PROVO-OREM BUS RAPID TRANSIT

ENVIRONMENTAL ASSESSMENT

EXECUTIVE SUMMARY

The Preferred Alternative

BRT will have an estimated 16,400 riders per day in 2030, compared to 3,600 current riders per day on bus route 830.

The 800 South interchange overpass is expected to relieve congestion on the University Parkway interchange by 5%, and it would provide a much-needed connection to the Orem Intermodal Center for autos, BRT, pedestrians, and cyclists.

What is the proposed project?

The Utah Transit Authority (UTA) and the Utah Department of Transportation (UDOT) propose to build a bus rapid transit (BRT) system through the cities of Provo and Orem in Utah County, Utah. The Provo-Orem BRT is a multi-modal project that addresses transit as well as roadway infrastructure needs.

UTA intends to request federal funding under the Federal Transit Administration's (FTA) Small Starts program. UTA has prepared a separate Alternatives Analysis report per FTA Small Starts guidance. The Alternatives Analysis report, dated October 2010, documents the recommended Locally Preferred Alternative carried forward as the Preferred Alternative in this document. The alternatives considered are also summarized in Chapter 2 of this Environmental Assessment (EA). The Preferred Alternative, as shown on Figure ES-1: Preferred Alternative, includes:

- BRT service from the Orem Intermodal Center at 800 South and Interstate 15 (I-15) to Utah Valley University (UVU), Brigham Young University (BYU), the Provo Intermodal Center, and University Avenue and I-15 (Phase I)
- Two additional general purpose lanes on University Parkway from State Street to University Avenue (Phase I)
- New high-occupancy/toll (HOT) interchange overpass at 800 South and I-15 in Orem to serve BRT, autos, pedestrians, and cyclists (Phase II)

