than 20 acres of habitat with an overstory of willows occurs within the project area along most of the Provo River. Additionally, human disturbances associated with the surrounding existing land uses (e.g., recreational trails, railroad use, and frequently traveled roads) make many portions of the project area undesirable for yellow-billed cuckoo nesting. Because 50 acres or more in extent of dominant riparian vegetation is not present within the project area, PEC recommends that the project will have no effect on yellow-billed cuckoo.

Waters of the United States
In August 2015 and again in August of 2017, PEC conducted a field survey to identify potential wetlands or waters of the United States. During the field survey, PEC examined areas where inundation was visible or wetland vegetation was dominant. PEC identified multiple areas that could potentially be considered jurisdictional waters of the United States. These areas were surveyed using global positioning satellite (GPS) technology and mapped with geographic information systems (GIS). (See Appendix D: Waters of the United States Memo.)

Figure 4: Wetlands in the Area. View to the southwest.
Cultural Resources

PEC conducted a preliminary cultural resources investigation in August 2015 as part of the Provo Canyon Trail Feasibility Study. The investigation examined the potential for impacting known cultural resources located within the project area. This investigation contains data within the same area as the 2017 Parking Study so the same findings are relevant. The investigation did not include a field inventory for undocumented historic and prehistoric sites potentially within the proposed trail alignment. However, PEC did conduct a query of existing data sources containing information on known cultural resources located within a 0.5 mile radius of the proposed trail alignment. The examined data sources include the Utah Division of State History (UDSH) online Preservation-Pro GIS database for cultural resources, and the National Park Service (NPS) National Register of Historic Places (NRHP) database.

Seven cultural resource inventories were previously conducted within a 0.5 mile radius of the proposed project. Fifty-three cultural resource sites were previously documented within 0.5 miles of the proposed project; 40 of which were evaluated as eligible for listing on the NRHP. The remainder were either ineligible for the NRHP or not evaluated.

Many of the existing and proposed parking areas such as Vivian Park, are near the historic Heber Valley railroad (see Figure 5). However, a majority of the grade’s railroad features have been removed, and the railroad grade is ineligible for the NRHP. Two historic railroad bridges exist in the area, Site 42WA113 and Site 42UT611. Site 42UT611 has been evaluated as eligible for the NRHP, but Site 42WA113 has not been evaluated. No other previously documented cultural resources would be impacted by any proposed parking improvements. Should the suggested parking improvements be found feasible, a field inventory should be conducted to identify any previously unknown cultural resources within the area of potential effects.

Figure 5: Vivian Park, historic railroad terminus. View to the South.
3.0 Existing Parking Facilities

The project team used site visits and traffic studies in addition to previous findings from the Provo Canyon Trail Feasibility Study, (December 2015), to assess existing parking facilities. Findings from this report represent a baseline inventory of existing parking (on-street and off-street) spaces and utilization rates during peak parking. Recent field visits were conducted in June, July, and August 2017 to verify the parking inventory. Following site visits, 2016 Google aerial photography was used to cross reference findings.

Field observations indicate areas where cars informally park and areas with inadequate striping/signage. This was mostly evident in parking adjacent to the highway. In this case, the spaces were not included in the inventory, to ensure a more conservative approach in assessing the existing supply. A summary of the canyon’s parking inventory can be found in Table 1.

<table>
<thead>
<tr>
<th>Parking Area</th>
<th># of Existing Stalls</th>
<th># of Cars Parked During Peak</th>
<th># of Cars Parked During Off-Peak</th>
<th>Need for Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 N. Park and Ride</td>
<td>28</td>
<td>34</td>
<td>26</td>
<td>High</td>
</tr>
<tr>
<td>Canyon View</td>
<td>77</td>
<td>23</td>
<td>7</td>
<td>Low</td>
</tr>
<tr>
<td>Mount Timpanogos</td>
<td>79</td>
<td>19</td>
<td>8</td>
<td>Low</td>
</tr>
<tr>
<td>Canyon Glen</td>
<td>148</td>
<td>9</td>
<td>2</td>
<td>Low</td>
</tr>
<tr>
<td>Nunn’s Park</td>
<td>65</td>
<td>8</td>
<td>3</td>
<td>Low</td>
</tr>
<tr>
<td>Bridal Veil (Lower)</td>
<td>101*</td>
<td>60</td>
<td>12</td>
<td>Moderate</td>
</tr>
<tr>
<td>Bridal Veil (Upper)</td>
<td>45</td>
<td>18</td>
<td>7</td>
<td>Low</td>
</tr>
<tr>
<td>Frazier Park</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>High</td>
</tr>
<tr>
<td>Vivian Park</td>
<td>70</td>
<td>65</td>
<td>24</td>
<td>High</td>
</tr>
<tr>
<td>Tunnel Pull Out</td>
<td>~20</td>
<td>6</td>
<td>1</td>
<td>Low</td>
</tr>
<tr>
<td>Pull Out 1</td>
<td>~4</td>
<td>1</td>
<td>1</td>
<td>Low</td>
</tr>
<tr>
<td>Ault Bridge Pull Out</td>
<td>~10</td>
<td>3</td>
<td>1</td>
<td>Low</td>
</tr>
<tr>
<td>Pull Out 2</td>
<td>~40</td>
<td>3</td>
<td>1</td>
<td>Low</td>
</tr>
<tr>
<td>Staging Area</td>
<td>~26</td>
<td>30</td>
<td>6</td>
<td>High</td>
</tr>
<tr>
<td>State Park Below the Dam</td>
<td>~30</td>
<td>5</td>
<td>1</td>
<td>Low</td>
</tr>
<tr>
<td>Deer Creek Dam</td>
<td>~100</td>
<td>6</td>
<td>1</td>
<td>Low</td>
</tr>
</tbody>
</table>

Table 1: Parking Inventory

*Includes upper auxiliary lot which is frequently empty due to difficult access.
To determine current usage patterns a parking utilization survey was conducted on Friday, July 14, 2017 between 9:00 AM and 3:00 PM. In addition, traffic patterns were also observed Saturday, July 29, 2017 and Saturday, August 19, 2017. These surveys represent the peak use, when visitors are recreating in the canyon as well as off-peak when use is reduced during work hours. The utilization survey was completed for primary designated parking areas within the study area (See Appendices A and B). Non-designated areas were also briefly examined but were not included in the study.

