

ENVIRONMENTAL STUDY

Project Name: **SR-154; Environmental for Four Locations – 11400 South Interchange** PIN: **13963**
Project No.: **S-R299(210)** Job/Proj: **7223125N**
Prepared By: **Kevin Kilpatrick, HDR**

For guidance in preparing this environmental study, refer to Chapter 4 of the UDOT Environmental Process Manual of Instruction:

<http://www.udot.utah.gov/go/environmental>

REQUIRED SIGNATURES

I have reviewed the information presented in this Environmental Study, and I hereby attest that the document is complete and the details of the document are correct.



Digitally signed by Craig Bown
Date: 2016.06.06 16:49:18 -06'00'

Reviewer's Signature: _____ Date: _____

Reviewer (Printed): Craig Bown

Firm/UDOT Region: UDOT Region 2

STATE FUNDED PROJECTS

As a result of this Environmental Study, UDOT has evaluated the effectiveness, benefits, costs, likely effects and comments provided by the public and stakeholders on the proposed project. Based on the information summarized in this Environmental Study, UDOT has determined that the proposed action will best meet the purpose and need for the project with the least overall harm to the natural and built environment.

Recommended: Naomi Kiser 2016.06.06 17:15:11 -06'00' Date: _____
UDOT Environmental Services

Approved: Randall R Park Digitally signed by Randall R Park
UDOT Project Development
DN: c=US, o=TrustID personal certificate, ou=DST TrustID Personal Certificate, cn=Randall R Park, email=rpark@utah.gov, 0.9.2342.1.1.1=A01413E0000014CB8C4E5990006268E
Date: 2016.06.07 08:17:51 -06'00'

1. Purpose of and Need for Action

The Utah Department of Transportation (UDOT) has initiated an environmental study to analyze the need for transportation improvements at the intersection of Bangerter Highway (SR-154) and 11400 South (SR-175) in South Jordan, Utah (see attached Project Location Maps).

The intersection of Bangerter Highway and 11400 South is one of the most congested intersections in Salt Lake County. The intersection currently has an average delay of 67 seconds (Level of Service [LOS] E) in the morning peak period and 66 seconds in the afternoon peak period (LOS E).

Traffic modeling conducted in 2016 shows that in 2040 the intersection would have average delays of 199 seconds in the morning peak period (LOS F) and 143 seconds in the afternoon peak period (LOS F) in 2040 if there are no improvements to the intersection.

The purpose of the project is to alleviate the future delay and congestion at the intersection of Bangerter Highway and 11400 South.

2. Description

UDOT proposes to construct a grade separated Single Point Urban Interchange (SPUI) at Bangerter Highway and 11400 South in Salt Lake County, in order to alleviate delay and provide a better LOS (UDOT's goal for urban areas is LOS D or better). Traffic modeling shows that in 2040, the grade separated interchange will have average delays of 23 seconds (LOS C) in the morning peak period and 36 seconds (LOS D) in the afternoon peak period. It is important to note that the 2040 modeling also assumes that 11400 South will be widened to a seven lane facility by 2040. The widening of 11400 South is not proposed as part of this project and will need to be completed as a future project.

The grade separated interchange will allow uninterrupted north-south traffic on Bangerter Highway in this area and will improve east-west traffic on 11400 South by eliminating the north-south traffic movement through an at-grade intersection. In addition to reducing delay and congestion, the project will also decrease idling traffic and auto emissions and improve the safety of the intersection.

The project would include construction of an underpass (Bangerter Highway under 11400 South) and ramps from Bangerter Highway to 11400 South. As part of this project, UDOT will also remove the roundabout on 11400 South between 3600 West and Bangerter Highway to decrease delay and congestion on 11400 South. The roundabout will be replaced with a five-lane arterial. Work would also include installation of drainage systems, lighting, electrical and fiber optic cables,

and signage. See attached figure for a map that shows the proposed project improvements.

3. Public Hearing/Opportunity for Public Hearing

YES This project could result in public controversy or substantial impacts to adjacent properties; or substantially changes roadway geometry.

NO There are significant social, economic, environmental, or other effects. If YES, a Categorical Exclusion is not applicable. Consult with UDOT Central Environmental Services.

YES UDOT/FHWA has determined that a public hearing is in the public interest.

If the answer to ANY of the above questions is YES, a public hearing or opportunity for a public hearing is required (attach documentation identifying date and location of hearing, summary of comments, and responses to substantial comments, or include certification of opportunity for hearing).

The following types of public involvement have been provided:

YES Public Hearing in accordance with state and federal procedures

NO Opportunity for Public Hearing

YES Open House

YES Other:

YES Documentation is attached identifying the date and location of hearing, summary of comments, and responses to substantial comments; or the Certification of Opportunity for a Hearing is attached.

Comments: A neighborhood meeting was held on March 22, 2016 from 5 p.m. to 6 p.m. at the Daybreak Community Center for potentially impacted residences near the project area. A public hearing was held on April 7, 2016 from 5 p.m. to 7 p.m. at Midas Creek Elementary (11901 Park Haven Lane, Riverton, UT). A summary of the Public Hearing documentation and responses to comments are attached.

4. Right-of-Way

YES Acquisition of right-of-way is required.

NO The right-of-way required is significant because of its size, location, use, or relationship to remaining property and abutting properties. (If the right-of-way required is significant, the project does not qualify as a Categorical Exclusion.)

Comments: The Proposed Action would require right-of-way acquisition from residences along Bangerter Highway for the construction of interchange ramps. The Proposed Action would require partial right-of-way acquisition from 26 parcels for a total of approximately 5.2 acres. Also, the Proposed Action would require full acquisition of six residential parcels and potential full acquisition of an additional twelve residential parcels (see attached Proposed Action Figure).

5. Cultural

According to the UDOT Region NHPA/NEPA Specialist and/or the Architectural Historian, the Finding of Effect for the project is one of the following:

YES No historic properties affected

NO No adverse effect

NO Adverse effect

Project documentation for determination of eligibility and finding of effect consists of one of the following and is attached:

YES Memo from UDOT Region NEPA/NHPA Specialist and/or Architectural Historian stating a finding of No Historic Properties Affected.

NO State Historic Preservation Officer (SHPO) concurrence with the Determinations of Eligibility and Finding of Effect AND memo from UDOT Region NEPA/NHPA Specialist and/or Architectural Historian stating a finding of No Adverse Effect or Adverse Effect.

YES Have letters for Native American consultation been sent? Attach letters.

NO Have letters for federal and state agencies, CLGs, historical societies, etc., been sent? If so, attach letters.

NO Do the impacts to historic properties require mitigation?

If YES, a signed Memorandum of Agreement (MOA) is attached.

Comments: Native American consultation was initiated through letters sent to the Uintah and Ouray Ute Tribes, Shoshone-Bannock Tribes, and Northwestern Band of Shoshone Nation, Eastern Shoshone Tribe of the Wind River Reservation, Paiute Indian Tribe of Utah, Cedar and Shivwits Bands of the Paiute Indian Tribe, Confederated Tribes of the Goshute Reservation, and the Skull Valley Band of the Goshute Indians (sent March 2, 2016). To date, no responses or comments were received and any future comments will be addressed. See attached memo from the UDOT Cultural Resource Program Manager and Native American Consultation letters.

6. Paleontological

NO This project is one of the 16 types of projects listed in Stipulation III of the Memorandum of Understanding (MOU) with the Utah Geological Survey (UGS) that has no effect on paleontological resources and does not require notification to the UGS. If YES, a memo from the UDOT Region NEPA/NHPA Specialist is attached (can be included in cultural memo).

For all other projects, the UGS has been notified and has responded with the following (attach UGS letter and memo from the UDOT Region NEPA/NHPA Specialist):

YES There are no known paleontological localities in the area of potential effects, and the formations in the project area have a low potential for containing fossil remains (Class 1 or 2).

NO Fossil-bearing formations (Class 3–5) and/or known paleontological localities are present in the area of potential effects, but the UDOT Region NEPA/NHPA Specialist (or paleontologist) has determined that they will not be affected by the project.

NO Fossil-bearing formations (Class 3–5) and/or known paleontological localities are present in the area of potential effects and may be affected by construction activities. A survey and/or monitoring by a qualified paleontologist is required.

Comments: See attached March 21, 2016 letter from the UGS.

7. Federally Threatened, Endangered, or Candidate Species

For federally or state funded projects:

- YES** Project will have “**no effect**” on T&E species, or their critical habitats, protected under the Endangered Species Act. If YES, attach “no effect” memo or review/comments (in the case of local government projects) from UDOT’s Wildlife Biologist.
- NO** Project “**may affect, but is not likely to adversely affect**” T&E species, or their critical habitats, protected under the Endangered Species Act. If YES, attach BA and “concurrence” from the U.S. Fish and Wildlife Services (USFWS). List all mitigation/conservation measures.
- NO** Project “**may affect, and is likely to adversely affect**” threatened and endangered species, or their critical habitats, protected under the Endangered Species Act. If YES, attach Biological Assessment (BA) and USFWS Biological Opinion (BO). List all mitigation/conservation measures.
- NO** The USFWS has issued a “**jeopardy**” opinion regarding this project. If YES, attach BA and BO as above. This project cannot go forward without being reconsidered.

Comments: See attached February 16, 2016 memo from UDOT’s Wildlife Biologist.

8. Wildlife

- NO** Project has the potential to affect state-sensitive species, important wildlife habitat, big-game migration routes, habitat connectivity, migratory birds, and fish spawning habitat or fish passage.

Memo from UDOT Wildlife Biologist is attached.

Comments: See attached February 16, 2016 memo from UDOT’s Wildlife Biologist.

9. Invasive Species

If the project involves earthwork, grading, or landscaping, there is potential to introduce or spread invasive weed species.

YES Based upon location, this project has the potential to introduce or spread invasive species included on the noxious weed list of the State of Utah and the county noxious weed lists.

Comments: None

10. Noise

Projects that may affect noise levels to adjacent receptors include changes in roadway alignment, roadway widening, and the addition of traffic lanes.

YES This project has the potential to increase noise at adjacent receptors.

YES A noise study is attached.

Comments:

Noise levels in the study area would generally increase as a result of the proposed construction of a grade-separated Single Point Urban Interchange at 11400 South and Bangerter Highway, with an average increase of 3 to 5 dBA.

The noise wall analysis evaluated noise barriers in two locations; one on the northwest quadrant (Barrier 1), and one in the northeast quadrant (Barrier 2) of the proposed interchange. There are not currently any noise walls in these areas. The northwest quadrant currently has a 6 foot privacy wall on the east side of the subdivision.

The analysis determined that a 12 foot barrier on the northwest quadrant and a 15 foot barrier on the northeast quadrant would provide the required 8 dBA reduction to at least 75% of front-row receptors in each location. Therefore, both of these barriers are considered feasible and reasonable according to the UDOT Noise Abatement Policy. Once the final design for the Proposed Action is available, UDOT will re-evaluate the noise analysis. If the proposed noise-abatement measures (Barrier 1 and Barrier 2) are still both feasible and cost-effective, UDOT will then consider the viewpoints of property owners and residents to determine whether the proposed noise-abatement measures are desired. Balloting will be conducted consistent with the procedures described in UDOT's Noise Abatement Policy 08A2-01, Section (C)(2)(c). See attached Noise Study.

11. Wetlands, Water Resources, Storm Water, and Floodplains

Wetlands and Water Resources

- NO** The project is a type that does not have the potential to affect or cross a Waters of the United States. If YES, no concurrence letter is needed.
- NO** Project affects Waters of the United States (e.g., wetlands, mudflats, lakes, or perennial or ephemeral streams). If NO, have a UDOT Landscape Architect provide a concurrence letter stating that they agree with the determination. In order to indicate “NO” on this question, answers to the following statements must also be “NO.”
 - NO** Project impacts perennial, intermittent, or ephemeral streams that have a riparian vegetation component. If YES, a Programmatic General Permit 40 (PGP40), also known as a Stream Alteration Permit, from the Utah Division of Water Rights will be required.
 - NO** Project exceeds the impact limitations for streams or washes identified in the PGP40. If YES, both a PGP40 and a separate Department of the Army permit will be required.
 - NO** Project impacts an ephemeral wash not captured under PGP40 that has an ordinary high water mark (OHWM) with a connected flow to a downstream Traditional Navigable Water, and the impact below the OHWM exceeds 1/10 of an acre per crossing. If YES, a Department of the Army permit will be required.
 - NO** Project impacts a perennial or intermittent stream below the OHWM less than 1/10 of an acre per crossing. If YES, notification to the U.S. Army Corps of Engineers will be required.
 - NO** Project impacts navigable waters of the United States (Lake Powell, Flaming Gorge Reservoir, Bear Lake, Green River – mouth to 20 miles above Green River Station, Colorado River – mouth of Castle Creek to Cataract Canyon – 4.5 miles below mouth of Green River) below the OHWM. If YES, a Section 10 Department of the Army permit will be required.
 - NO** Project impacts jurisdictional wetlands. If YES, a Department of Army Nationwide Permit (NWP) will be required for wetland impacts under the 1/2 acre threshold; a Letter of Permission (LOP) will be required for wetland impacts between 1/2 and 1 acre; an Individual Permit (IP) will be required for impacts greater than 1 acre.

NO Project impacts non-jurisdictional wetlands. If YES, wetland mitigation may still be required under the federal policy of “no net loss.” Consult UDOT Environmental Section.

Storm Water Runoff

YES Project disturbs 1 acre or more of ground surface.

If YES, a UPDES Storm Water Discharge Permit for Construction Activities is required from the Utah Division of Water Quality.

Floodplains

NO This project requires new construction or alteration of existing structures within the Federal Emergency Management Agency (FEMA)-designated 100-year floodplain.

If YES, a “development permit” is required from the local permit official.

Comments: See attached March 3, 2016 memo from the UDOT Senior Landscape Architect.

12. Hazardous Waste

NO Has a visual inspection of the project area found substances that may be hazardous to human health and/or the environment?

YES This project involves excavation beyond or below the existing roadway footprint.

If YES to either question 1 or 2, then site investigations and coordination with the Utah Department of Environmental Quality (DEQ) may be necessary.

Comments:

An on-site field review on March 3, 2016 and a review of the DEQ’s Interactive Map (<http://enviro.deq.utah.gov>) and the EPA’s EnviroMapper on March 23, 2016 (www.epa.gov/emefdata/em4ef.home) did not identify any hazardous waste sites near the project area.