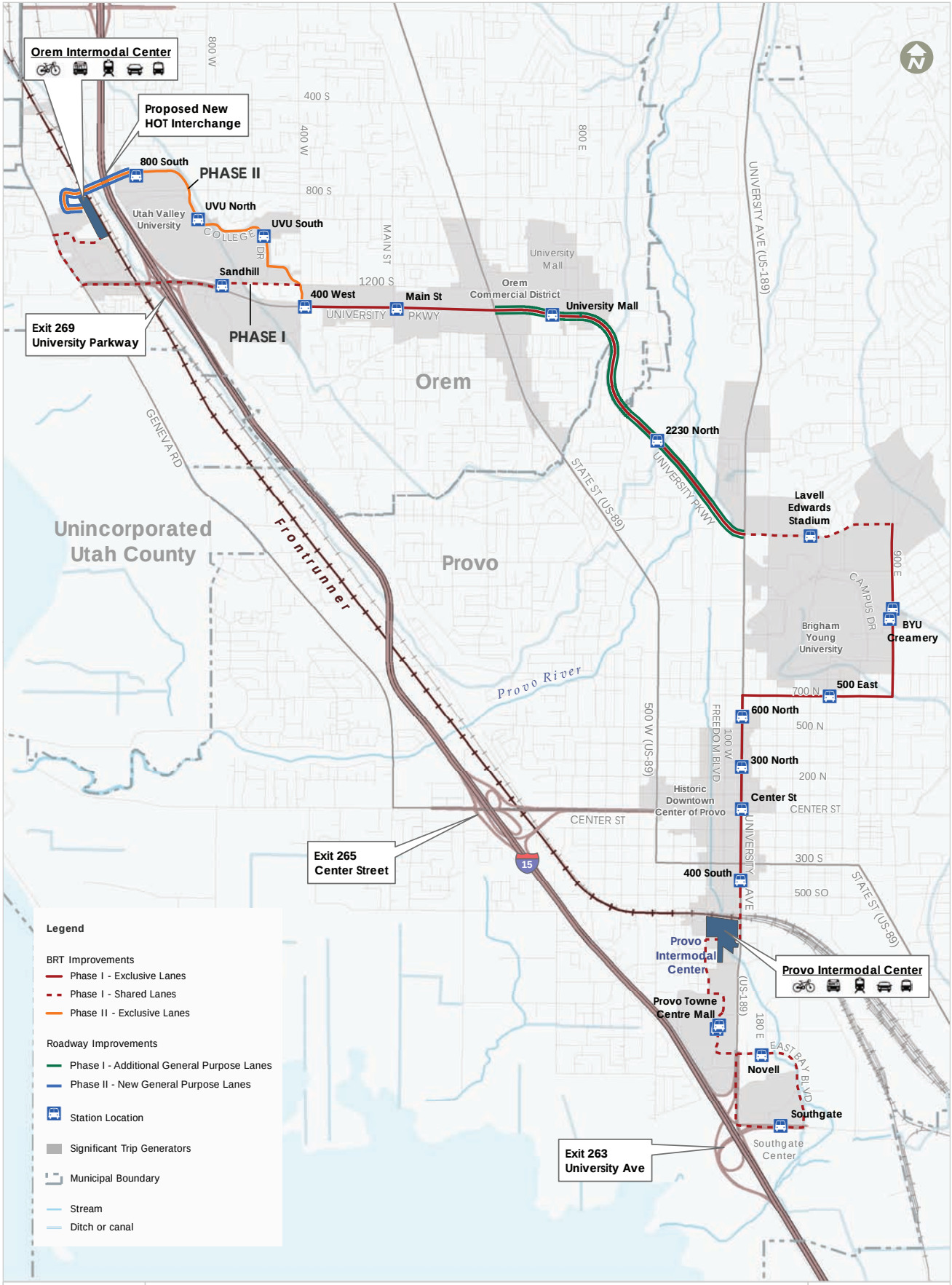


Figure ES-1 Preferred Alternative

What are the details of the project and what will it cost?

Project Details

	Phase I	Phase II
Length	10.5 miles	11 miles
Stations	17 (2 commuter rail)	19 (2 commuter rail)
Exclusive Lanes	53%	71%

It is estimated that approximately 4,200 car trips will be converted to transit as a result of the proposed project.

Project Statistics

	Current Bus Route 830	BRT Phase I (2030)	BRT Phase II (2030)
Ridership	3,600 / day	16,100 / day	16,400 / day
Frequency	15 mins	5 mins[1]	5 mins[1]
Travel Time	45 mins	34 mins	36.5 mins[2]
Reliability	84%	Estimated at 95%	Estimated at more than 95%
Person-Throughput[3]		30% higher than the No-Action Alternative	

1. During peak periods
2. Increased travel time over the Phase I project is due to longer project length.
3. Person-throughput is the number of persons traveling on the corridor by car and transit in the peak hour.

BRT Phase II will improve transit reliability by avoiding the congested University Parkway interchange, and it will provide better access to UVU.

Cost

	Phase I	Phase II
Transit Improvements	BRT on University Parkway and University Avenue ($156 million (2013 dollars))	Transit lanes on interchange at 800 South Exclusive transit lanes on UVU Campus Drive ($18 million)
Roadway Improvements	Two general purpose lanes on University Parkway from State Street to University Avenue ($21 million)	Interchange at 800 South and I-15 to serve transit, autos, pedestrians, and cyclists
Total	**$177 million**	**$120 million**

University Avenue looking north, just south of Center Street, Provo, Utah

How is BRT different than regular bus service?

BRT will be faster, more frequent, and more reliable than regular bus service. BRT service includes:

- Exclusive lanes to bypass congestion

- Stations with shelters, seating, and level-boarding

- Off-board fare collection (using ticket vending machines) for faster boarding
- Real-time bus arrival information at stations

- Increased frequency to 5 minutes at peak periods, compared to 15 minutes currently

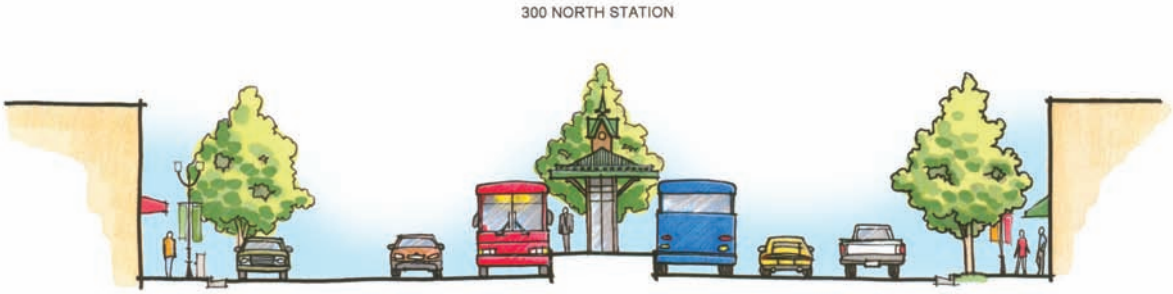
Transit Signal Priority (TSP)

Signal priority allows buses to arrive and travel through intersections with little or no delay. Detectors identify and distinguish buses from other vehicles. The detectors then extend the green time if the bus is approaching.

What type of stations will be built?