Existing Parking Areas:
Existing parking in the canyon is concentrated between mileposts 8 and 13 (see Figure 2 and Appendix A). These areas see the most traffic due to the parks and amenities in the area, as well as the Provo River Trail. With the extension of the Provo River Trail, planned for 2019, it is projected that more trailheads and parking areas from milepost 13 to 18 will become necessary. The majority of parking areas in the canyon serve a public park or landmark. The study focused primarily on these areas but also captured non-designated parking areas, pull outs, and turn-off areas that are commonly used for parking. The areas which were found to be the most important to the study are listed below:

- 800 N. Park and Ride/Trailhead
- Canyon View Park
- Mt. Timpanogos Park
- Canyon Glenn Park
- Nunn’s Park
- Bridal Veil Falls Area
- Frazier Park Area (Privately Owned)
- Vivian Park Area
- Tunnel Pull Out Area
- Pull Out Area 1
- Ault Bridge Pull Out Area
- Pull Out Area 2
- Staging Area
- Deer Creek State Park Below the Dam
- Deer Creek Dam

4.0 Needs Analysis
PEC evaluated existing parking conditions and compared those conditions with projected use patterns for the next 25 years to determine future parking deficits or surplus in the canyon. Each existing parking area outlined above was visited and analyzed. PEC recorded inventory data for each location which included milepost, parking capacity, amenities, use patterns, opportunities, and constraints at each parking area (see Appendix B: Existing Conditions Analysis Maps). The analysis of each location in conjunction with the establishment of an optimal parking supply
standard, were key tasks leading to the development of conceptual improvement plans.

**Optimal Parking Supply**

To effectively apply inventory data collected from each parking area, it was necessary to determine an optimal parking supply for the areas in the canyon. Optimal parking supply can be influenced by a number of factors or opinions. Some basic principles used to determine the necessary parking supply for Provo Canyon are listed in Table 2.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Favors Higher Supply</th>
<th>Favors Lower Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>How frequently will the adjacent parking areas fill?</td>
<td>Parking facilities should only fill a few times annually.</td>
<td>Parking facilities may fill as long as overflow or auxiliary parking lots are provided.</td>
</tr>
<tr>
<td>Should parking demand be accommodated on site?</td>
<td>All parking demands should be accommodated on site.</td>
<td>Auxiliary parking areas may be used if adequate signage and pedestrian routes are provided.</td>
</tr>
<tr>
<td>If auxiliary parking is allowed, what is the acceptable distance?</td>
<td>300 feet maximum with direct accessible route</td>
<td>1/4 mile if adequate directional signage and accessible pedestrian routes are provided.</td>
</tr>
<tr>
<td>Should parking supply be oversized to accommodate possible future demand?</td>
<td>Parking Supply should anticipate possible future increases in demands.</td>
<td>Parking supply should be minimized provided a contingency plan indicates how problems will be addressed if supply is inadequate.</td>
</tr>
<tr>
<td>Are environmental impacts acceptable to accommodate parking supply?</td>
<td>Environmental impacts can be mitigated and should not impede plans to accommodate parking demand.</td>
<td>Parking should be strategically placed and limited to avoid environmental impacts, unless no other alternative is feasible.</td>
</tr>
</tbody>
</table>

*Table 2: Existing Parking Conditions*

Optimal parking can vary significantly depending on which principles are applied to evaluate supply and demand. It was determined that optimal parking supply in Provo Canyon should favor a higher supply to promote safety and accommodate future demand. A parking facility designed to favor a higher supply will often be less crowded, reducing vehicular collisions and pedestrian-vehicle conflicts.

In addition, the population along the Wasatch Front is expected to grow exponentially over the next 20-40 years. This growth will continue to increase visitors to the canyon. Designing
and constructing parking facilities to favor a higher supply will reduce the amount of future construction needed when access may be more difficult.

**Current Parking Surplus and Deficits**

Once optimal parking supply is determined, the principles of optimal parking supply are used to evaluate existing conditions and identify areas of surplus and deficiency. All parking areas were evaluated based on current capacity, current use patterns, as well as projected use patterns. Potential impacts or limitations were also identified (see Appendix B: Existing Conditions Analysis Maps). PEC identified four areas that have a current or projected deficit and are recommended for improvements to increase parking supply.

<table>
<thead>
<tr>
<th>Parking Area</th>
<th># of Existing Stalls</th>
<th>Improvement Need</th>
<th>Future Demand Increase Projected?</th>
<th>Improvement Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 N. Park and Ride</td>
<td>28</td>
<td>High</td>
<td>Yes</td>
<td>Increase parking or provide alternate location</td>
</tr>
<tr>
<td>Canyon View</td>
<td>77</td>
<td>Low</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>Mount Timpanogos</td>
<td>79</td>
<td>Low</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>Canyon Glen</td>
<td>148</td>
<td>Low</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>Nunn’s Park</td>
<td>65</td>
<td>Low</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>Bridal Veil (Lower)</td>
<td>101</td>
<td>Moderate</td>
<td>Yes</td>
<td>Formalize parking, increase stalls, improve pedestrian routes and signage, create trail connection to auxiliary lot, and provide left hand turn from auxiliary lot.</td>
</tr>
<tr>
<td>Bridal Veil (Upper)</td>
<td>45</td>
<td>Low</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>Frazier Park</td>
<td>N/A</td>
<td>High</td>
<td>Yes</td>
<td>Purchase from private owners, formalize parking area, create connection from parking to trail, which will facilitate access with Vivian Park.</td>
</tr>
<tr>
<td>Parking Area</td>
<td># of Existing Stalls</td>
<td>Improvement Need</td>
<td>Future Demand Increase Projected?</td>
<td>Improvement Strategy</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------</td>
<td>------------------</td>
<td>------------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Vivian Park</td>
<td>70</td>
<td>High</td>
<td>Yes</td>
<td>Formalize parking, increase stalls, add railroad turntable and loading dock</td>
</tr>
<tr>
<td>Tunnel Pullout</td>
<td>~20</td>
<td>Low</td>
<td>No</td>
<td>Pavement Striping and Signage</td>
</tr>
<tr>
<td>Pullout 1</td>
<td>~4</td>
<td>Low</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>Ault Bridge Pullout</td>
<td>~10</td>
<td>Low</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>Pullout 2</td>
<td>~40</td>
<td>Low</td>
<td>No</td>
<td>Pavement Striping and Signage</td>
</tr>
<tr>
<td>Staging Area</td>
<td>~26</td>
<td>High</td>
<td>Yes</td>
<td>Formalize parking, increase stalls, develop connection from parking to river/trail down existing slope</td>
</tr>
<tr>
<td>Deer Creek State Park Below Dam</td>
<td>~20</td>
<td>Low</td>
<td>Yes</td>
<td>Formalize parking, increase stalls, develop connections between railroad, parking, trail and river.</td>
</tr>
<tr>
<td>Deer Creek Dam</td>
<td>~100</td>
<td>Low</td>
<td>No</td>
<td>None</td>
</tr>
</tbody>
</table>

Table 3: Parking Needs Analysis

5.0 Recommendations and Improvement Strategies
PEC evaluated existing parking conditions, compared those conditions with projected needs based on visitation and activity in the canyon, and developed concepts and strategies for improvements. Four main areas will be addressed in this report as key locations for improvements. See Appendix C: Concept Plans for Parking Areas for conceptual designs.