If hazardous materials are encountered during work, all work would stop in the area of contamination according to UDOT Standard Specification 01355 and the contractor would consult with UDOT and DEQ to determine the appropriate remedial measures.

13. Prime, Unique, Statewide, or Locally Important Farmland

Projects in areas whose land use maps indicate no current or future farming activities would not usually affect farmlands.

NO This project MAY affect prime, unique, statewide, or locally important farmlands.

NO The Natural Resources Conservation Service letter and Form AD1006 are attached.

Comments: None

14. Air Quality

YES This project has the potential to increase particulate matter due to construction activities.

NO This project adds or alters roadway capacity or will result in increased traffic volumes at signalized intersections.

If YES, the Air Quality Supplement is attached.

Comments: None

15. Relocations

YES There may be relocations of residences or businesses as a result of this project.

Comments: The Proposed Action would require the full acquisition of six residential parcels and the potential full acquisition of an additional twelve residential parcels (see attached Proposed Action Figure).

Full Acquisitions:

- 11233 S. Tippecanoe Way
- 11243 S. Tippecanoe Way
- 11253 S. Tippecanoe Way
- 11263 S. Tippecanoe Way
- 11273 S. Tippecanoe Way
- 11281 S. Tippecanoe Way

Potential Full Acquisitions:

- 11137 S. Tippecanoe Way
- 11141 S. Tippecanoe Way
- 11147 S. Tippecanoe Way
- 11157 S. Tippecanoe Way
- 11163 S. Tippecanoe Way
- 11173 S. Tippecanoe Way
- 11181 S. Tippecanoe Way
- 11191 S. Tippecanoe Way
- 11199 S. Tippecanoe Way
- 11209 S. Tippecanoe Way
- 11217 S. Tippecanoe Way
- 11227 S. Tippecanoe Way

16. Land Use/Urban Policy

NO This project may affect land use or urban policy.

Comments: None

17. Section 4(f) Properties

N/A Section 4(f) properties are impacted.

N/A An Individual Section 4(f) Evaluation AND written concurrence from UDOT Environmental Services on the Individual Section 4(f) determination is attached.

N/A A Programmatic Section 4(f) Evaluation AND written concurrence from UDOT Environmental Services on the Programmatic Section 4(f) determination is attached.

N/A The Section 4(f) property(ies) is (are) a historic property(ies), and the impact is considered *de minimis*.

N/A The SHPO has concurred in writing with UDOT's "no adverse effect" determination to historic properties and has been notified of the intent to make a *de minimis* finding. Attach letter to SHPO and *de minimis* agreement letter.

N/A The Section 4(f) property(ies) is (are) a park, recreational area, or wildlife or waterfowl refuge, and the impact is considered *de minimis*.

N/A The official(s) with jurisdiction has (have) concurred, in writing, that the project will “not adversely affect” the activities, features, and attributes that qualify the resource for protection under Section 4(f) and has (have) been notified of the intent to make the *de minimis* impact finding. Letters are attached.

N/A The project sponsor has provided public notice and opportunity for public review and comment. Describe public involvement efforts in the comments below.

N/A Written concurrence from UDOT Environmental Services is attached.

Comments: None

18. Other Environmental Factors Considered

This project, except as noted and explained in attachments, will have no disproportionate, serious, or lasting effect on the following:

- NO** Visual
- NO** Social/Economic
- NO** Title VI and/or Environmental Justice
- NO** Natural Resources
- NO** Construction
- NO** Energy
- NO** Geology/Soils
- NO** Wild/Scenic Rivers
- NO** Ecology

19. Conclusion

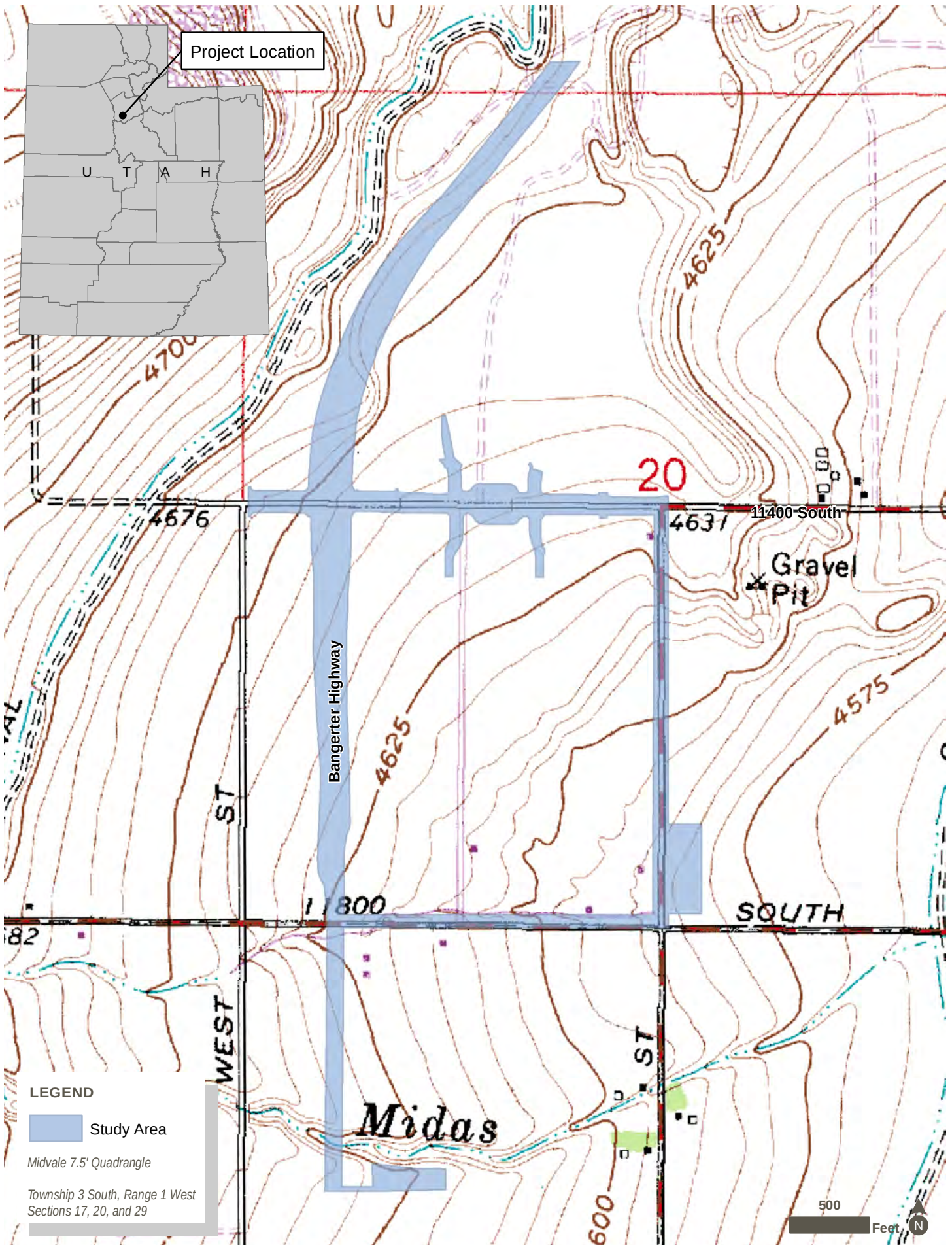
NO This project may have substantial controversy or significant impacts.

MITIGATION COMMITMENTS

CONSTRUCTION		Responsible
Air Quality	Requirements outlined in Standard Specification 01572 titled "Dust Control and Watering" will be followed.	Contractor
Cultural	UDOT Standard Specification 01355, Parts 3.7 and 3.8	Contractor
Hazardous Waste	UDOT Standard Specification 01355, Part 3.1	Contractor
Invasive Species	Supplemental Specification 02924S titled "Invasive Weed Control" will be included in the contract documents and outlines BMPs that will be incorporated.	Contractor
Water Quality	The project awarded contractor must implement and maintain the project SWPPP, in accordance with the UPDES Permit No. UTRC00000, throughout the construction of the project.	Contractor
PRELIMINARY ENGINEERING		Responsible
Relocations	Property Owners will be compensated according to the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act, as amended.	UDOT Right of Way
Water Quality	A Storm Water Pollution Prevention Plan (SWPPP) is required to be completed by UDOT during design and advertisement, which will be provided to the project awarded contractor.	Designer/Contractor
Noise	Once the final design for the Proposed Action is available, UDOT will re-evaluate the noise analysis. If the proposed noise-abatement measures (Barrier 1 and Barrier 2) are still both feasible and cost-effective, UDOT will then consider the viewpoints of property owners and residents to determine whether the proposed noise-abatement measures are desired. Balloting will be conducted consistent with the procedures described in UDOT's Noise Abatement Policy 08A2-01, Section (C)(2)(c).	UDOT Region Environmental

ATTACHMENTS

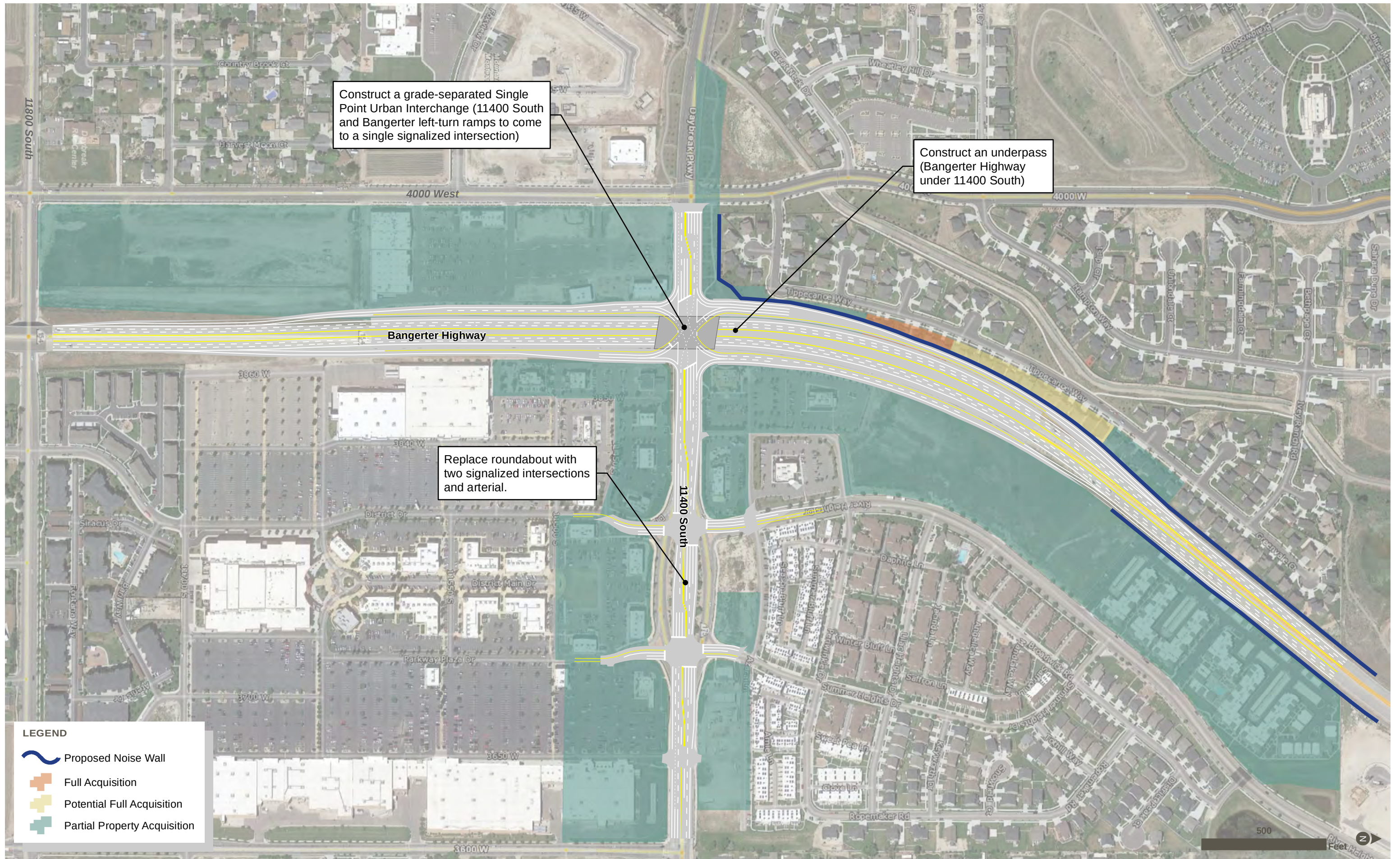
- Project Location Maps
- Proposed Action Figure
- Public Hearing Documentation
- Cultural Clearance
- Native American Consultation
- Utah Geologic Survey (UGS) Letter
- Threatened, Endangered, or Candidate Species/Wildlife Memo
- Noise Study
- Environmental Review for Wetlands and Water Resources Memo



11400 SOUTH AND BANGERTER HIGHWAY PROJECT LOCATION



11400 SOUTH AND BANGERTEER HIGHWAY PROJECT LOCATION



Bangerter Highway at 11400 South Environmental Study
Public Hearing
April 7, 2016

For the proposed interchange at 11400 South on Bangerter Highway (SR-154) in South Jordan City, Utah.
Utah Department of Transportation Project No. S-R299(210).

Meeting Type	The Utah Department of Transportation (UDOT) held an Open House Public Hearing to inform the public about the environmental study related to the planned interchange at 11400 South on Bangerter Highway (SR-154) in South Jordan, Utah.
When/Where	The Public Hearing was held on Thursday, April 7 from 5:00 to 7:00 p.m. at Midas Creek Elementary in Riverton, UT. Presentation boards and several project maps were presented and project team members were available to answer questions.
Advertisement	UDOT was responsible for advertisement of the Public Hearing. These efforts included: • A legal notice ran in the Salt Lake Tribune and Deseret News on March 22, 2016. (See screen capture on next page) • Postcards mailed to approximately 800 stakeholders on the mailing list • Email notification to stakeholders who signed up for email updates on the project. South Jordan City Public Information Officer, Tina Brown, managed the advertisement for the Public Hearing for the City. Advertisement through the City included the following: • City website • City social media • Informed City Council through invitation
Attendance	Attendees signed in at the front desk; 70 people signed in, although many signed in as a household with more than one attendee.
Information Presented at the Meeting	Boards illustrating the project's purpose and need, traffic data, noise study results, and environmental impacts were set up around the room and six tables were used to show maps of the proposed action. The boards and proposed action map were also available on a website where it could be viewed and commented on.
Comments	Six individuals shared comments using the court recorder. Six written comments were received via comment form at the public hearing. Nine comments were received by email following the meeting and 69 comments were received through the online public comment website. All comments are attached.