Stations are planned mainly as single-center stations, but there are a few side stations in locations where there are no exclusive lanes. The center-station design has only one platform that will serve both directions of travel. The platform is located in the center of the roadway between the exclusive BRT lanes. There are several advantages of the single-center station, including:

- Less confusion for passengers as to which platform to use
- Reduced cost when compared to two split far-side platforms
- Stations can be located on either side of the intersection
- Pedestrians only need to cross half the road to get to a station



What type of vehicles will be used?

- Thirty 60-foot, articulated, low-floor, high-capacity buses specially designed with doors on both sides
- Vehicles will be hybrid electric powered

Source: sites.google.com/site/columbusbusplan/brtcasestudies

Plan view rendering of University Avenue between 200 North and 300 North, Provo, Utah

Who is leading this project?

FTA, UTA, UDOT, and the Federal Highway Administration (FHWA)—in cooperation with the Mountainland Association of Governments (MAG)—are leading the project.

What is the purpose of the project?

The purpose of the project is to:

- Increase transportation capacity to accommodate growing population, employment, student enrollment, and travel demand in the year 2030.
- Improve transit competitiveness with the automobile by improving transit reliability and reducing transit travel time.
- Improve transit connections to and from FrontRunner commuter rail.
- Improve multi-modal connectivity across I-15 and from I-15 to Orem and Provo.

The Preferred Alternative is expected to reduce the time to travel from Salt Lake City to BYU on transit from 1 hour 20 minutes to 1 hour 7 minutes.

What are the environmental impacts of the project?

The environmental impacts of the Preferred Alternative are described in Chapter 3 of this EA. In general, the No-Action and Enhanced Bus Alternatives have little to no environmental impact. Table ES-1 (pages 7 to 9) summarizes the potential impacts to resources in the study area (including Phase I and Phase II). Impacts are also shown on Figure ES-2: Summary of Environmental Impacts (see page 10).