800 South Park And Ride
The park and ride at the mouth of the canyon is currently overwhelmed. Each site visit conducted by PEC indicated that there is not a sufficient number of parking stalls for the number of users. Space for expansion directly adjacent to the existing parking area is limited by private land ownership, environmental constraints, and other existing infrastructure.
As a potential solution for the park and ride, PEC is proposing that the open area approximately one mile northeast in the canyon be developed as an auxiliary parking lot. Increased signage at the existing parking area will be necessary to inform visitors of the available additional parking is available. PEC found during site visits that the primary reason for under used parking areas in the canyon can be attributed to the inability of visitors to easily locate open facilities. The highway in the canyon requires motorists to concentrate their focus on the roadway. Signs should be easy to read and strategically located to help direct motorists to the available parking.

**Bridal Veil Falls**

Bridal Veil Falls is the single most visited area in Provo Canyon. It receives many visitors per week and the parking areas are consistently filled with traffic. Utah County is currently working on a conceptual design for the main parking area. When the design is complete it will be added to this report. PEC’s investigation of the area recommends the following improvements.

**Upper Auxiliary Parking Area**

At milepost 11.1 there is an entrance to an auxiliary parking area for the Bridal Veil Falls area. This parking area is rarely used due to the steep slope that makes walking to the lower area to view the waterfall difficult. PEC proposes to formalize the parking in the existing footprint and add a paved accessible trail with switchbacks to mitigate the slope and facilitate access between open parking areas and viewing area.

**Main Base Parking Area**

Expansion of the main parking area is limited due to topography and proximity to the Provo River. Most of the parking area however does not have designated parking stalls marked with pavement striping. By expanding the paved area slightly and adding striping to the parking area, the capacity increases, safety improves, and parking is more efficient.

**Frazier/Vivian Park**

Vivian Park has been the center of many activities in the canyon for years. It currently serves as the termination point for both the Heber Valley Railroad and the Provo Canyon Trail which attract a variety of users. In addition, it has become an unofficial hub for tubers and kayakers that use the Provo River. With its limited parking, and the physical nature of the site being
divided by south fork road and surrounded by waterways, even with a redesign as proposed in a 2015 study, the site will eventually be overwhelmed again.

The proposed solution to this problem is to purchase the Frazier Park area, which is approximately 1/2 mile southwest of Vivian Park. Frazier Park has the potential to significantly increase the available parking in the area adding over 100 stalls. This addition has the potential to alleviate congestion at Vivian Park, create a new place for tubers and kayakers to enter and exit the river, and provide a safer more efficient parking experience.

**Existing Staging Area**

Northeast of the SR-92 turn off parking is limited in the canyon. Aside from informal pull out areas at mileposts 14.5, 15.1, and 15.5, there are no large formal parking areas south of US-189. A small parking area exists at approximately milepost 16.5 along the old highway and was previously used for staging while the new highway was built. This parking area is heavily used and often full during peak use periods on the weekends. By expanding this parking area and formalizing the layout and striping, the area will accommodate existing use, and be adequate for future growth when the Provo River extension is built.

**Deer Creek State Park Area Below Deer Creek Dam**

The area below the Dam has the most potential for a well functioning area for all recreational aspects in Provo Canyon to coexist. Existing roadways provide excellent access to the river and cross both the Provo River Trail and Heber Valley Railroad. The area however is currently under utilized. Should future efforts by the railroad to act as a shuttle service for bikers and river-goers succeed, this area will become more utilized. At that point in time parking improvements should be made and trail connections established. There are a number of existing roadways and paths that are unused and often dead-end at unimportant locations. Rehabilitating these areas now before use increases will increase the chances of successful rehabilitation before they are laden with traffic and vegetation is trampled.

**Signage and Way finding**

During the investigation of the existing infrastructure PEC found that signage and way finding improvements could drastically improve access and parking for visitors in the canyon. There are currently a number of signs in the canyon along US-189 that indicate the location of parks and amenities such as Nunns Park, Bridal Veil Falls, Canyon Glen Park, etc (see Figure 7). However, once visitors leave the main highway, signage is less apparent and way finding more difficult. To improve way-finding within the parking areas it is recommended that a detailed signage system, indicating parking areas with their associated stall count and distance, similar to the layout of the signage shown in Figure 8.
Figures 7 and 8: Signage Examples

5.0 Stakeholder Involvement
Several meetings with the project team and stakeholders were held during 2017. These meetings addressed current parking concerns in the canyon as well as potential solutions. Members of the project team included representatives from the UDOT Region 3, Wasatch County, Utah County, and the Heber Valley Railroad (See Appendix G: Meeting Minutes). No public meetings were held.

June 26, 2017 Kickoff Meeting
At the kickoff meeting, the project team agreed that the goal of the project was to produce a report that identified the feasibility of connecting the Provo-Jordan Parkway Trail that ends at Vivian Park to the trail segment that ends at Deer Creek Dam.

July 26, 2017 Concept Review
The trail alignment was presented to the Wasatch County Health Department. One funding option was to apply for Congestion Mitigation and Air Quality (CMAQ) funds from the Federal Highway Administration (FHWA). It was determined that Wasatch County is in attainment of air quality standards and would not qualify for CMAQ funds.

August 31, 2017 Meeting
It is anticipated that the project team will meet close to this date to review the draft report and make any appropriate changes. Recommendations from the counties and UDOT are anticipated and will be incorporated following this meeting.

October 25, 2017 Final Presentation
It is anticipated that following the incorporation of comments into the report, a final meeting will be held to present findings to UDOT, Utah County, and Wasatch County. It is also anticipated that various decision makers from UDOT and county commissioners from the
two counties will be present to develop strategies for funding and coordinate efforts between entities.

**Property Owner Interaction (Past and Present)**

The areas addressed by the study are almost exclusively located on property owned by UDOT or other local governments. As such, it is assumed that any improvements which are implemented will be coordinated and completed through the governing agency responsible for the specific parcel.