BANGERTER

11400 SOUTH INTERCHANGE

Bangerter Highway Environmental Studies 11400 South Public Hearing

UDOT is in the process of conducting a State Environmental Study at the Bangerter Highway and 11400 South intersection to evaluate the potential benefits and impacts of a new, freeway-style interchange.

You are invited to attend a public hearing to review study findings, provide input on the proposed interchange design, potential property impacts, and gather information about the next steps leading to construction, scheduled for 2017.

Public Hearing (Open House Format)

When: April 7, 2016, 5 – 7 p.m.

Where: Midas Creek Elementary School Gymnasium,
11901 Park Haven Lane, Riverton

If you need special accommodations during the meeting, please contact the project team in advance.



Schedule



A UDOT PROJECT

Get Involved

Beginning March 22, proposed interchange design documents will be posted at udot.utah.gov/bangerter11400south. Public comments on this design will be accepted through April 23. Public hearing materials will also be on the website beginning April 14.



Website: www.udot.utah.gov/bangerter11400south
Email: bangerter@utah.gov
Hotline: 888-766-ROAD (7623)

2162 W. Grove Parkway, Suite 400
Pleasant Grove, UT 84062

Public hearing notices published on March 22 in the Salt Lake Tribune and Deseret News:

NOTICE OF PUBLIC HEARING On proposed improvements for Bangerter Highway and 1...

NOTICE OF PUBLIC HEARING On proposed improvements for Bangerter Highway and 114000 South intersection, South Jordan, Utah UDOT Project No. S-R299(210) The Utah Department of Transportation (UDOT), herewith, advises all interested persons or groups that an official Public Hearing (open house format) will be held for this project. The proposed project includes constructing a grade-separated interchange at the intersection of 114000 South and Bangerter Highway in South Jordan, Utah. An official Public Hearing will be held for this project on Thursday, April 7, 2016, at the Midas Creek Elementary School (11901 Park Haven Ln) in Riverton, Utah from 5:00 p.m. to 7:00 p.m. Members of the public are invited to visit the open house at anytime during this period and are encouraged to provide comments on the project. Information to be presented at the hearing will include the purpose of the project and information gathered during the environmental study. During the hearing, verbal and/or written comments will be received from all interested persons or groups regarding the features of the proposed project or its social, economic and environmental effects. Comments may also be submitted via the project website at www.udot.utah.gov/bangerter11400south, the project hotline at 888-766-7623, via email to bangerter@utah.gov or mailed to HDR Engineering, 2825 E. Cottonwood Parkway, Suite 200, Salt Lake City, UT 84121. Comments need to be submitted by Friday, April 22, 2016 in order to be included in the official transcript of the public hearing proceedings. UDOT is nearing completion of a State Environmental Study for the project. To learn more, visit www.udot.utah.gov/bangerter114000south. In compliance with the Americans with Disabilities Act, individuals needing special accommodations (including auxiliary communicative aids and services) during this meeting should notify the project team at the before mentioned number/address/email at least three days in advance of the meeting. 1082147 UPAXLP

Public hearing notice on South Jordan City's Facebook page:

City of South Jordan
April 5 at 4:15pm · 🌐

Want to weigh in on the proposed new interchange at Bangerter & 11400 S? Join us for a public hearing April 7 @ Midas Creek Elementary.



BANGERTER
11400 SOUTH

PUBLIC HEARING (Open House Format)
April 7th
5:00 to 7:00 PM
Midas Creek Elementary, 11901 Park Haven Ln, Riverton

You are invited to attend a public hearing to review study findings, provide input on the proposed interchange design, learn about potential property impacts, and gather information on the next steps leading to construction, scheduled for 2017. Beginning March 22, proposed interchange design documents will be posted at utah.gov/bangerter11400south. Public comments on this design will be accepted through April 22. Public hearing materials will also be on the website beginning April 8.

Website: utah.gov/bangerter11400south
Email: bangerter@utah.gov
Hotline: 888-766-ROAD (7623)

A UDOT PROJECT

Like Comment Share

City of South Jordan
April 6 at 8:15am · 🌐

Questions about the proposed new interchange at Bangerter & 11400 S? Learn more @ a public hearing on tomorrow 5pm @ Midas Creek Elementary.



BANGERTER
11400 SOUTH

PUBLIC HEARING (Open House Format)
April 7th
5:00 to 7:00 PM
Midas Creek Elementary, 11901 Park Haven Ln, Riverton

You are invited to attend a public hearing to review study findings, provide input on the proposed interchange design, learn about potential property impacts, and gather information on the next steps leading to construction, scheduled for 2017. Beginning March 22, proposed interchange design documents will be posted at utah.gov/bangerter11400south. Public comments on this design will be accepted through April 22. Public hearing materials will also be on the website beginning April 8.

Website: utah.gov/bangerter11400south
Email: bangerter@utah.gov
Hotline: 888-766-ROAD (7623)

A UDOT PROJECT

Like Comment Share

City of South Jordan
April 7 at 8:14am · 🌐

Learn more about the proposed interchange design @ Bangerter & 11400 S! Join the public hearing tonight! @ Midas Creek Elementary.



BANGERTER
11400 SOUTH

PUBLIC HEARING (Open House Format)
April 7th
5:00 to 7:00 PM
Midas Creek Elementary, 11901 Park Haven Ln, Riverton

You are invited to attend a public hearing to review study findings, provide input on the proposed interchange design, learn about potential property impacts, and gather information on the next steps leading to construction, scheduled for 2017. Beginning March 22, proposed interchange design documents will be posted at utah.gov/bangerter11400south. Public comments on this design will be accepted through April 22. Public hearing materials will also be on the website beginning April 8.

Website: utah.gov/bangerter11400south
Email: bangerter@utah.gov
Hotline: 888-766-ROAD (7623)

A UDOT PROJECT

Like Comment Share

WELCOME

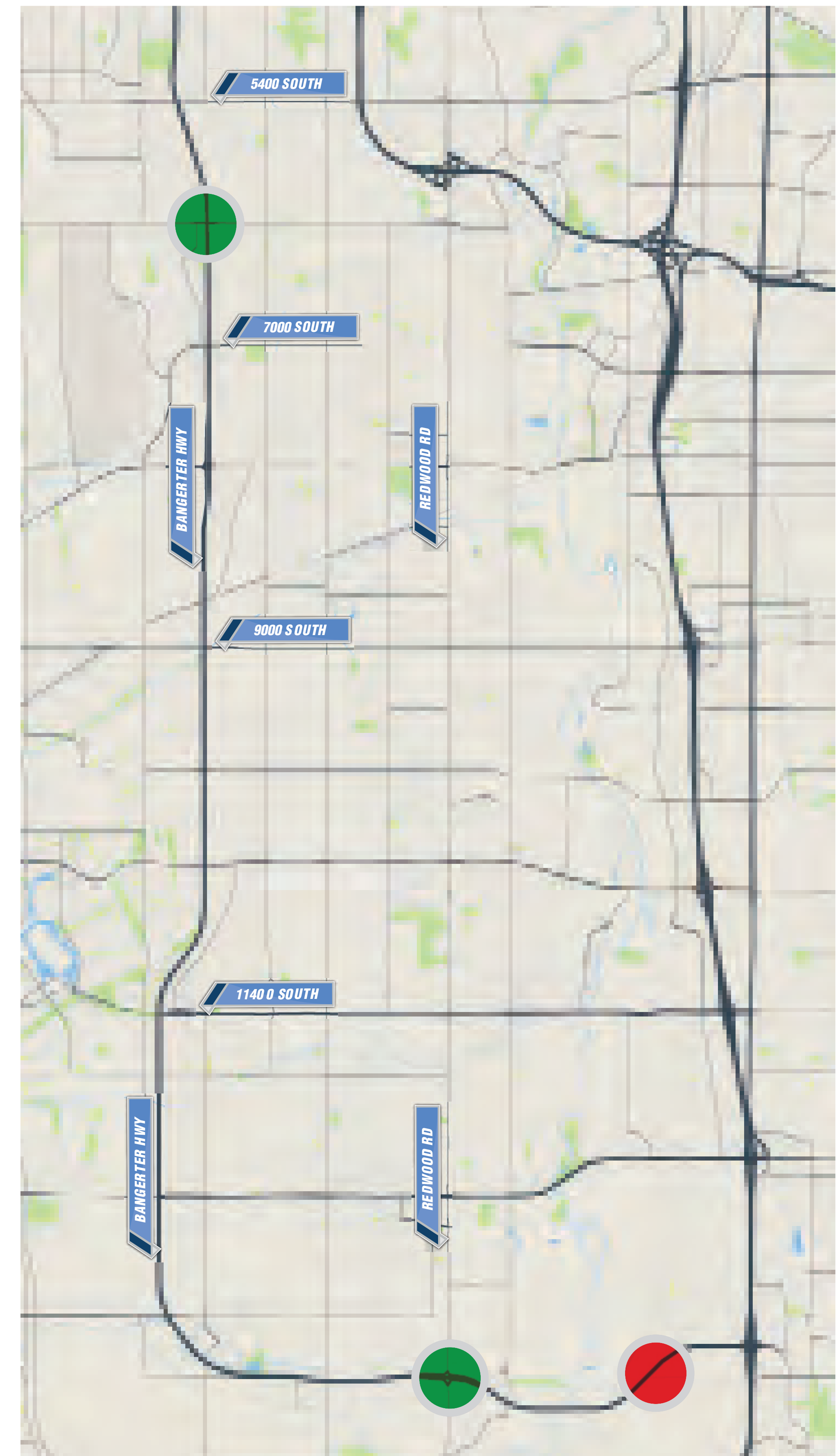
***11400 South and Bangerter Highway
Public Hearing***

Bangerter Highway Overview

Conversion to Expressway

Other Bangerter intersections have been converted to interchanges:

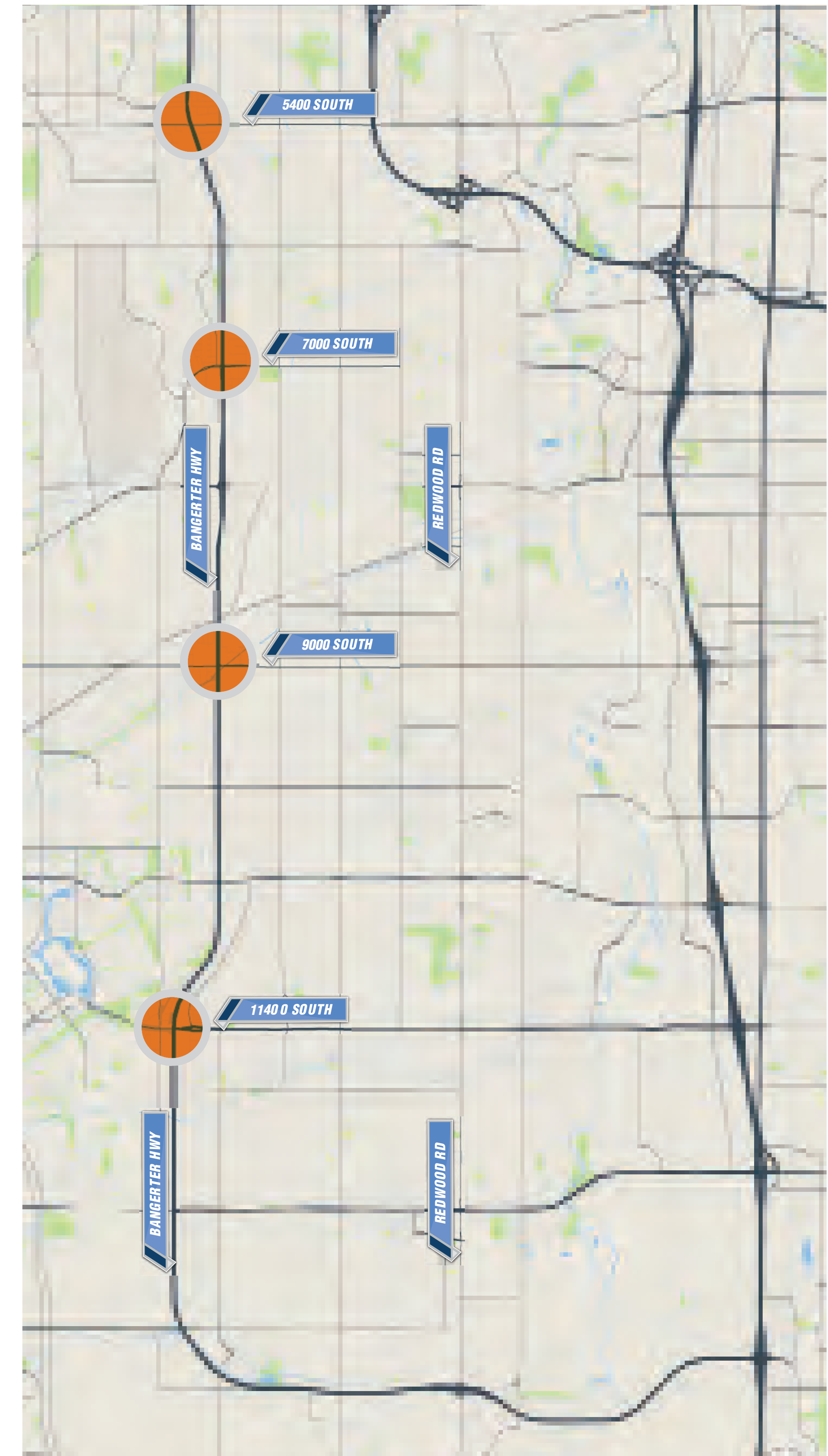
- 7800 South (completed)
- Redwood Road (completed)
- 600 West (under construction now)



Bangerter Highway State Environmental Studies

UDOT is conducting four state environmental studies along Bangerter Highway to evaluate the potential benefits and impacts of new, freeway-style interchanges.