Table ES-1: Summary of Environmental Impacts of the Preferred Alternative

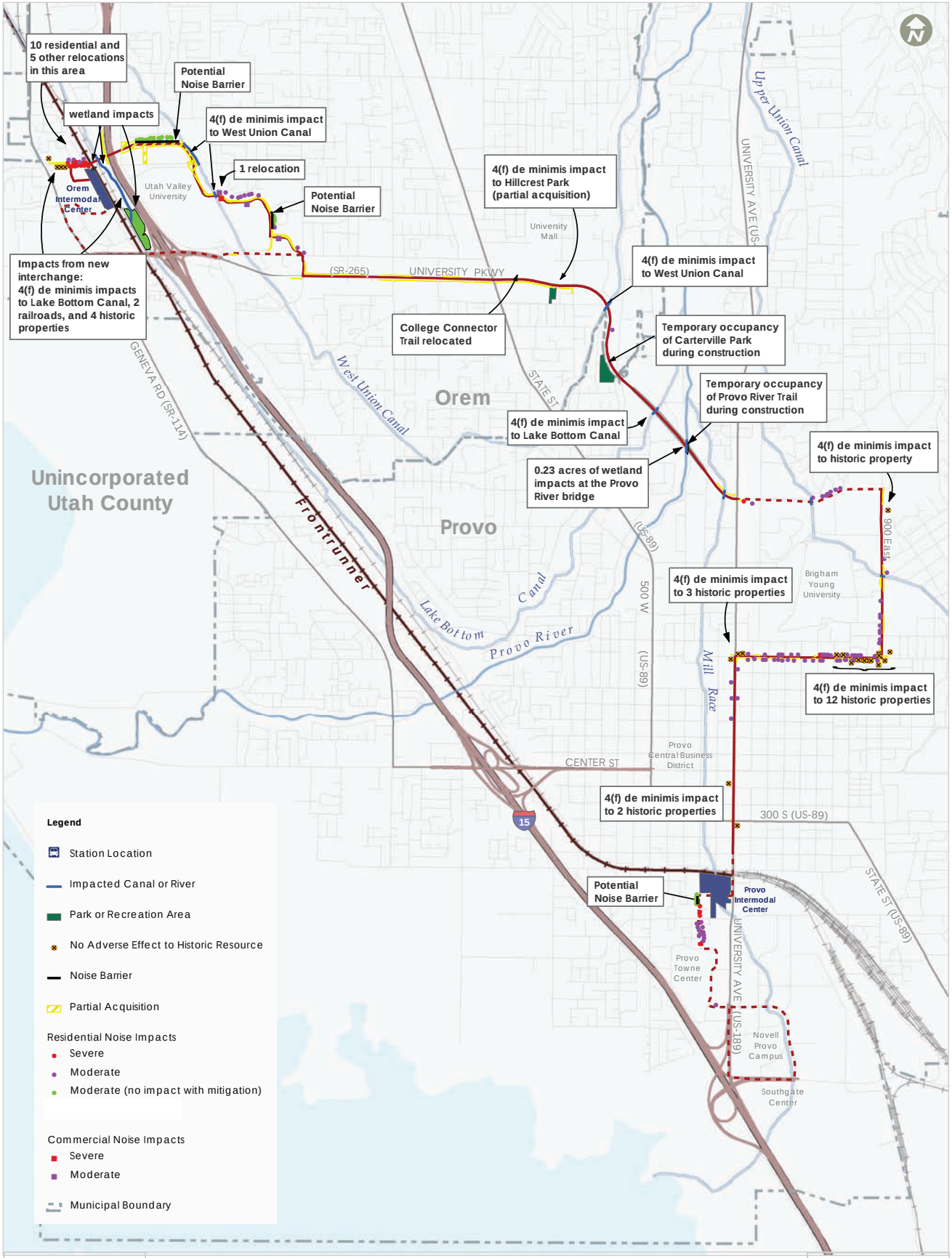
Resource	Impact	Mitigation
Economic	The Preferred Alternative would attract transit-oriented development investment.	None
Community Character and Cohesion	The Preferred Alternative would result in improved transportation accessibility and pedestrian connections, and increased traffic volumes on some local roads near the 800 South interchange.	1) A neighborhood entrance would be constructed at 800 West and 800 South. 2) A buffer area approximately 40 feet wide would be considered between the new road at 800 South and the back of the homes on 680 South. 3) The stakeholder committee established during the environmental phase (which included residents from 680 South and 800 South) would continue during final design to finalize mitigation concepts.
Environmental Justice	No impact because minority and low-income populations are distributed throughout the study area and are not concentrated in certain neighborhoods.	None
Land Use and Zoning	The Preferred Alternative would attract redevelopment and transit-oriented development investment near stations. The new interchange could change land use from residential to commercial near 800 South.	None
Land Acquisition, Displacements, and Relocations	The Preferred Alternative would result in 126 partial acquisitions and 16 full acquisitions (10 residential relocations, three industrial relocations, one UVU structure relocation, one agricultural relocation, and one vacant lot).	Property acquisitions would be completed according to federal guidelines and UTA and UDOT policies. Regulations include fair compensation for property owners and qualified renters. UTA and UDOT would comply with Title VI of the Civil Rights Act of 1964 and the Uniform Relocation Assistance and Real Property Acquisition Policies of 1970, as amended.
Historic Properties	The Preferred Alternative would result in *no adverse effects* to 22 historic properties, 1 historic district, and 4 archaeological and linear historic resources.	None
Paleontological Resources	No impact	None
Visual Quality	Improvements are consistent with the urban landscape, so overall impacts would be minor. Viewshed for residences near the 800 South interchange would be affected, and mature trees and landscaping would be affected in some locations.	1) Street-side vegetation would be maintained and preserved wherever possible. 2) BRT stations would be designed and constructed to be compatible with the surrounding landscape. 3) A buffer area would be considered south of 680 South to offset visual impacts.
Parks and Recreation Resources	The Preferred Alternative would result in minor impacts to two existing parks, one planned park, and two existing separated trails (College Connector Trail and Provo River Trail).	UTA would coordinate with Provo City and Orem City to ensure trails and bike lanes remain accessible and safe during construction through the use of striping, signage, raised crosswalks, flags, and signalization. A trail user outreach/communication plan would be developed to notify users of trail closures/detours resulting from construction. Construction activities that interrupt trail use would be scheduled during periods of low trail use, when possible.

Table ES-1: Summary of Environmental Impacts of the Preferred Alternative (cont'd)