The Frazier Park Area, which is located southwest of Vivian Park was identified as an important location for improvement and expansion to alleviate the traffic and visitation at Vivian Park. The area is currently privately owned and it is recommended that the parcel be purchased to implement a new parking area. No formal attempts have been made to discuss the option of purchase with the current owners.

**6.0 Conclusion**

Following the inventory and analysis of existing parking facilities in Provo Canyon, the project team determined that improvement strategies should favor a higher parking supply to accommodate future growth and create safer parking areas with less congestion. Key areas identified for improvement or expansion are:

- 800 North Park and Ride/Trailhead
- Bridal Veil Falls
- Frazier/Vivian Park
- Old Highway Staging Area

Improvements in these areas will greatly improve the safety and accessibility of key points of interest in the canyon and accommodate future plans for the Provo River Trail Extension and potential programs with the Heber Valley Railroad.
Parking Study
Appendix A
Parking Study Overview Maps
Legend
- Existing Parking Areas
- Parcel Lines

Figure A-1
Parking Area Overview 1

1 Inch = 10,000 Feet

Mouth of Provo Canyon
Park and Ride

Canyon View Park

Mt. Timpanogos Park

Canyon Glenn Park
Figure A-2
Parking Area Overview 2

Legend
- Existing Parking Areas
- Parcel Lines

- Canyon Glenn Park
- Potential Rest Stop
- Nunn’s Park
- Bridal Veil Falls Park
- Upper Falls Park

Project Folder: UT17-043.1

1 Inch = 10,000 Feet

0 10,000 20,000 Feet
Parking Study
Appendix B
Existing Conditions Analysis Maps
B-1: Canyon View Park

Milepost -
• 8.4

Description -
• Owned and managed by Utah County
• Park hours are from 7:00 AM to 10:00 PM

Amenities -
• 100 person covered pavilion
• Covered and uncovered picnic tables
• Fishing access
• Volleyball Court
• Walking and Jogging Path
• Playground
• Restroom

Parking Capacity -
• Total stalls - 73
• Total ADA stalls - 4

Utilization -
• Moderate use. Parking is generally available for visitors and amenities are sufficient for the number of visitors.

Key Opportunities -
• Close proximity to Mt. Timpanogos Park and opportunity for a satellite parking area to the south west.

Key Constraints -
• Proximity to the highway and the river limit expansion in two directions. The spillway for the diversion on the river is a potential safety hazard.

Recommendations -
• Parking lot paint is worn out and causes confusion on where to park. Fresh paint would alleviate confusion and provide for a more efficient and safer parking experience.
Excellent access to trails is a key opportunity for the success of these parking areas. Increased wayfinding and trail signage would help alleviate pedestrian and cyclist confusion and allow for easier access.

Proximity to the Provo River is a key asset for the parking area. The bridge at the northeast end of the park connecting to other surrounding parking areas makes this location highly versatile.

Bathroom facilities are located in the west parking lot of Canyon View Park. A large pavilion is found just north of the East parking lot. Both structures are in good condition and meet the needs of the use patterns in the park.

Acceleration, deceleration, and designated turn lanes make accessing this parking area safe and efficient for visitors.
B-2: Mt. Timpanogos Park

Milepost -
- 8.6

Description -
- Owned and managed by Orem City
- Opened in 2005
- Park hours are from 7:00 AM to 10:00 PM

Amenities -
- Nine pavilions with barbecues
- Six restrooms
- River Access
- Hosting Center
- Ten picnic sites
- Walking and Jogging Path

Parking Capacity -
- Total stalls - 74
- Total ADA stalls - 5
- Also has two large gravel parking lots adjacent to the trail. One is open the other is closed off.

Utilization -
- Moderate use. Parking is generally available for visitors and amenities are sufficient for the number of visitors.

Key Opportunities -
- Close proximity to Canyon View Park and large open gravel parking areas which offer room for expansion.

Key Constraints -
- Parking is located far away from most amenities instead of being centrally located.

Recommendations -
- Pave gravel parking areas as needed. Add more signage along trail corridor. Refurbish bridge between Mt. Timpanogos and Canyon View Park.
Access to the Provo River Trail from the parking areas is unclear and many non designated routes are being used. Increased signage and restoration of non designated routes would improve the aesthetics of the location.

The Provo River acts as an effective buffer between the highway and the parking lots/trail.

An acceleration lane, deceleration lane, and a designated turn lane entering the park are all available increasing safety for this parking area.

Two gravel parking areas are currently unused but could benefit from pavement and striping to formalize the area. The team suggests paving the northern gravel lot with swales around the exterior instead of curb and gutter.

All structures at the Mt. Timpanogos location are in excellent condition and do not need improvements.
B-3: Canyon Glenn Park

Milepost -
• 9.8

Amenities -
• Fourteen uncovered picnic tables with grills
• Two pavilions
• Amphitheater
• Two volleyball areas
• Horse Shoe Pits
• Trail Access
• Fishing/River Access
• Restrooms
• Five open fire pits
• Water hose bibs
• Unique rock and boulder playground area

Parking Capacity -
• Total stalls - 145
• Total ADA stalls - 3

Utilization -
• Low use

Key Opportunities -
• Close proximity to Canyon View Park and large open gravel parking areas which offer room for expansion.

Key Constraints -
• Fewer amenities that are old and need to be revamped. River is close to parking lot and separates trail from parking.

Recommendations -
• Define ADA Stalls, Re-Stripe Parking Area, Reduce overall size to fit use patterns.
The biking/hiking trail borders Canyon Glen Park to the North. It connects Canyon Glen Park to the rest of the Provo Canyon. It is in great condition through this span as well. Signage is adequate to navigate through the park.

Provo River winds through the park offering fishing opportunities to those at Canyon Glen Park. The Northwest corner of the parking lot is too close to the river. The parking stalls don’t line up with the pavement. Parking should be reduced and better organized, starting with that corner.

The pavilions for the park are well located and easily accessible. Continued maintenance will preserve them as key features of this area.

Acceleration, deceleration, and designated turn lanes provide safe access to the park from the highway.

Parking stalls here are in close proximity to the river and risk damage should the bank erode. Consider removing these stalls or relocate elsewhere in the park.
B-4: Nunns Park -

Milepost -
• 10.8

Description -
• Park was named after L.L. Nunn. Nunn built a Hydroelectric power plant in 1897 which was later converted into a park.