- 5400 South
- 7000 South
- 9000 South
- 11400 South



Purpose and Need

How are Traffic Operations at an Intersection Measured?

Intersection Level-of-Service (LOS) is determined by the amount of extra time it takes (delay) to pass through an intersection as a result of starts and stops associated with traffic signals.

Intersection Level-of- Service

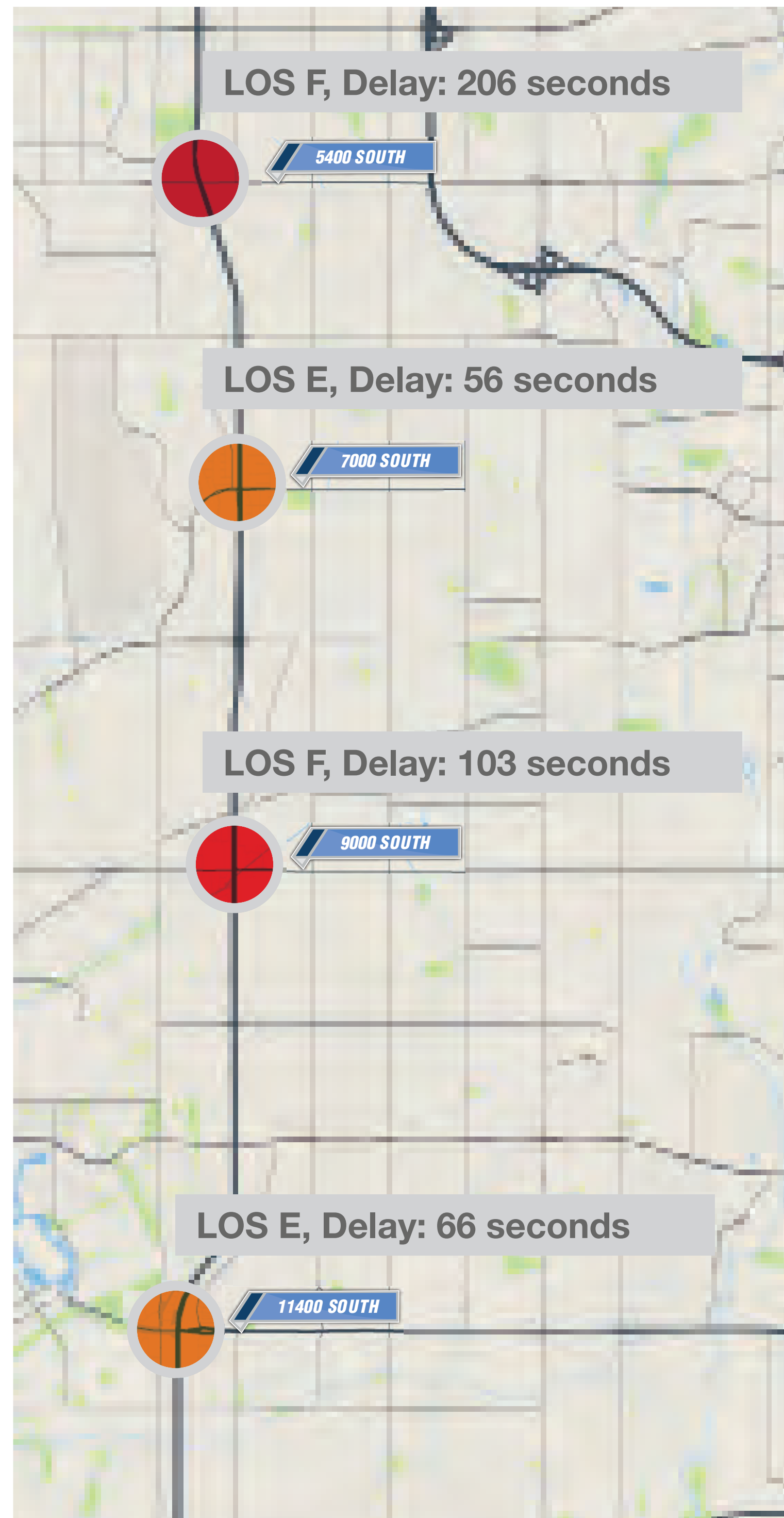


Shorter delays
(shown in seconds)
mean better LOS.

LOS F describes very congested driving conditions where the number of vehicles arriving at an intersection exceeds the capacity of the intersection. Most drivers have to wait for multiple green lights before they get through the intersection. Long queues of left turning vehicles stack out of the left turn pockets and block adjacent through lanes.

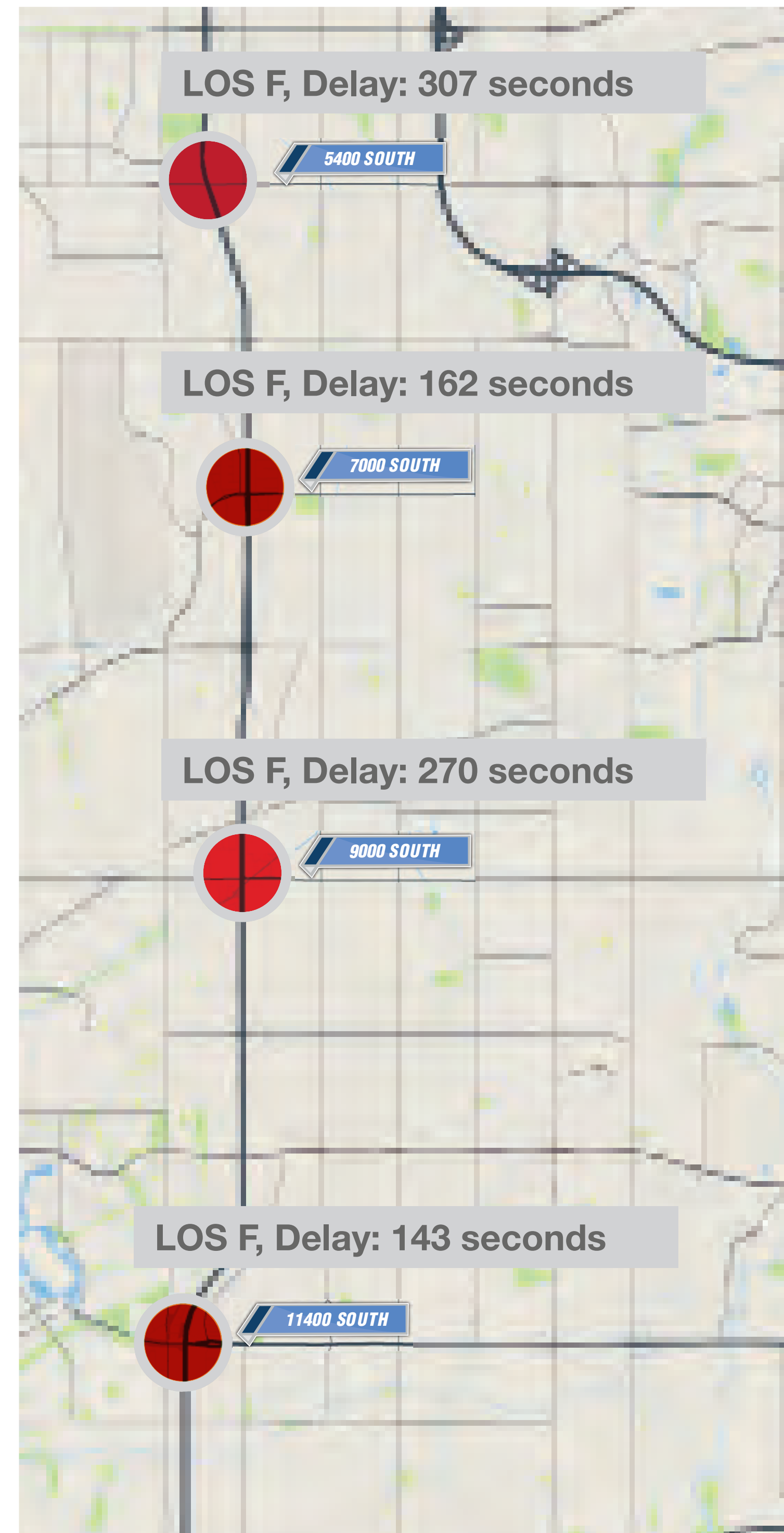
Existing Level-of-Service

Intersections are currently congested



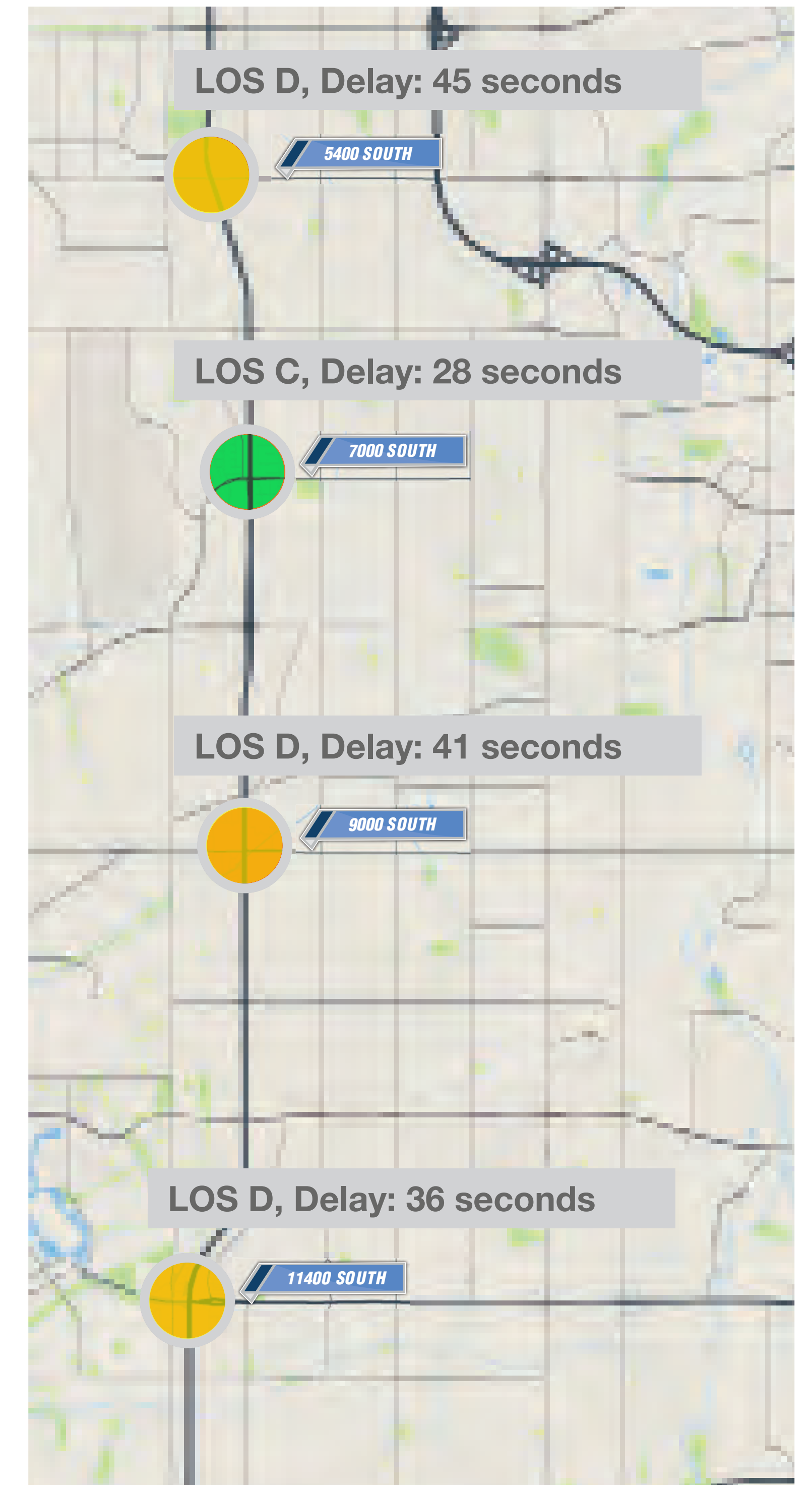
2040 No-Build Level-of-Service

Overall delay will exceed 300 seconds in some locations



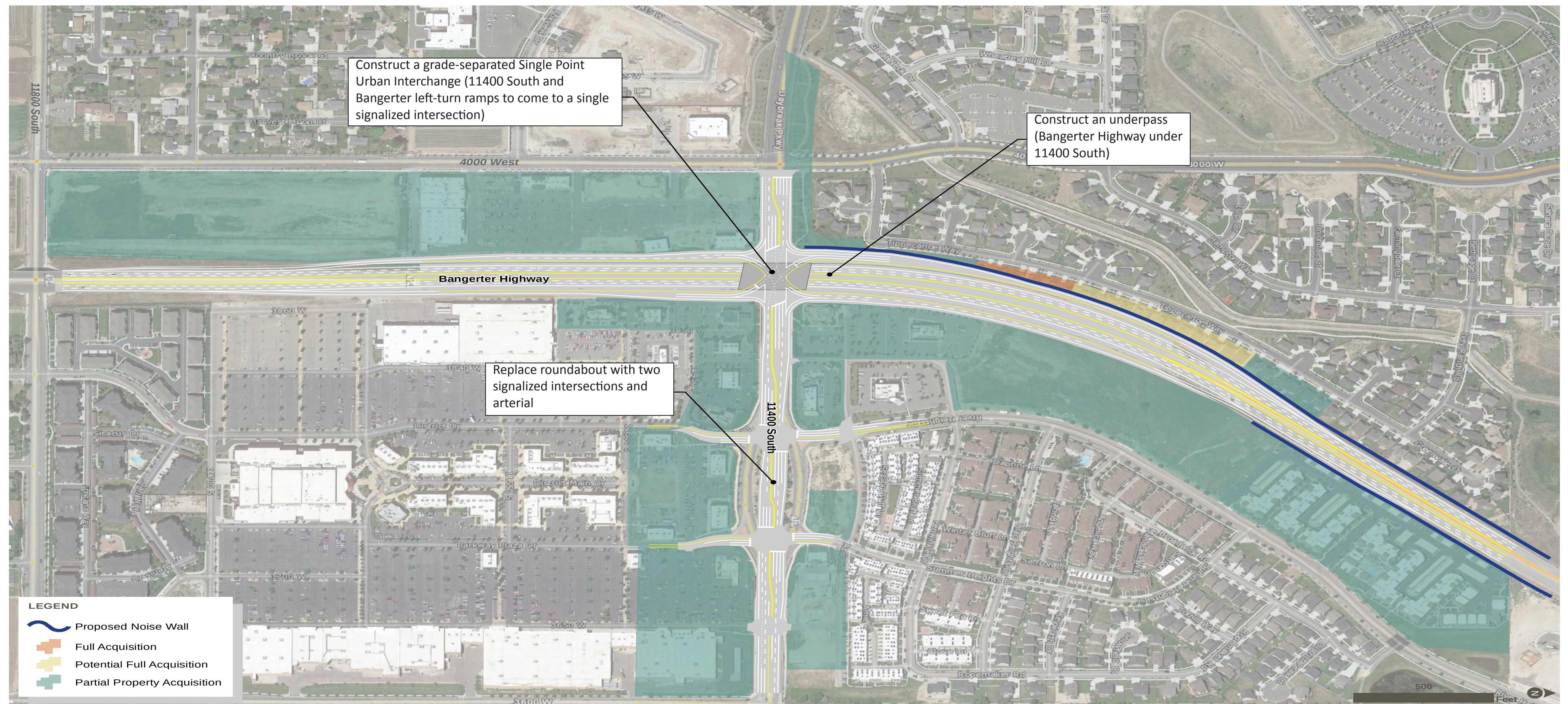
2040 Build Level-of-Service

Grade-separated interchanges



11400 South Proposed Action

- Construct grade-separated Single Point Urban Interchange (SPUI) at Bangarter Highway and 11400 South
- Construct underpass (Bangarter Highway under 11400 South)
- Remove oval-about on 11400 South