Resource	Impact	Mitigation
Air Quality	The project does not create or contribute to any new or existing carbon monoxide or PM_{10} violations of the National Ambient Air Quality Standards and conforms to the purpose of the regional State Implementation Plan.	None
Noise and Vibration	The Preferred Alternative would result in 121 moderate noise impacts and 10 severe noise impacts (FTA Category 2) and six moderate impacts (FTA Category 3) (assuming the construction of three noise barriers). There would be no vibration impacts.	Noise barriers would be considered at 680 South (College Drive, north), 500 West (College Drive, south), and Ridgecrest Circle.
Biological Resources	The Preferred Alternative would impact 3.7 acres of wetlands. Of those, 0.23 acres would be impacted near the Provo River in Phase I. The remaining wetland impacts would occur as part of Phase II. Minimal impacts to wildlife and aquatic habitat are expected.	1) Pre-construction surveys would be conducted for migratory birds and Ute ladies-tresses near the Provo River. 2) Best management practices would be implemented to reduce debris and sediment entering the Provo River to minimize potential impacts to June sucker and its habitat.
Water Resources	There are potential minor impacts to the Provo River, canals, and water quality.	1) Storm water runoff would be routed through detention basins where feasible. 2) Design plans would be submitted to the Department of Water Quality if end of pipe discharge is 5 cubic feet per second (cfs) or greater (for new storm drain construction). 3) Discarded asphalt and phosphate rock would not be used for fill material. 4) Temporary erosion would be controlled through best management practices and Utah Pollutant Discharge Elimination System permit requirements. 5) No dry wells would be constructed in Drinking Water Source Protection Zones 1 or 2 for Orem Well 1. 6) Underground Injection Control inventory forms would be filed with DWQ prior to construction of dry wells. 7) Wells would be replaced or water rights would be purchased if a well must be relocated. 8) A floodplain development permit would be obtained before construction within a special flood hazard area.
Hazardous Materials	Four underground storage tank sites are located directly adjacent to the proposed corridor, and therefore could pose a contamination risk during construction.	If a contaminant from an underground storage tank or leaking underground storage tank is encountered during construction, UTA would take appropriate measures to remove affected material. Disposal of hazardous waste would be carried out in accordance with the Utah Department of Environmental Quality and the Environmental Protection Agency.
Utilities	Approximately 65 utility lines would require relocation outside of the project corridor, and 19 utility lines would require protection during construction.	1) Utilities identified as high impact would be relocated outside of the project corridor. 2) Medium-impact utilities would be protected by methods including casing, adjusting the height of the utility line, or adjusting surrounding grading. 3) Low-impact utilities do not require mitigation.

Table ES-1: Summary of Environmental Impacts of the Preferred Alternative (cont'd)

Resource	Impact	Mitigation
Energy and Mineral Resources	No impact	None
Public Safety and Security	No impact	None
Travel Patterns, Accessibility, and Parking	Accessibility for autos, transit, pedestrians, and cyclists would be improved across I-15; one at-grade railroad crossing would be eliminated at 800 South in Orem; pedestrian accessibility at stations would be improved; some on-street parking would be eliminated on University Avenue; left turn movements would be prohibited along 900 East, 700 North, and University Avenue in Provo; 1370 West in Orem would be a dead-end at 800 South.	See Chapter 4: Transportation Systems.
Construction Impacts	Construction of the Preferred Alternative may cause temporary minor impacts to air quality, noise levels, water, hazardous materials, business access, and traffic.	1) A public involvement plan would be developed to notify the public and residents of traffic delays, rerouting, and temporary lane closures. 2) A traffic management plan would be implemented during construction. 3) Best management practices would be implemented for water quality impacts. 4) Dust suppression would be used to mitigate for air quality impacts. 5) The contractor would adhere to local noise ordinances. 6) Hazardous materials would be removed if identified. 7) Provo City, Orem City, and UTA would work with business owners to provide business access during construction; they would work to publicize that businesses are open; and they would minimize construction delays as much as possible to maintain an expeditious construction schedule. Additional detail regarding construction mitigation measures are described in Section 3.18 of the EA.
Cumulative Impacts	No impact	None
Section 4(f)	Hillcrest Park, four archaeological sites, 22 historic buildings, and the Provo Downtown Historic District would be subject to a *de minimis* use by the Preferred Alternative. Temporary occupancy of Carterville Park and the Provo River Trail would occur during construction.	A written agreement would be prepared outlining UTA's and Provo City's joint understanding of how the Carterville Park and the Provo River Trail would be impacted and the temporary use required, prior to construction.



Project Location

Map projection is UTM12N NAD83. Base data layers from the State of Utah Automated Geographic Reference Center (AGRC) and from municipal zoning plans.

0 0.5 1 Mile

0 0.5 1 Kilometers

Figure ES-2 Summary of Environmental Impacts

Bus Rapid Transit Environmental Assessment

What are the next steps?

The following outlines the next steps and decisions to be made to advance this project:

1. FTA Small Starts Process: UTA will request funding from FTA under the Section 5309 Small Starts program.
2. Finding of No Significant Impact (FONSI) Decision: FHWA and FTA will decide if a FONSI determination is appropriate based on this EA, or if an Environmental Impact Statement and Record of Decision (ROD) must be prepared.
3. Approval for Additional Interchange to the Interstate System: Approval from FHWA for the new interchange at Orem 800 South and I-15 would be required after the FONSI or ROD.

When will it be constructed?

The project will be constructed after all environmental studies have been completed and local and federal funding is obtained.

University Mall, University Parkway, Orem, Utah