Amenities -
• Picnic tables with grills
• 2 pavilions
• Mountain Biking trail access
• 20 Camping sites
• Trail Access
• Fishing/River Access
• Restrooms
• 8 open fire pits
• Water hose bibs

Parking Capacity -
• Total stalls - 60
• Total ADA stalls - 5

Utilization -
• Heavy use for group activities (ie. family reunions)

Key Opportunities -
• Beautiful camping sites for day and overnight use. The park’s historic hydro-electric power plant is an impressive destination for many.

Key Constraints -
• Park is frequently over-looked due to it’s close proximity to Bridal Veil Falls Park.

Recommendations -
• Define ADA Stalls, Re-Stripe Parking Area, Increase signage on Highway.
Figure B-4
Nunn’s Park Existing Conditions Analysis

Consider moving parking to be in between trail and roadway so trail users don’t have to cross traffic to access trail. The parking to the southwest is sufficient for the park area.

The small section of the Provo River that cuts through Nunn’s Park is significant as the park was originally established as one of the earliest Hydro-electric power plants. It was built by L.L. Nunn in 1897. This could become more of a destination through signage and education about the site.

Since there is no access to Nunn’s park on the northwest side of the highway, many potential users do not visit the area. Increased signage in this location would help to alert visitors of the Nunn’s Park area.
B-5 and B-6: Lower and Middle Bridal Veil Falls Park -

**Milepost -**
- 10.8

**Description -**
- Park is located just down the river from the falls. The trail winds through the park to the base of Bridal Veil Falls.

**Amenities -**
- 8 uncovered picnic tables with grills
- Trail Access
- Fishing/River Access
- Portable Restrooms
- Walking, Jogging, & Longboarding area

**Parking Capacity -**
- Total stalls - 97
- Total ADA stalls - 4
- Total RV stalls - 5

**Utilization -**
- Extremely heavy usage

**Key Opportunities -**
- A stones throw away from Bridal Veil Falls. Space to expand along the old highway.

**Key Constraints -**
- The falls and surrounding areas are privately owned by Waterfall Consultants. (David Grow Family)

**Recommendations -**
- Construct an additional parking lot to the east of the lower parking lot, Define ADA Stalls in existing lots, Re-Stripe Parking Areas, Increase signage on Highway and guiding to parking lots.
Signage is important in the area due to the split nature of the trailheads and the separation due to the highway and underpass.

This open gravel area is ideal for parking expansion. There is a bridge in place to access the trail and the area is easily accessed at the Nunn’s park turn-off.

Portable restrooms near the river in the park are a concern. With the level of use in this area of the canyon, permanent restroom structures should be considered to better serve visitors and protect natural resources.

Portable restrooms near the river in the park are a concern. With the level of use in this area of the canyon, permanent restroom structures should be considered to better serve visitors and protect natural resources.

Figure B-5
Lower Bridal Veil Falls
Existing Conditions Analysis
Signage and way finding could be improved in the area to direct pedestrians between the falls and the parking areas.

The river divides the parking area and the Falls. This preserves the beautiful environment of the Falls, but also causes heavy density on both the pedestrian bridge and nearby parking. An additional pedestrian bridge on the west side of the falls would be an effective addition to the park.

Utah county currently is in the concept development phase for improvements in this area. When the concept is available it will be added to this study.

A steep slope separates the upper parking lot from the lower one. Since the lower lot typically is full during peak use periods, establishing a connection between the two is essential.

The upper parking area is typically unused and could relieve the traffic in the lower lot.

Figure B-6
Middle Bridal Veil Falls Park
Existing Conditions Analysis
B-7: Upper Bridal Veil Falls Park -

**Milepost -**
- 11.8

**Description -**
- Forest Service land, however, the land is maintained by Utah County.
- Park hours are 6:00am - 11:00pm each day.

**Amenities -**
- Picnic tables
- Trail Access
- Fishing/River Access
- Access to Falls
- Nature Viewing Area

**Parking Capacity -**
- Total stalls - 43
- Total ADA stalls - 2

**Utilization -**
- Not used to full capacity

**Key Opportunities -**
- Upper lot is a convenient rest stop for beautiful views of the Falls and Canyon.

**Key Constraints -**
- No access from Upper lot to trail/river

**Recommendations -**
- Construct a bathroom facility for the upper parking lot and add shade trees to form a nice reststop for cars traveling down the canyon.
The trail and park are divided by the river.

Parking area is relatively unused and parking can almost always be found even during peak use periods.

There is currently no access from this parking to the Provo Canyon Trail. The bridge is not accessible to the public.

Figure B-7
Upper Bridal Veil Falls Parking Area Existing Conditions Analysis

Project Folder: UT17-043.1

1 inch = 80 Feet

Parking area is relatively unused and parking can almost always be found even during peak use periods.

There is currently no access from this parking to the Provo Canyon Trail. The bridge is not accessible to the public.
B-8: Frazier Park-

Milepost -
  • 12.65

Description -
  • Privately Owned Land.

Amenities -
  • No formal amenities
  • Enough space for 100+ parking stalls

Parking Capacity -
  • Total stalls ~100
  • Total ADA stalls – none designated

Utilization -
  • Private land but still used by some recreational visitors.

Key Opportunities -
  • Proximity to Vivian Park Makes this parking area crucial.
  • Water current is slow enough to successfully enter and exit river with tubes.

Key Constraints -
  • River separates the parking area from the trail. A bridge would be needed to effectively accommodate pedestrians.

Recommendations -
  • Purchase property and formalize as a public parking area. Install pedestrian bridge to provide access to trail.
A wetland area southwest of the parking lot limits expansion of the existing parking area.

The Provo River separates the trail from the parking area making it impossible for trail users to access the parking area.

An avalanche shoot limits the amenities that can be constructed in this area. Any structures will need to be constructed to the northeast or southwest of the shoot.

Privately owned land currently limits use of this area by the public.
B-9: Vivian Park -

Milepost -
- 14

Description -
- 4 acres of land that is owned and managed by Utah County.

Amenities -
- Picnic tables and BBQ grills
- Trail Access - Walk/Bike
- Horseshoe Pits
- Fire pit
- Volleyball area
- Fishing pond
- River Access
- 2 Pavilions
- 2 Playgrounds
- 2 Restroom facilities
- Nature Viewing Area

Parking Capacity -
- Total stalls - 66
- Total ADA stalls - 4

Utilization -
- Moderately heavy usage

Key Opportunities -
- Central to the Park is the famous Heber Creeper Railroad, and with future improvements, additional parking may be required.

Key Constraints -
- Historic buildings and privately owned land boarder the Park.

Recommendations -
- Expand Parking to the south and to the west.
Wetlands and waterways limit expansion to the south of Vivian Park.

The River acts as a buffer from the roadway separating the traffic from US-189 from the park area.