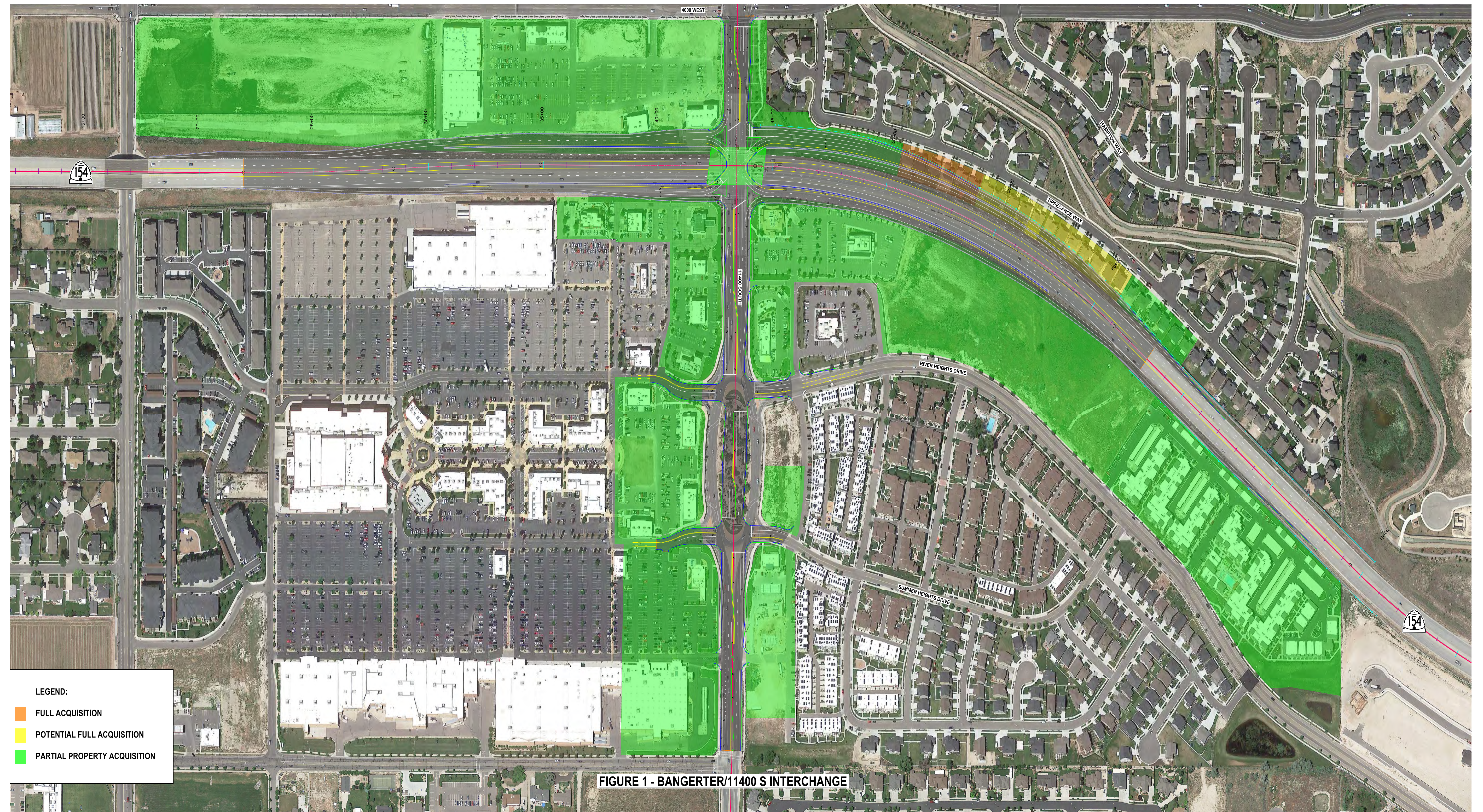
Project Schedule & Process



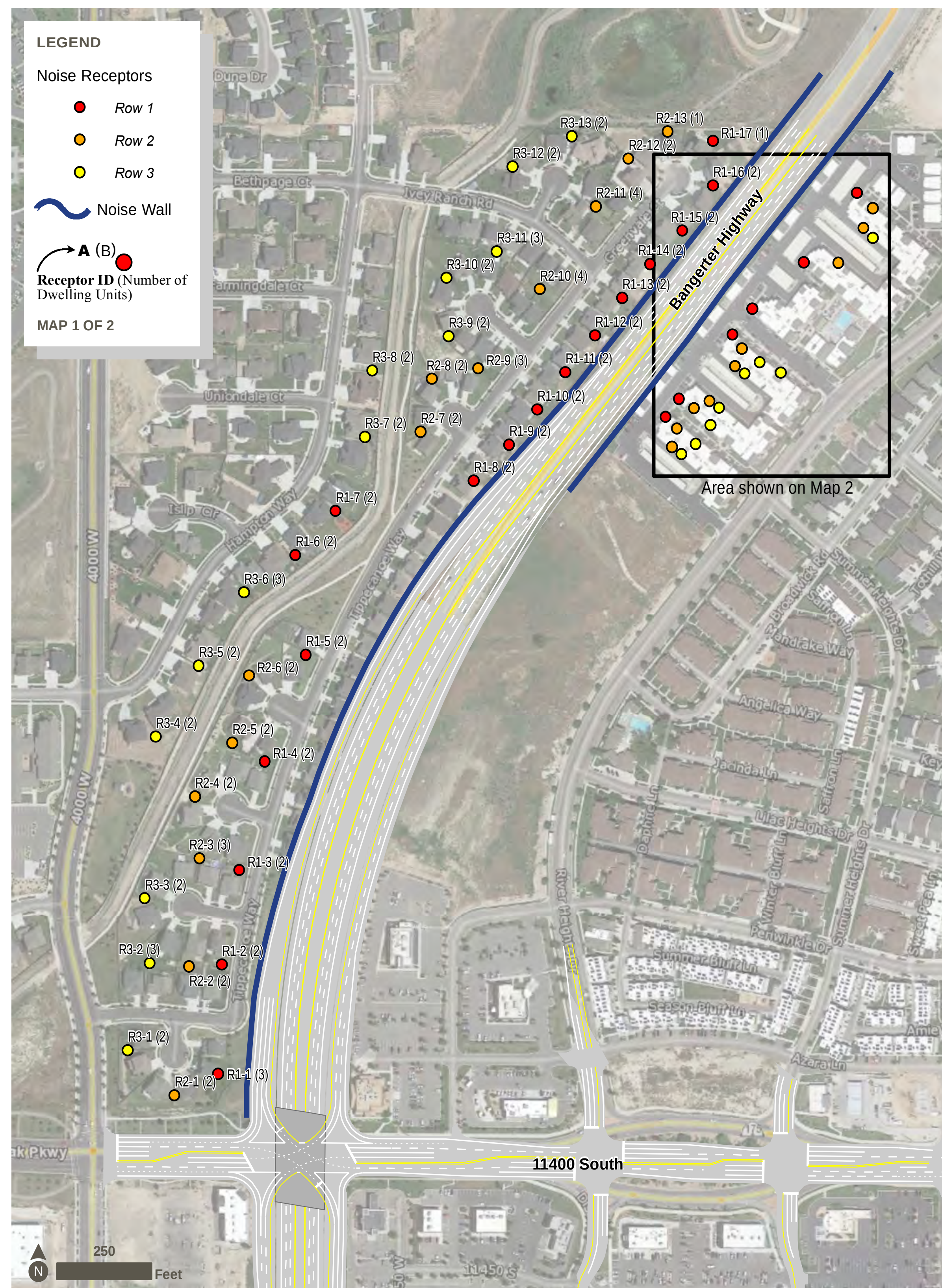
Environmental Impacts and Mitigation

Resource	Impact	Mitigation
Right-of-Way/ Relocations	- Partial right-of-way acquisition for 26 parcels - Full acquisition of 6 residences and potential full acquisition of an additional 12 residences (see Right-of-Way board for more information)	Property Owners will be compensated according to the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act, as amended.
Cultural/ Paleontological	- No historic properties affected - Low potential for paleontological resources	No mitigation required
Threatened & Endangered Species/ Wildlife	No impact	No mitigation required
Noise	Average increase of 3 – 5 dBA when compared to existing conditions (see Noise board for more information)	- The northwest quadrant of the interchange qualifies for a 12’ noise wall under the UDOT Noise Abatement Policy - The northeast quadrant of the interchange qualifies for a 15’ noise wall under the UDOT Noise Abatement Policy
Wetlands, Water Resources, Storm Water, and Floodplains	No impact	No mitigation required
Hazardous Waste	No impact	No mitigation required
Farmland	No impact	No mitigation required
Air Quality	No impact	No mitigation required
Land Use	No impact	No mitigation required

Environmental Impacts – Right-of-Way



Environmental Impacts – Noise



CONTACT US

Website: ***www.udot.utah.gov/bangerter11400south***

Phone: ***888-766-ROAD (7623)***

Email: ***bangerter@utah.gov***

***Provide Verbal
Comments Here***

S.R. 154; Environmental Study for Four Locations (Bangerter Highway and 11400 South) – Comments and Responses (March 22, 2016, to April 23, 2016)

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No.	Name	Comment	Response
Support for the Project			
1.	Ray and Leah Paddock	Thank you for getting rid of this! :)	Thank you for your comment.
2.	Chris C.	LOVE THIS! Overpass is a great idea! And getting rid of the stupid round about... who cares about the fluffy trees... this place is a nightmare during the evening and don't even get me started on Christmas. I hope to see this sooner than later!	
3.	Carter Crosland	I think what you guys are doing is fantastic. Converting Bangerter to a freeway is an incredible idea, and one that will help break up congestion immensely. People would be crazy to oppose the change! The modifications at Redwood and 7800 South are incredible. Keep up the great work!	
4.	Mark	Glad to see this go in, should have done this 20 years ago.	
5.	Cole Robison	Worked on this subdivision daily for months, and traveled through 11400 So/Bangerter often. In my opinion, a freeway-style interchange is the best choice for this area. Traffic on Bangerter in this area in morning and evening rush hours is often terrible, and freely flowing traffic on Bangerter would be a wise investment.	
6.	Hansen home	Thank you for your infomational meeting look forward to seeing, learning and buildind your proposed development. We have many questions, more concerns and looking for improvements that will improve our area for 2040 and on. Thank you again.	
Opposition to the Project			
7.	Randy Joseph	It doesn't seem like anyone is conscientious about the harm this project will have on the home owners that remain in the community. I am strongly against the proposal!	Thank you for your comment.
8.	Angelica	Spend the money on Mountain View expansion instead!!! Leave all homes along Bangerter. Save Billions of dollars from buying out so many homes!!! Force people to drive Mountain View! Look into expanding West to East roads instead. This may lead to a better balance of traffic. You already know Mountain View will be a HWY. You are hurting each city you take homes out of. Time for each city to get involved in a power hungry UDOT! Each neighborhood having homes taken need to band together in this unjust treatment of wonderful tax paying citizens. Don't we as citizens have rights? Who is allowing UDOT to have such a crazy amount of power? And my home is not effected by this!!!	
9.	RJ Coles	RJ called and asked for an explanation of the environmental studies at Bangerter. After explaining the process to him, RJ expressed his opposition to an interchange at 11400 South. He believes it will be too impactful to businesses in the area, and that more people need to start using public transit to accommodate the population growth. He does not have access to a computer or the internet, and missed the invitation to the public hearing until today. He may attend the 9000 South hearing to get more information. Documented RJ's concerns and let him know that I would be available to talk with him about 11400 South at the 9000 S hearing if he was able to attend.	
Aesthetics			
10.	Mel Lewis	Others have voiced their concerns about a number of things, among them their concern of “view” changes.	Visual aesthetics will be determined during the design and construction phases of the project. Impacts to the Daybreak sign will be determined in final design, and if the sign is impacted, UDOT will work with Daybreak through the right-of-
11.	Jason McGuire	Keep as much of the landscaping through here as possible.	