There is currently no formal loading and unloading location for the train. In addition, the train cannot turn around so the main locomotive has to reverse back to the hub in Heber. A turntable has been considered for the location.

Parking is currently not sufficient for the demand at Vivian Park. Circulation is also a problem in both parking areas due to the dead-end parking lot design.

Figure B-9
Map Title and Location

Project Folder: UT17-043.1
B:10 - Tunnel Pull-out Area -

Milepost -
• 14.5

Description -
• Tunnel construction completed in 1997. Small street wraps around the outside of the tunnel and is used for parking by fisherman.

Amenities -
• River/Fishing Access
• Portable Restroom

Parking Capacity -
• Parking Capacity - Approximately 20 cars parked parallel along river side of street.

Utilization -
• Heavily used

Key Opportunities -
• Potential rest stop for cars traveling up the canyon. Nice views of the river and of the impressive tunnel architecture.

Key Constraints -
• Very limited space between the mountain side and the river.

Recommendations -
• Pave and paint parallel parking stalls and construct a permanent bathroom to be used as a parking lot and a rest stop.
No access is allowed for southwest bound traffic.

The river separates the railroad and future trail from the highway so access to the trail will be limited. This parking area would better serve fisherman who will be wading.

The pullout parking area has approximately 400 linear feet of usable space. There is no existing striping or markings on the pavement to delineate the parking.
B-11: Old Highway Staging Area -

Milepost -
• 17

Description -
• Location of future trail along old highway.

Amenities -
• Trail Access - Walk/Bike
• River Access
• Nature Viewing Area

Parking Capacity -
• Parking capacity - Approximately 15 stalls

Utilization -
• Used beyond full capacity

Key Opportunities -
• The expansion of the river trail will bring many bikers and joggers to this area.

Key Constraints -
• Old highway becomes a private drive following the parking area.

Recommendations -
• Form a destination/node for bikers and hikers around this parking lot.
• Pave the parking lot and redesign to fit more cars.
• Add signage to familiarize the public with the new park.
Old Highway Staging Area

Existing Conditions Analysis

Figure B-11

Existing parking area is frequently full and highly used.

Existing staging area has suitable topography for parking expansion in the future.

A steep slope discourages most users from accessing the river in this location. However, when the Provo Canyon Trail Extension occurs, access down the slope will become more important.

Future Provo Canyon Trail Extension will add traffic to the area and require additional parking and trailheads.

Project Folder: UT17-043.1

1 inch = 80 Feet

Feet
B-12: Deer Creek State Park Area -

Milepost -
• Enter at 17.1

Description -
• Area below Deer Creek Dam. Part of Deer Creek State Park.
• Access drive enters into state park as well as provides access to some private areas.

Amenities -
• Trail Access - Walk/Bike
• Restroom facility
• River Access

Parking Capacity -
• Undesignated parking areas with no striping. Most are unpaved.

Utilization -
• Under utilized

Key Opportunities -
• Close to railroad with great river access. Opportunity for a railroad platform that would allow users to access the river and ride the railroad back after arriving at Vivian Park.

Key Constraints -
• Railroad tracks run to the north of the parking area.

Recommendations -
• Formalize parking areas. Rehabilitate unnecessary drive areas. Add railroad stop with platform. Create parking area where old materials are stored.
Old staging area is flat and has sufficient space for parking improvements. It is also centrally located between the river and railroad.

Existing roadways and paths are unused and disconnected due to the railroad. These areas can be repurposed into dedicated pedestrian corridors.

Great river access. This area has the potential to serve as a boat launch for kayakers and rafters.

Existing restrooms

Informal parking area could be improved with striping. In general this area is under utilized.

Figure B-12
Deer Creek State Park Areas
B-13: Deer Creek Dam Trailhead -

Milepost -
• 18

Description -
• Deer Creek Dam Trail follows the west shore of the reservoir.

Amenities -
• Trail Access - Walk/Bike
• Restroom facility

Parking Capacity -
• Parking: Paved area - 170’x 150’, Gravel area - 150’x 105’

Utilization -
• Under utilized

Key Opportunities -
• Beautiful node for bikers, hikers, ATVs, horses, and cars. Close proximity to the reservoir, the railroad, and many trails.

Key Constraints -
• Railroad tracks run to the north of the parking area.

Recommendations -
• Stripe the existing parking lot and add signage along the highway to draw attention to the trailhead.
Large open parking area is primarily used for ATV type recreation but has plenty of space for all visitors to the canyon and is rarely full.

Due to its disconnected location from the main highway, additional directional signage may be necessary for visitors to easily find this parking area.
Design Intent

The park and ride area at the mouth of the canyon is under capacity and consistently full. At less than a mile away, this open field area is suitable for overflow parking and would be easily accessible with signage at the lower lot indicating more space up the road. A simple design maximizes stalls and provides safe circulation and pedestrian paths.

The proposed design also has a direct connection to the Provo Canyon Trail and utilizes the existing bridge.

Notes

- Total Parking Stalls - 134
- Total Existing Stalls - 0
Design Intent

The Bridal Veil Falls area is easily the most popular area in the Canyon and is heavily used, especially on peak days like Saturday. At peak times, the parking area is congested and parking is difficult to find. There is currently space to gain additional stalls while formalizing existing parking.

In addition, by rehabilitating the ramp to ensure ASHTO compliance from the upper to lower parking areas, the upper lot becomes more useful for all visitors and could help alleviate the demand experienced in the lower parking lot. Increased signage indicating access to the lower lot is also recommended.

Notes

Total Proposed Parking Stalls - 82
Total Existing Parking Stalls - 59
- Designated - 39
- Non designated - 20

Figure C-2
Bridal Veil Falls Base Area
Design Intent
By expanding the parking area in this location, it will help to alleviate the congestion and parking demand at the main Bridal Veil Falls location. There is sufficient space and the topography is adequate to support the proposed design without major modification.

Notes
Total Parking Stalls - 66

Figure C-3
Bridal Veil Falls Park Area
One concern for this parking area is accommodating users that wish to make a left turn out of the parking area and merge with southbound traffic. An existing center barrier along with steep slopes northwest of the highway limit the ability to add an acceleration lane. In addition, curves before and after the parking area limit visibility. A more in-depth traffic analysis is recommended to study potential solutions for this area.

**Design Intent**

Frazier Park is currently privately owned. If purchased for improvements, this parking area could serve as an overflow/auxiliary lot for Vivian Park which is currently heavily used and lacks capacity for the demand. This area would also provide a place for leisure river users to exit the river after tubing, kayaking, or canoeing, which would allow Vivian Park’s primary purpose to be that of a railroad hub.
Design Intent
By incorporating striping that designates 60 degree parking, the parking area will be safer. Vehicles will not need to back out as far, maintaining a greater separation between the parking area and traffic.

Notes
Total Parking Stalls - 13
Design Intent

This parking area has a large amount of space, but currently has no designation or striping. By adding a large island between the highway and the pullout, it improves safety and creates a buffer between the proposed parking and traffic. Striping on the asphalt will also help improve circulation and avoid confusion between motorists.

With these improvements, no parking islands are proposed to maintain the ease of access for snow plows in the winter. If the buffer space is excavated lower than the parking lot, it could also serve as a suitable snow storage location.

Notes

Total Parking Stalls - 65

Figure C-6

Pull Out #2
Design Intent
This area currently acts as an abandoned staging area for the highway construction project. Fishermen currently use the parking area to access the river and with the future extension of the Provo River Trail from Vivian Park to the Deer Creek Dam, this trailhead will see more use.

The area is already disturbed and both the space and the topography allow for the proposed design, which will allow for an increase in capacity and improved circulation.

Notes
Total Parking Stalls - 136

Figure C-7
Old Highway Staging Area
Design Intent

The area below Deer Creek Dam has tremendous potential to offer visitors parking and river access. By formalizing existing parking areas, repurposing old staging areas and roadways into parking lots and trails, and rehabilitation of unnecessary access roads, the area will become more functional and circulation patterns will be simpler and safer for users eliminating confusion.

Notes

- Total Parking Stalls: 83
- Existing Parking Stalls: Unknown/Undesignated

Figure C-8

Deer Creek State Park Area
Design Intent
This area currently serves as a parking area for fishermen accessing the dam of Deer Creek Reservoir as well as trail users. The parking area is not striped and there are no formal stalls. Although overall capacity appears to be reduced, by formalizing the parking area and designating drive aisles and stalls, the parking area becomes safer and more effective during peak use periods.

Notes
Total Parking Stalls - 61
Existing Parking Stalls - Unknown/ Non-designated
Introduction

In June 2017, the Utah Department of Transportation (UDOT), contracted with Project Engineering Consultants Ltd. (PEC) to complete a parking study for the US Route 189 from milepost 8 to milepost 18 in Provo Canyon. The project was conducted to identify, analyze, and make recommendations for the improvement of parking areas in the canyon. PEC evaluated the project area (see Figures 2-4) in August 2017 for potential jurisdictional wetlands and waters of the United States.

Project Location and Habitat Description

The project is located between Orem and Heber City, Utah in Township 5 South Range 3 East, Sections 13, 24, 25, and 26. Elevations in this location range from approximately 5,205 feet to 5,270 feet (1,586 meters to 1,606 meters) above sea level. The project area is located at the base of the Wasatch Mountains. Soils within the project area are generally disturbed from the Heber Valley Railroad, US-189 Highway and historic settlement, and recreation near the Provo River. Vegetation is primarily composed of willow trees, dogwood, pine trees, and scrub oak (see Figure 1). The project area is located within a typical regional climate characterized by low precipitation and humidity, with hot summers and cool winters. Temperature variations are extreme, ranging from over 90° Fahrenheit (F) in the summer to between 0° and 20° F in the winter.

Located to the northeast of the project area is Deer Creek Reservoir; Deer Creek Reservoir is a large reservoir that is geographically surrounded by mountains, agricultural fields, and small
metropolitan areas, including the cities of Midway, Heber City, and Charleston. Provo River connects to the north and south of Deer Creek Reservoir and flows to the southwest into Utah Lake.

**Provo River**
The Provo River flows adjacent to the Heber Valley Railroad and US-189 throughout the project area. Because the Provo River has a significant nexus with Utah Lake, the Jordan River, and the Great Salt Lake, and effects interstate commerce, it is a jurisdictional water regulated by the Army Corps of Engineers.

**Wetlands**
PEC consulted the current National Wetlands Inventory (NWI) maps to assess potential wetlands in the area that could be impacted by necessary parking improvements. Wetlands were also field verified based on presence or absence of hydrologic indicators and/or hydophytic vegetation. Hydrologic indicators such as inundation, water stained leaves, saturation in soils, drift marks, or debris deposits were observed. If any of these indicators were observed and a majority of hydrophytic vegetation existed in the area then it was assumed that hydrophytic soils would be present and PEC used global positioning satellite (GPS) technology to map approximate wetland boundaries. No soil samples were excavated, nor were transects completed to determine absolute cover of hydrophytic vegetation.

PEC observed multiple inundated areas with an abundance of Red Osier Dogwood (*Cornus sericea*), Coyote Willow (*Salix exigua*), Common Cattail (*Typha spp.*), and various species of sedges (*Carex spp.*) indicating the likelihood of wetlands. Because these potential wetlands are located in proximity to the Provo River and a significant nexus is likely, PEC recommends that a jurisdictional wetland delineation be completed and submitted to the Army Corps of Engineers prior to design and construction.
This page was produced by the NWI mapper.

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.
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Inset C

August 7, 2017

Wetlands
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.
Introduction

In June 2017, Utah Department of Transportation (UDOT) in cooperation with Wasatch County and Utah County contracted with Project Engineering Consultants Ltd. (PEC) to complete a preliminary feasibility study for a 2.75-mile (4.42-kilometer) linear project area along the Heber Valley Historic Railroad and Provo River in Wasatch County, Utah. PEC evaluated the project area (see Figures 1–2) on August 12, 2015 for vegetation and habitat suitable for *Spiranthes diluvialis* (Ute ladies’-tresses) and *Coccyzus americanus* (yellow-billed cuckoo).

Project Location and Habitat Description

The project is located between Provo and Heber City, Utah in Township 5 South Range 3 East, Sections 13, 24, 25, and 26. Elevations in this location range from approximately 5,205 feet to 5,270 feet (1,586 meters to 1,606 meters) above sea level. The project area is located at the base of the Wasatch Mountains. Soils within the project area are generally disturbed from the Heber Valley Railroad, historic settlement, and recreation near the Provo River. Vegetation is primarily composed of willow trees, dogwood, pine trees, and scrub oak (see Figure 1).

The project area is located within a typical regional climate characterized by low precipitation and humidity, with hot summers and cool winters. Temperature variations are extreme, ranging from over 90° Fahrenheit (F) in the summer to between 0° and 20° F in the winter.