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No.	Name	Comment	Response
12.	Jason McGuire	Allow for a way for Daybreak to keep a unique monument marker in this area as it the primary gateway for Daybreak.	way process to determine relocation options or compensation. There will be impacts to the view for houses on the west side of Tippecanoe. The existing six foot privacy subdivision wall will be relocated for properties that are not acquired for the project. A noise wall meets the current UDOT noise policy requirements and will be constructed between the Tippecanoe subdivision and Bangerter Highway if it passes the voting requirements in UDOT's Noise Abatement Policy.
13.	Randy Joseph	This project is extremely upsetting! Removing more than half of the homes on Tippecanoe Way will completely change the feel and look of our neighborhood!	
14.	Kelton	I'm surprised this wasn't looked at sooner. These businesses and homes are quite new, some less than a year old. Seems like the road should be planned ahead not wait until they are established then have to remove them for the road. I hope the less obtrusive option can be chosen, not higher than needed or partially put some underground.	
Construction			
15.	Michelle Yates	We are saddened to leave our neighborhood but would rather not be here under these conditions. We also have no desire to be here through the 24/7 construction noise.	Specific design and construction details (type of fencing, contractor staging, night-time construction, safety, etc.) will be evaluated during the design and construction phases of the project. Where possible, UDOT will try to minimize impacts from multiple construction projects in the southwestern part of Salt Lake County. Contractors will be required to comply with UDOT's standard specifications during construction as well as project-specific specifications intended to minimize construction impacts. Some of these specifications include: • During construction, the contractor will be required to prepare a detailed traffic-control plan that will maintain access to all commercial and residential properties throughout the project implementation and will be required to submit an approved traffic-control plan prior to the commencement of construction-related activities. • The contractor will also be required to provide an approved public involvement plan designed to notify the traveling public and adjacent property owners of construction-related issues and concerns and to coordinate construction activities with adjacent property owners. • Construction noise impacts are considered temporary and will be minimized through adherence to UDOT Standard Specification 01355, Environmental Compliance, Part 3.6, Noise Control. A project hotline will also be implemented to help facilitate public notification and communication.
16.	Robert Paxton, DMD	[T]he main issue that I have is that we have most of the southerwestern -- in fact, all of the southwestern corridor is being worked on simultaneously. I have a business on 106th South and 1300 West, and I fear congestion probems because 114th is being worked n, 106th will be worked on, 90th will be worked on, 7200 will be worked on. And it's going to create road rage, congestion, and severe safety problems for the several hundred patients that come in and out of the buildings in my office complex every single day.	
Design, Traffic, and Traffic Signals on 11400 South and Local Roads in the Area			
17.	Lori Harper	With having lights here possibly, we need you to also consider the traffic coming in & out of the shopping center. Cars already get very backed up in the shopping center, that you can't pull out of the parking lots. There still needs to be a solution for helping the traffic flow to be quite continuous.	The design of 11400 South has been developed to meet expected traffic needs based on available traffic modeling. UDOT will conduct more-detailed traffic modeling prior to construction to determine appropriate turn lane lengths at the intersections. The grade-separated interchange on Bangerter Highway will improve traffic flow on 11400 South by removing the north-south traffic movements from the current at-grade intersection. The proposed design includes replacing the roundabout with two signalized intersections and including left-turn lanes at the intersections. Traffic modeling has shown that the two signalized intersections will result in better transportation
18.	Darin Moody	It is essential to maintain the left turn lanes so that convenient access to businesses can be preserved going both directions.	
19.	Jason McGuire	Leave the road wide through this area to allow for a landscaped medium and left hand turn lanes. This area is unique with its landscaping do not destroy it all with concrete.	
20.	Jason McGuire	The traffic lights will all need to be timed to work together to keep traffic moving and not backing up on 114th from 4000 West to 3600 West.	

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No.	Name	Comment	Response
21.	Eva	I think an option to use the roadway right of way space here and leave the middle of the road green space would be a nice alternative. make the road a divided road through this area with the two new intersections. would provide more turning lane Queue perhaps.	performance compared to the roundabout. UDOT will continue to work with South Jordan City during the design process to maintain accesses into the commercial areas and to coordinate signal timing to minimize delays at the signals on 11400 South. Traffic modeling completed for this project has shown the need for additional traffic capacity on 11400 South between 4000 West and 3600 West by 2040. However, the additional widening for 11400 South is not currently part of the scope of this project and will need to be completed as a future project.
22.	Bryan Farnsworth	The distance between 4000 West and Bangerter on 11400 South is very short, and the stretch is often completely congested during rush hour. With the growth in retail in the area, and the significant growth projected in Daybreak, it may beneficial to build 11400 South with 3 lanes of traffic in each direction from just west of 4000 West to 3600 West. Also aesthetically, it would be nice for Bangerter to be built under 11400 south, for Daybreak to maintain an entry monument, and for as much of the landscaping to be maintained as possible.	
23.	Sarah Boucher	A left turn at this intersection is important to allow for business access from all directions.	
24.	Pkg	Do I interpret this round about plan correctly to be two traffic light controlled intersections? As bad as the flow created by the round about is, adding multiple street lights at such a short interval would be worse.	
25.	Craig Douglass	5 traffic lights between 3600 W and 4000 W stinks. I don't see how you can get around it, but can you at least synchronize them, please?	
26.	Brittany Patterson	Perhaps reminding people that you need to 'Keep Moving' with signs and words on the ground could solve or at least help this issue? It definitely worth trying as I'm sure that would cost significantly less than a total overhaul. I've never had trouble with the roundabouts except people stopping and causing traffic jams - if people kept moving I suspect it would be much more pleasant.	
27.	Stanley Postma	I reviewed the proposed plans on line since I missed the public hearing. 15 years ago I told UDOT management (Clint Topham and Tom Warne) that Bangerter Highway should be converted into a limited access highway with interchanges at each crossing. Glad to see it happening, although it would have been cheaper years ago. The proposed changes will improve the situation, however the on and off ramps will be tight and have limited capacity due to limited right-of-way to avoid commercial businesses. The round about at The District has already reached failure status and replacement is warranted. Make sure you provide adequate storage for left turns. The District is heavily used. I am most concerned about storage for east bound vehicles to avoid backing through the interchange. Stan Postma, PE	
28.	Lisa McMurtrey	I am concerned about coming off of Bangerter at 11400 S. and going west. Thereis a very short distance to get to the 2 turn lanes to go south on 4000 W. There is a lot of backed up traffic currently and hopefully this will help. Thank you for removing the round about. It hasn't worked and is dangerous. Thank you for being proactive to help the future.	
29.	Casey	Since one of the main points of building an interchange is to reduce congestion there should be three lanes of travel on 11400 S from Parkway Plaza Dr (3715 S) to 4000 S. I think it'd be fine to only have two lanes crossing on the actual interchange (hopefully going over Bangerter) and maybe even through each of the proposed intersections (). There are going to be a lot of cars going to and from the stores, restaurants, apartments, and homes. There are going to be cars slowing down in the right lane while looking or deciding where to turn who will block the right lanes on each side of 11400 S in this area. (Also there are plenty of drivers that avoid moving completely into the shoulder to make a right hand turn, and instead block the shoulder and the lane of traffic.) This would mean that only one lane of traffic each way would effectively get through the obstacle course. I'm all in favor of getting rid of the island because, unfortunately, not all drivers easily figure it out. Lets remember why it was put there in the first place and what obstacles it was thought to overcome in the first place.	

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		I'm not proposing an extra wide interchange I'm proposing two lanes that cars can actually move through, and a third lane for those cars wanting to turn on and off of 11400 S in this busy area.	
30.	Mel Lewis	What would be the difference in traffic control and convenience for entering and exiting Bangerter and the surrounding shopping districts. Thanks, -Mel-	
31.	Eva	The traffic backs up in both directions at this interchange and is only going to get worse with more stores opening and more cars. Im not sure how the new bangerter interchange will help this issue at 4000 W but its a problem currently.	
32.	Jeff Myers	There will be 5 (FIVE) intersections/lights within a 1/2 mile, from 3600W to 4000W. That is crazy! How will this keep traffic flowing? And the space from Bangerter to 4000W always gets backed up. Solutions?	
33.	Kelton	I hope you are looking ahead at 126th south and other intersections and not waiting for the building to take place before you realize this has to be done again.	
34.	Dexter Davies	Look at alternative options such as 10600th South that way you will have many intersections linked together with an overpass. How is the flow of traffic improved when intersections that have under/overpasses separated by one or two intersections without over/underpasses?	
35.	Tammy Payne	My biggest concern is traffic flow. I currently avoid 11400 S. by the District because people pull out when they shouldn't, stop when they shouldn't, block traffic, etc. I'm happy to hear the oval - about will be removed but I don't want a back-up of traffic at the lights. People already drive too slow down 11400 S. The speed limit is 45 yet people seem to drive 30.	
Drainage			
36.	Britton Butterfield	I am concerned about the drainage because of the loss of the detention pond, so I'm curious as to the plans to take the water away from that area	UDOT will relocate the South Jordan City detention basin that would be impacted by the project. UDOT is working with South Jordan City staff to determine a final drainage plan. UDOT is considering options that would relocate the drainage to the south side of 11400 South and utilize or expand existing detention facilities in this area.
General Comments on the Process or the State Environmental Study			
37.	Krista Burton	Please contact us ASAP as we have many questions and concerns re: this process, timeline, etc...	People who asked to be contacted have received emails or phone calls from the project team. UDOT will consider and review all comments received. UDOT will make a final determination on the Proposed Action after reviewing all relevant project factors, including but not limited to the project's benefits, costs, impacts, and public comments.
38.	Chandra	Please contact me and we just learnt about this project and want to understand the scope/timelines as we are impacted by this project.	
39.	Gabi Reynoso	Gabi called with concerns about compensation for indirect impacts, like decreased property value, noise, etc. He also had questions about noise and a noise wall. Beau encouraged him to attend the Public Hearing and emailed him a pdf of the advertisement.	
40.	Mike MacKay	Hello, I live in the Jordan Heights neighborhood being effected by the changes coming to Bangerter and 11400. Is UDOT considering making the interchange and underpass? Does the public have any influence on a potential decision in this regard (overpass vs underpass)?	

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No.	Name	Comment	Response
		Thanks, Mike MacKay	
41.	Hansen home	Thank you for your infomational meeting look forward to seeing, learning and buildind your proposed development. We have many questions, more concerns and looking for improvements that will improve our area for 2040 and on. Thank you again.	
42.	Justin Anderson	Hello, My wife and I went to the open house yesterday and that was very informative. Is there a Draft EIS available yet for this interchange? Thanks, Justin D. Anderson (XXX) XXX-XXXX	
43.	Dennis Foster	Hi, I am trying to get more information on the proposed interchange at 114000 south and Bangerter in South Jordan. I have tried going to udot.utah.gov/bangerter11400south , but nothing comes up. I live at 11199 Tippecanoe Way. Please let me know how I can get more information. Thanks, Dennis Foster	
Noise, Noise Walls, and Vibration			
44.	Jackie Hunter	3. Additionally, with the road closer to my house, the noise and the shaking of my house is also likely to increase, which could result in damage to my home.	UDOT does not anticipate any vibration impacts to adjacent properties as part of the construction process. As described in the State Environmental Study and noise study, noise levels would generally increase as a result of the proposed grade-separated interchange, with an average increase of 3 to 5 dBA (decibels on the A-weighted scale). The analysis determined that a 12-foot-high noise wall on the northwest quadrant and a 15-foot-high noise wall on the northeast quadrant would provide the required 8-dBA reduction to at least 75% of front-row homes in each location. Therefore, both of these noise walls are considered feasible and reasonable according to UDOT's Noise Abatement Policy. The noise walls are assumed to be vertical noise walls similar to other noise walls located along Bangerter Highway. Once the final design for the Proposed Action is available, UDOT will re-evaluate the noise analysis. If the proposed noise walls are still both feasible and cost-effective, UDOT will then consider the viewpoints of property owners and residents to determine whether the proposed noise walls are desired. Balloting will be conducted consistent with the procedures described in UDOT's Noise Abatement Policy 08A2-01, Section (C)(2)(c).
45.	Terri Summers	The noise level from Bangerter is getting louder and louder and by elevating Bangerter Highway the noise level will travel farther and be louder.	
46.	Roxanne Rawlings	I live by the 11400 South Bangerter project. I am curious about the new sound walls. They keep saying that they will be curved to send the sound back down. I have NEVER seen a curved sound wall. I live up above Bangerter on the bluff. I am concerned these walls will only push the sound up to my house. Is this correct? Thanks, Roxanne Rawlings	
47.	Jesse Brown	Hi, The ICO team (owner of the Residences at the District) supports the sound wall along the length of our property and requests that Bangerter Highway be lowered to flow under 114th. Thanks,	
48.	Dexter Davies	4) Increase the sound barrier to the best sound resistant structure possible.	
49.	Stephen	I think the sound wall will be very beneficial to residents in the area to help mitigate traffic noise. It would also help if Bangerter was constructed to flow below 114th South. If Bangerter goes above 114th then it would reduce the effectiveness of the sound wall.	
50.	Dexter Davies	2) Decrease the speed limit in this area to minimize the noise and allow for the off ramp to begin further South.	
51.	Michael Sanford	[A]nd then the other comment is that they need to come back out and do a noise study on 114 -- the corner of 114	

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		and 4000 and reconsider building a wall, bringing the wall around down 114, because the noise level right now already exceeds what is an acceptable level. And if the only consideration of not building is because of cost, that's inappropriate. That's it. That's my comment.	
Overpass versus Underpass			
52.	Jeff Myers	We chose this area for the upper scale atmosphere and feel that a large overpass will detract from that. We would GREATLY prefer this intersection to be an UNDERPASS. Please keep the esthetics of this area intact.	UDOT's preferred design at the 11400 South/Bangerter interchange is an underpass where Bangerter Highway would go underneath 11400 South. 11400 South would either stay at grade or would be slightly elevated. UDOT made this decision after evaluating the engineering considerations, cost, impacts, and comments from South Jordan City and other stakeholders. An overpass would likely have a similar footprint and impacts to residential properties as the underpass but would likely cause higher noise levels in surrounding areas and would be a visual barrier between the east and west sides of Bangerter Highway for properties close to Bangerter Highway.
53.	Jennifer Myers	We would like this to be an underpass instead of a large unsightly overpass. I feel that would help maintain the atmosphere, look, and feel of this area and lessen the impact to the surrounding neighborhoods.	
54.	Mel Lewis	Hi, As I hear it there are two different major options being considered for the change at the intersection of Bangerter and 11400 S: 1. Overpass 2. Underpass Is there an advantage of one vs the other? Thanks, -Mel-	
55.	Jayson McGinnis	I live on Birmingham Circle. We purchased our home 3 years ago because of the great location and beautiful view of the mountains. We would prefer an underpass and not an overpass.	
56.	Mike MacKay	As with so many other neighbors we would strongly urge you to consider an underpass. This is a wonderful neighborhood and we feel that the overpass will forever change the feel of the neighborhood in a negative way.	
57.	ASD	Do you Realize when asking for an underpass instead of an overpass that you have made it so 6 Families are losing their HOMES?? I hope this makes you feel good! Enjoy your view of the Mountains...	
58.	Lori Harper	Please make the interchange an underpass to help with the noise, views, & property values.	
59.	Caton Hanson	Underpass or why not an overpass on 114th over bangerter	
60.	No name given	An over pass will change the view and the desirability to live here. Please build an underpass to help us maintain our beautiful neighborhood. It is worth spending more to keep this area nice	
61.	Amber Ashton	We prefer an underpass at the Bangerter and 11400 South interchange to preserve the feel of the community where we have chosen to build our dream home.	
62.	Casey Valdez	An underpass would be highly desired to preserve the value of our homes. We hope UDOT will do the right thing and listen to the residence of this community that is affected and not just driven by the least expensive option.	
63.	Leah Paddock	Such a tragedy to lose these newer beautiful well-kept homes...not to mention our wonderful neighbors who live in them! Another sad loss...the green space where we have enjoyed things like neighborhood Easter egg hunts and Jordan Heights Days. Wish we could stop it all from happening. For those of us who will remain after all is said and done, an underpass would be least awful.	
64.	Elizabeth McDonald	We too feel strongly that an UNDERPASS would be the best decision for this project. We chose to buy in South Jordan and in this area specifically because of the views, neighborhood aesthetics and nice community feel. We feel	