Located to the southwest of the projected trail is Deer Creek Reservoir; Deer Creek Reservoir is a large reservoir that is geographically surrounded by mountains, agricultural fields, and small
metropolitan areas, including the cities of Midway, Heber City, and Charleston. Provo River connects to the north and south of Deer Creek Reservoir and flows to the southwest into Utah Lake.

**Ute Ladies’-Tresses**

Ute ladies’-tresses (*Spiranthes diluvialis*) is a member of the orchid family. It was first described in 1984 and was federally listed as “threatened” in January, 1992. Populations have been found in Utah, and the elevation ranges in which populations have been found vary from 750 to 7,000 feet, with most populations above 4,000 feet. It is found in wetlands and riparian areas, including spring habitats, mesic meadows, river meanders, and floodplains. They require open habitats, and populations decline if trees and shrubs invade the habitat. They are not tolerant of permanent standing water and do not compete well with aggressive species such as reed canary grass (*Phalaris arundinacea*). Flowers bloom during mid-August through mid-September.

Emergent marsh wetlands were identified within the project area and were determined unsuitable for Ute ladies’-tresses habitat. Emergent marsh wetlands contained standing water and vegetation including cattail, willow, and dogwood. Because suitable habitat was not found within the project area, we recommend that the project will have no effect on Ute ladies’-tresses.

**Yellow-Billed Cuckoo**

The yellow-billed cuckoo (*Coccyzus americanus*) is a federally listed “threatened” species. Yellow-billed cuckoos arrive in Utah in extremely late May or early June and breed in late June through July and are usually found in habitat characterized by large tracts of dense sub-canopy or shrub layers such as willow (*Salix* spp.), cottonwood (*Populus* spp.), mesquite (*Prosopis* spp.), or other riparian shrubs situated close to water.

According to “A Natural History Summary and Survey Protocol for the Western Distinct Population Segment of the Yellow-billed Cuckoo” by Halterman and others, yellow-billed cuckoos are riparian obligates and currently nest almost exclusively in low to moderate elevation riparian woodlands with native broadleaf trees and shrubs that are 50 acres or more in extent within arid to semiarid landscapes. They are most commonly associated with cottonwood-willow-dominated vegetation cover, but the composition of dominant riparian vegetation can vary across its range. Yellow-billed cuckoos have not been found nesting in isolated patches (1–2 acres) or narrow, or linear riparian habitats that are less than 10–20 meters (33–63 feet) wide.

Less than 20 acres of habitat with an overstory of willows is established within the project area along most of the Provo River. Additionally, human disturbances associated with the surrounding existing land uses (i.e., recreational trails, railroad use, and frequently traveled roads) make many portions of the project area undesirable for yellow-billed cuckoo nesting. Because 50 acres or more in extent of dominant riparian vegetation is not present within the project area, we recommend that the project will have no effect on yellow-billed cuckoo.
Figure 1: Vivian Park parking area. View to the east.

Figure 2: Parking along old highway near Bridal Veil Falls. View to the Southwest.
Figure 3: Weekday parking at Bridal Veil Falls. View to the Northeast.

Figure 4: Access stairs. View to the Northeast.
Figure 5: Main parking area at Canyon View. View to the Southeast.

Figure 6: Roundabout at Canyon parking area. View to the East.
Figure 7: Parking interface with power lines at the mouth of the canyon. View to the North.

Figure 8: Full parking lot at the mouth of the canyon. View to the North.
Figure 9: Main Parking lot at Mount Timp Area. View to the East.

Figure 10: Gravel parking at Mount Timp Area. View to West.
Figure 11: Traffic and parking at Bridal Veil Falls Park. View to the Southeast.

Figure 12: Vacant parking lot at Canyon Glenn Park. View to the East.
Figure 13: Vivian Park parking lot. View to the southeast.

Figure 14: Vivian Park parking area. View to the east.
Meeting Minutes
Provo Canyon Parking Study
June 26, 2017

1. PEC’s traffic study identified 341 accidents in 2 years within the 10 mile study section.
2. At Milepost 11.9 there is a large parking area but since there is no access to bridal veil falls it is not used. (Are crossings over the highway feasible?)
3. Sundance Resort operates car pooling from the parking area at milepost 9.8
4. Could we potential fit a mitigation site for the project near milepost 8.0 and 8.1.
5. Frazier Park, at milepost 12.6-12.7 is a likely place for expansion. Utah County will buy the land if UDOT will build the bridge.
6. PEC’s next steps are to 1) Get counts fore all existing parking stalls. 2) Add the Vivian Park Concept plan into the parking study. 3) Add any relevant environmental data from the Provo Canyon Trail Study to the Parking Study.
7. The old highway staging area trailhead at milepost 16.5 will become important in the future and should be considered for expansion.
8. PEC to set up meetings with Utah and Wasatch County
9. Next Meeting scheduled for 3-4 weeks from now. Mid July. PEC to Schedule meeting
10. What are the primary concerns for the improvements? Weather, Maintenance, Environmental Impacts
Meeting Minutes
Provo Canyon Parking Study
July 26, 2017

1. Overview of parking areas.
2. Canyon View Parking Area - Restroom is open year round.
3. Timpanogos Parking Area - Story telling events draw visitors to the area. Also consider paving but no curb and gutter.
4. Nunn’s Park county owned and the campsites fill up every weekend.
5. Bridal Veil Park is maintained by Provo City.
6. Bridal Veil Falls - Utah County owns and operates the lower lot. UDOT owns the upper lot. Certain areas are gated off for Avalanche control. Can these gates be moved or adjusted?
7. The county is looking at options to improve this area. They may divert wheeled traffic such as bicycles from above falls down to Nunn’s park so that the segment from the falls to Nunn’s park is foot traffic only.
8. The county would like to consider stairs or a trail between the lots. UDOT will need to look into what type of agreement would be needed.
9. Upper Falls area is owned and operated by the forest service. This area is not heavily used.
10. PEC to look at the area above upper falls that is owned by the Central Utah Water Conservancy District. Asphalt would likely be ok but other infrastructure would not be allowed.
11. PEC to look at a design for frazier park and vivian park to see how much parking could be added between the two.
12. The turntable for the railroad at Vivian Park is still a viable option but the county and the railroad would need to draft an agreement.
13. PEC to prepare and send the Vivian Park Master plan to Mark with the Heber Valley Railroad.
14. The pull out areas near the tunnel and Ault’s Bridge should be striped. PEC to prepare concepts for those areas.
15. PEC to research Frazier Park. How many acres? What are the exact parcel lines. Is it in the flood plain?
16. Matt Parker (PM) would like to present the report draft to Terry at the Future Development Meeting. Need Date?