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		that the noise and unsightly appearance would negatively affect everyone within viewing distance of this intersection - and we want to preserve our neighborhood's beauty and the great area of South Jordan in which we live.	
65.	Brandy and Tyler Raleigh	Underpass would be the best for our community and maintaining the value of our home	
66.	Tamara Gunderson	I am concerned with the way all the highway projects are handled. Bangerter should have been built as a freeway in the first place. UDOT has done the same thing with lights on the Mountain Corridor route. Low 55 MPH on the corridor and Bangerter in many places. Getting stopped continually at lights ... there are too many people on the SW quadrant of the valley to not place freeways when building major roads. Now it will cost millions more to complete this project and upset the look and feel of our neighborhood and 11400 S. You will probably rip out the round about on 11400 S now when it finally looks pleasing. If people won't keep moving then put up a keep moving arrow and start ticketing people. Close most of the entrances on the north side and direct traffic to one light area. By the time you are through chopping up 11400 S there will be at least 3 additional lights. It takes forever to navigate through all the lights. 11400 should have been built as be a straight shot to I-15. Seriously ... does anyone on all the UDOT task forces do ANY planning ahead?? Remember the phrase "If you build it they will come". Look at all the vacant land out here and PLAN on having huge traffic problems. I am against an overpass. The sound from the road will be horrible in the area. This is an upscale neighborhood and you need to consider our wishes. Keep Bangerter level and build an underpass. I would be in favor of NOT having a west bound exit at 11400 South off Bangerter. The traffic is already horrible with all the new shopping areas and 4000 West has become so busy it is difficult to even exit the neighborhood at Hampton Way. Consider very carefully what you would plan and complete if it were YOUR neighborhood and you had to live and fight traffic in this area!!	
67.	Joy Nelson	While I hate to see homes taken by eminent domain, I also see the need for this interchange and think an underpass would be the best solution.	
68.	Tyler Kirkham	Tough to hear about the significant impact that this project will have on the neighborhood. Hopefully everyone whose home is directly impacted will be treated with fairness and respect. Regarding the intersection at Bangerter and 11400, an underpass would seem to be aesthetically better.	
69.	Gene Ushinsky	We would ask for your consideration in building an underpass instead of an overpass on 11400 S. It will help tremendously with the noise levels in the area and would help the homeowners keep property values higher. Thank you.	
70.	Victoria Smith-Pizzo	if 11400 south will be going over Bangerter. Will bangerter be lowered or will 11400 be raised? I live on tippecanoe and would prefer that bangerter be lowered like at Old Bingham Hwy.	
71.	Randy Joseph	It doesn't seem like anyone is conscientious about the harm this project will have on the home owners that remain in the community. I am strongly against the proposal!	
72.	Ryan Eggleston	It's unfortunate to have to weigh in on a lose-lose situation. I hope that those whose homes are directly affected will be fairly compensated for having to lose their homes. For those who stay behind, I think the least invasive approach would be to create an underpass to preserve the quality of the neighborhood going forward.	
73.	Jason McGuire	I would rather see the area be an underpass where 114th would be at grade level and Bangerter would be dug out so it would lower.	
74.	Eva	Leave 11400 at grade as much as possible, repeating 7800 s design here would be cheap, yes, but a mistake. maybe go 50/50 but no more.	

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75.	No name given	PLEASE opt for Bangerter as an underpass.	
76.	Heather Brock	Please make this an underpass so our neighborhood is disturbed as little and the city doesn't completely make our house values nothing	
77.	Terri Summers	An underpass would be the best route to take	
78.	Gordon Summers	Agree that an underpass would be best to minimize noise and aesthetically.	
79.	No name given	It seems to us that having Bangerter as an underpass would be the better overall option and have less of a negative impact on surrounding neighborhoods. There is already significant noise coming from Bangerter as it is.	
80.	Brittany Patterson	An underpass will help provide better access to this beautiful area while maintaining the overall high quality feel. UDOT, please ensure South Jordan remains known for it's quality and do not sacrifice this for a cheap overpass.	
81.	Dexter Davies	My Family and I live on Tippecanoe. We request that you put yourselves in our shoes and realize the financial and quality of life impact this will have on an entire neighborhood. Imagine working two jobs every day for years and years to finally purchase your dream home and come to find out your neighborhood is being ruined by the poor planning of South Jordan. No excuses for poor planning - you need to accept this. 3) Make the intersection an underpass. Don't make a quality neighborhood cheap by saving a few extra dollars. Don't make the mistake of poor planning...again.	
82.	Lindsey Nielsen	Make this an underpass PLEASE! I agree with the other comment. Please put yourselves in our shoes, this could have seriously negative financial impacts on our homes and land. Please respect our homes, land, lives and most importantly our families that have to live with this road in our back yard now.	
83.	Kashif Buttar	I believe an under-pass similar to one just north of 9000S on bangerter will eliminate the noise issue for surrounding neighbors. Hope an under pass is being looks at as a potential alternate to a flyover. Thanks	
84.	Brian Preece	Removal of oval about well past due, need to put in over/underpass for pedestrians at oval about. Bangerter must go underneath 11400 S. W114ts so remaining at grade. This is crucial for survival of businesses in the area.	
85.	T. Troy Williams	Can you please provide cross-sections showing proposed road elevations for the Bangerter underpass as I continue to hear different answers. Also, I love the concept of the underpass, but want to better understand it and how it will impact crossing pedestrian traffic. Sky bridge like nearly every other intersection.	
86.	Terri Summers	I love the fact that Bangerter Highway is going to go under; it's going to be an underpass, so thank you for doing that. That will really help with the noise level. It's really going to help with the noise going under. Please no matter what, keep it as an underpass even if you have to have four lights within a half a mile. Time them right and itn's not going to be an issue. Just make sure those lights are timed.	
87.	Michael Sanford	So the first comment -- I want to make sure that they are considering and underpass versus an overpass.	
88.	Britton Butterfield	I think that an underpass taking Bangerter under 114 is the best option.	
89.	Olsen Family	We are very much opposed to an overpass. It will greatly depreciate our home value and view. We love this area and the only option that we view as fair is an underpass. Don't Damage the views and aesthetics of this area.	

S.R. 154; Environmental Study for Four Locations (Bangerter Highway and 11400 South) – Comments and Responses (March 22, 2016, to April 23, 2016)

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No.	Name	Comment	Response
Pedestrian and Bicyclist Considerations			
90.	Troy Williams	Please provide information regarding how pedestrian traffic will be addressed in this design. How will pedestrians be able to safely cross east/west and north/south?	Crosswalks will be provided on both the north and south sides of 11400 South to allow pedestrians to get through the grade-separated interchange. Existing sidewalks will be maintained on the north and south sides of 11400 South on the east and west sides of the interchange. 11400 South will also have 8-foot shoulders that will allow bicyclist access. 11400 South will have two signalized intersections instead of the existing roundabout. The intersections will have signalized phases for pedestrians and bicyclists to cross 11400 South from north to south or south to north. If local funding is available, South Jordan City could potentially add a grade-separated pedestrian and bicyclist crossing between the two new signalized intersections as a project betterment.
91.	Troy Williams	Please provide information regarding how pedestrian traffic will be addressed in this design. How will pedestrians be able to safely cross east/west and north/south?	
92.	Troy Williams	Please address pedestrian access from the neighborhoods to the north of 11400 S. to and from the shopping to the South as part of this re-design.	
93.	Doc Livingston	WE NEED CROSSING FOR PEDESTRIAN AT LEASE TWO FOR 114TH AND ONE BANTERING. OTHERWISE, ANYTHING IS 10 TIMES BETTER THEN WHAT WE HAVE NOW.	
94.	Sarah Boucher	Nearby pedestrian access is also essential for business and local homeowners/renters.	
95.	Wade Williams	Pedestrian Access and new signals are critical for the walkability of this area.	
96.	Ari Bruening	Please consider ways to allow safe and convenient pedestrian and bicycle access across Bangerter Highway. Daybreak’s trail system currently ends at Bangerter. Good design would allow pedestrians and bicycles to safely and conveniently continue into the District and beyond--all the way to the Jordan River Parkway. A separated bike/pedestrian crossing would be ideal, with bicycle lanes on 11400 South east of Bangerter.	
97.	Ari Bruening	Please prioritize pedestrian and bicycle convenience and safety in this design. There is a large amount of housing north of 11400 South and a lot of destinations south of 11400 South, and providing convenient access will allow people to travel to their destinations without a car. Extending the Daybreak trail system into the District will have the same effect.	
98.	Tracy Catmull	How are pedestrians, runners, and bikers, supposed to cross the street? It looks complicated. Will there be an underground crossing? There are a lot of people who cross.	
99.	Steve Catmull	To sum up please be innovative and pull an innovative solution out of your hat that makes it desirable to choose the mode of operation for the many residents that live near this intersection. Pedestrian/bicycle travel feels like a regression to me from what I see. You are planning to put a pedestrian underpass between across 11400 S for the high-density housing to the north. Why not offer the same efficiency and options to those of us west of the intersection? At a minimum go walk similar intersections at freeway interchanges with your family and see if it is a desirable design that meets the goals of safety, infrastructure and mobility. There realistically are around 1000 residents within walking distance between west of Bangerter and The District. There are also dozens of miles of trails that are used for running, biking and walking that connect to this intersection. My family regularly bikes from our house to the southwest of this intersection to The District for short little errands. I have concerns about this design as it was presented in the open house. I’m going to address my concerns through the lens of the key UDOT goals. 1. A Commitment to Safety – Pedestrian access looks similar to the 10600 S and 11400 S. Having walked the 10600 S intersection near rush hour I can say it is a nerve-racking experience. Cars are in a hurry to get on the freeway. With this design, eastbound cars do not have to stop at Bangerter and 11400. I predict there will be an increase in the close calls or auto-pedestrian accidents on that south-west corner. 2. Optimizing Mobility – Multi-modal increases overall system mobility. How long will it take to cross the road as a pedestrian or on bike with this design? How long does it take now? My experience with a similar design of many	

S.R. 154; Environmental Study for Four Locations (Bangerter Highway and 11400 South) – Comments and Responses (March 22, 2016, to April 23, 2016)

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No.	Name	Comment	Response
		small crossings made for about a 3-5 minute crossing and was frustrating. That will drive me more to use my car which just gums up the intersection even more.	
100.	Steve Catmull	What will the pedestrian access look to/from this school and the northeast corner of the intersection?	
101.	Steve Catmull	Daybreak has over 30 miles of trails used by pedestrians and cyclists. Many of those will want to cross over to the District. Consider this in your modeling exercises and field trips and overall system efficiency.	
102.	Steve Catmull	Please time the time it takes to cross from the west to the east side of Bangerter as a pedestrian through these 4 pedestrian crossings. Right now it takes somewhere between 40 seconds and 3 minutes to cross depending where you land in the signal cycle. I have a concern with some many crossings and the maximum may be more like 5 minutes if I get stopped at every pedestrian crossing to yield to cars. That would be a regression in mobility performance. There could be plenty of pedestrians because of so many nearby residences.	
103.	T. Troy Williams	I live in the townhomes directly north of the oval about and would like additional information and consideration for pedestrian traffic across 114th South to the District shopping center as well as across Bangerter to the west. Please consider both safety and ease in your response as there is a considerable amount of automobile traffic.	
104.	Leigh Gibson	Is there a way to improve pedestrian access from the Garbett homes to the District when you remove the roundabout?	
105.	Jason McGuire	We need a safe bicycle friendly way to cross Bangerter something far beyond just painting a bike lane.	
Property Values			
106.	Jackie Hunter	4. I also believe that potential buyers for my home in the future would decrease if Bangerter was any closer to my home and/or the road closer to wall, thus decreasing the value of the home over time. Which I worried will not be considered in the process of identifying current “land value.” Thus, my feeling on the matter is that I would prefer that the entire property be acquired or none of the property. It also appears that most (if not all) of us in the green area, feel the same way. Thank you for your time and consideration in this matter!	If the property is directly impacted, UDOT will work through the right-of-way process to provide just compensation in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act. However, UDOT cannot compensate for indirect impacts if there are not direct impacts to the property. Utah Code Annotated 72-5-103 states that UDOT may acquire any real property or interests in real property necessary for temporary, present, or reasonable future state transportation purposes by gift, agreement, exchange, purchase, condemnation, or otherwise. UDOT is not authorized by this to purchase and resell residential property, nor is acquisition allowed as a means to mitigate for actual or perceived decrease in resale value.
107.	No name given	We built our dream home here almost 4 years ago. I had this location in mind for a home for over 20 years. We moved here for the view and the location. I know this interchange is necessary. But we need to keep this area nice. Our property values have already nose dived with the interchange.	
108.	Randy Joseph	Also, the homes that remain will suffer a significant loss in value. How do you plan on addressing that?	
Recreation			
109.	Randy Joseph	The proposal is to remove a park/open space at the south end of Tippecanoe, an important feature of our neighborhood. What will you create to replace that park, and where will it be?	The open space area is not considered a park by South Jordan City. Although this area may be used informally for recreation, this area is a detention basin for stormwater that is owned by the Homeowners Association. The Homeowners Association will be provided just compensation in the right-of-way process for impacts to the property. The detention basin will be relocated as part of the project (see previous response to drainage comments).
110.	Dexter Davies	Along with the major impacts you are already presenting how will you make up for the park you are demolishing.	

S.R. 154; Environmental Study for Four Locations (Bangerter Highway and 11400 South) – Comments and Responses (March 22, 2016, to April 23, 2016)

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No.	Name	Comment	Response
Right-of-Way			
111.	James Duncan	I have some concerns about my property being effected along Bangerter Highway. I was told at one of the meeting that it looked like my property was going to be effected approximate 5 feet for a fence as shown on the map. The concern that I have is that this five feet would end up being very costly to both the state and me. The cost would be having to move a large number of trees, a lot of rocks and sprinkler systems. Not including labor cost. Seems to me this is not cost effective. I request that you come and take a look at my backyard and lets discuss my concerns. My telephone number is XXX-XXX-XXXX James E. Duncan [REDACTED] South Jordan Utah	UDOT will work directly with affected property owners throughout the design and construction phases and will have a more-defined design prior to beginning the acquisition process. Right-of-way acquisition will occur in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act. Property-acquisition procedures are described on UDOT's website in the Acquisition, Appraisal, and Relocation section, which includes brochures on property owners' rights. Property acquisition will be compensated at fair market value. If the project impacts only a portion of an owner's property, UDOT will pay fair market value for the land and improvements that are actually impacted. UDOT does not compensate for indirect impacts. Decisions regarding remnant land will be made during the design and construction phases of the project and will be made pursuant to UDOT's real property disposal guide (www.udot.utah.gov/go/propertymanagement) after the construction of the project. Any future allowable uses on the property would also be subject to review and approval by South Jordan City.
112.	Chandra	I am the owner of this property [REDACTED] and would like to see full acquisition of my home since it is right next to the homes which are already marked for full acquisition and can't imagine having home at a major interestion. lately it's been a frustrating with noise, pollution and safety as we had seen one winter accident with truck hitting the compound wall. With so much invested into the property and requesting UDOT to do full aquisition of my home with fair market value and help through this process	
113.	Natalie Carnesecca	We are requesting that we also be on the full acquisition list. We have three kids that love their backyard and are out there all of the time. We have made our yard just for them and our pets, as well as a shed and a nice patio that we enjoy. It would greatly affect our kids and having just a concrete patio is not what we are wanting and the pollution is already bad enough, as well as the noise. I would hate for the wall to be any closer to my house than it already. I also believe it poses danger as we've already had a collision into the wall on our street. We would also like to be able to move before construction begins. We are more than willing to leave as soon as possible. Please contact us with any questions or concerns.	
114.	Kim Ison	Hi my name is Kim Ison and I live at [REDACTED] SouthJordan. We had the udot meeting this last week and was excited about the news of our house being possibly taken. When we bought our home in 2015 we had loved the South Jordan area we looked in daybreak then decided a backyard was really important to us since we have kids and a dog. That's why we chose our house it was in a great neighborhood, with a backyard and a nice newer home. With bangerter highway getting wider we would rather move then get our backyard taken. We have a play set and our dog run that would be gone if the wall moved any closer to our home. Last year we worked really hard to finish our backyard and our basement. We are really hoping if our home does get taken our appraisal will be well enough that we are able to pay off the loans we got to finish the backyard/basement. In addition all the work we did will not all be done in vain. The main concern we have is that we will have have to down grade homes. My husband just started a new job and for the first year (doing training) he got a 20,000 pay cut. In the long run I know we will be happier moving and not having construction in our backyard but those are the concerns we have. Thanks Kim and Nick Ison XXX-XXX-XXXX	
115.	James and Vanessa Pilley	I am the property owner at [REDACTED] When my wife and I selected this home, we felt that it would be the last home we would purchase and we have made many improvements. We felt the view and proximity to The District outweighed the noise from Bangerter. The impact from the proposed changes have convinced us that this is not where we desire to spend our retirement years, for that reason we request full acquisition. Please contact us to discuss all of the financial implications. Thank you very much.	
116.	No name given	We live in 11181 and request complete acquisition of our home and property. We're sad to leave our 4-year old home, but alas...	
117.	Victoria	This area is owned by our HOA. Who benefits from the sale of this property	

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No.	Name	Comment	Response
118.	Brad Riches	We live at [REDACTED] and We would like the acquisition process expedited. Please contact us as soon as possible. Thanks	
119.	Chandra Seenappa	I am the owner of [REDACTED] which is on partial full acquisition and I would like my property to be fully acquired and it is first home after the 6 full acquisition properties. I had a terrible expedrience with back to bangerter highway and need to fully acquire. Please do the needfully in hleping through the process. I do not expect most of the property backing to bagerter to stay in the neighborhood and not a best way to live back to the 10” feet wall.	
120.	Roger Paul Toller	I'm Roger Paul Toller. I'm with Utah First Credit Union. We own real property just east of 3660 West and 114th South. Priori maps did not include or property in the project area or in the environmental impact study. The maps presented tonight do show that our property is included in the project area and it is marked green for potential partial taking. We've not received any notification of any kind an sought out this meeting and attended based on our own research.	
121.	Dallas Lundquist	Would love to look at the purchase of our home. We don't want to deal with construction and tiny backyard. Please call	
122.	Bobbi Hansen	Greetings - The home page for the Bangerter11400 project (http://www.udot.utah.gov/bangerter11400south) says that “proposed interchange design documents will be posted here [insert url].” Can you please provide a link to these documents. I am one of the affected homeowners and I am trying to gather as much information as I can. Additionally, at the meeting held on 3/22 the maps that were on hand included the google earth view of the affected properties. The map available on the project webpage show these properties color blocked out. Is it possible to get a version of this map with the affected properties shown in google earth view? Thank you, Bobbi Hansen XXX-XXX-XXXX	
123.	Dallas Lundquist	I live at this address and would prefer to have full acquisition. We are planning on moving anyways and with this project it has made if very difficult to sale our home. Please contact us to let us know what we can do to start the process of discussion. Thanks	
124.	Michelle Yates	Our house is on the ‘Potential Full Acquisition’ list. We would prefer it to be Full acquisition. We are very concerned about the safety of our children that play in our backyard all the time. If just some of our property is effected it would make our backyard so small that we would no longer be able to have our vegetable garden our room for our swing set. The pollution from the vehicles being closer concerns us as well.	
125.	Kim Ison	Our house is on the ‘Potential Full Acquisition’ list. We would rather it be Full acquisition. If just some of our property is effected it would make our backyard so small that we would no longer be able to have our swing set. The pollution from the vehicles being closer concerns us as well. We would rather move before construction starts.	
126.	Gloria & Reed Thatcher	I think our house will be a mess. They are taking a lot of the yard. So I think I'll have to go. Daughter: She's in the yellow zone, so right now it's scheduled to go through her house. She wanted to comment that they want to go. They want to move. We'd like to go. I don't know what am I supposed to say. It was a shcok to us. We've only been there four years, and we though -- maybe foresight was a problem because didn't they know this was going to happen or anything? That's it guess. I think we want to go because my husban is handicapped and he walks, and that wouldn't be a good walking area anymore	
127.	Mark Dueri	I see the large portion of land adjacent to 4000w is shown as Partial Property Acquisition. What exactly does that	

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No.	Name	Comment	Response
		mean? What will go there? There are currently businesses such as planet fitness in that location. What happens to them?	
128.	Lori Harper	You need to have a solution for helping with traffic build up on 4000 w. also. The line of traffic goes all the way to bangeter. How will this all work with changing the intersection? Please address and fix all the traffic congestion in this area at the same time so that we don't have to rip up or change anything else a few years later. With Daybreak, we will obviously be continuing to get more and more people to the area. Look at the big, long term picture. Don't half do the job now (like you did on Bangeter) and then screw people out of their land and homes a few years later when you know you will have to change something more. It is very upsetting that you knew all along that you would have to make these Bangeter changes but you went ahead and sold off land for beautiful homes to be built on and then to just rip them out from the owners later down the road.	
129.	Dexter Davies	1) Begin acquiring land as far south as possible along Tippecanoe. The current map seems extreme to begin that far north.	
130.	Robert Paxton, DMD	Dr. Robert Paxton. I have two main concerns with this project. One is that properties that are purchased through the State and UDOT have got to be compensated fairly.	
Safety			
131.	Victoria Pizzo	How close can my home be to the freeway and still be safe? South Jordan Building Code has rear property line at 30' feet	The proposed project may have jersey barriers and right-of-way fencing based on the requirements specified in the UDOT roadway design criteria. The specific decision will depend on the roadway horizontal and vertical curvatures, design speed, and proximity of surrounding properties. The UDOT roadway design standards require barriers if there is not a sufficient clear zone between the roadway and the surrounding properties.
132.	Kim Ison	We are concerned about the safety of our children and pets that play in our backyard.	
133.	Jackie Hunter	To whom it may concern: This email is in regards to the proposed construction on 11400 and Bangerter. My house is the most North home still in the green area. So, I just wanted to bring a few concerns to your attention about the potential partial property acquisition. Since I have already had a car come through my back wall my main concerns are: 1. Bringing the road closer to the wall would increase the likelihood of cars hitting the wall again, especially since it appears that the beginning of the off ramp is right at my house (thus they are still going full speed, but starting to turn in our direction). 2. Therefore, it would also be concerning to me to move the wall closer to my home, as that would create even more safety concerns and provide less safe space for my daughter and our dog to play. We would likely have to remove the trampoline from the yard, if that were the case.	
134.	Victoria Pizzo	How will this affect my property? One car has already hit the wall and put a hole in the wall.	
135.	Dexter Davies	Decreasing the speed will also allow for families to be less concerned about the danger of their children crossing the road. This area is the heart of South Jordan and should have lower speeds for safety alone.	
136.	Michael Sanford	We're concerned about safety for our family. There's constantly accidents outside of our home. Yeah, frequent accidents on 114th and 40th, and we're concerned that cars that have an easier accessibility to running into our backyard now.	
137.	Jenny Bradley	We really want the sound wall due to care slide-offs and accidents and for safety reasons for the residents in the community. (See Exhibit A)	
138.	Jenny Bradley	We need the sound wall. Multiple accidents. Service team scared to do grounds/cleanup near area due to car slide	

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No.	Name	Comment	Response
		offs. Someone is going to get hurt. Thanks!	

COMMENT FORM

Name: Tammy Payne

Address: [REDACTED] Daybreak Parkway

Phone: _____

Email: [REDACTED]

Our team will periodically send updates and information about the study to the contact information provided above. If you do not wish to receive information, please check here. ☐

Please list any comments, concerns, and/or suggestions related to the proposed action.

My biggest concern is traffic flow. I currently avoid 11400 S by
the District because people pull out when they shouldn't, stop
when they shouldn't, block traffic, etc. I'm happy to hear the
oval-about will be removed but I don't want a back-up of
traffic at the lights. People already drive too slow down 11400 S.
The speed limit is 45 yet people seem to drive 30.

Do you have any other concerns related to the study?

COMMENT FORM

Name: Chandra Seenappa

Address: [REDACTED]

South Jordan, UT - 84009

Phone: [REDACTED]

Email: [REDACTED]

Our team will periodically send updates and information about the study to the contact information provided above. If you do not wish to receive information, please check here. ☒

Please list any comments, concerns, and/or suggestions related to the proposed action.

I am the Owner of [REDACTED] Stippencane which is on partial full acquisition and I would like to my property to be fully acquired and it is fast lane after the 6 full acquisition properties. I had a terrible experience with backing to Bangerter highway and need to fully acquire. please do the needful in helping through the process.

Do you have any other concerns related to the study?

I do not expect most of the property backing to Bangerter to stay in the neighborhood and not a best way to live back to the 10 feet wall.

COMMENT FORM

Name: Lisa McMurtrey

Address: [REDACTED]

Riverton, UT 84096

Phone: [REDACTED]

Email: [REDACTED]

Our team will periodically send updates and information about the study to the contact information provided above. If you do not wish to receive information, please check here. ☐

Please list any comments, concerns, and/or suggestions related to the proposed action.

I am concerned about coming off of
Bangerter e 11400 & going west. There is a
very short distance to get to the 2
turn lanes to go South on 4000 W.
There is a lot of backed up traffic
currently & hopefully this will help.

Do you have any other concerns related to the study?

Thank you for removing the Round
About. It hasn't worked and is
dangerous.

Thank you for being proactive to help
our future.

COMMENT FORM

Name:

Brian Preece

Address:

[REDACTED]

South Jordan, UT 84095

Phone:

[REDACTED]

Email:

[REDACTED]

Our team will periodically send updates and information about the study to the contact information provided above. If you do not wish to receive information, please check here. ☒

Please list any comments, concerns, and/or suggestions related to the proposed action.

Removal of Oval About well past due,
need to put in over/under pass for
pedestrians @ oval about.
Bangerter must ground near
11450 W 114th so remain at grade.
This is crucial for survival of
businesses in the area.

Do you have any other concerns related to the study?

[Empty lines for additional comments]

COMMENT FORM

Name: T. Troy Williams

Address: South Jordan, UT 84095

Phone:

Email:

Our team will periodically send updates and information about the study to the contact information provided above. If you do not wish to receive information, please check here. ☐

Please list any comments, concerns, and/or suggestions related to the proposed action.

I live in the townhomes directly north of the oval-about and would like additional information & consideration for pedestrian traffic across 114th South to the District Shopping center as well as across Bangerter to the west. Please ~~consider~~ consider both safety and ease in your response as there is a considerable amount of automobile traffic.

Do you have any other concerns related to the study?

Can you please provide cross-sections showing ~~the~~ proposed road elevations for the Bangerter underpass as I continue to hear different answers. Also, I love the concept of the underpass, but want to better understand it and how it will impact crossing pedestrian traffic. Sky bridge like nearly every other intersection?

COMMENT FORM

Name:

Jenny Bradley

Address:

Representing Management/
Ownership of The Residences
at the District apartments

Phone:

Email:

Our team will periodically send updates and information about the study to the contact information provided above. If you do not wish to receive information, please check here. ☒

Please list any comments, concerns, and/or suggestions related to the proposed action.

We need the sound wall.
Multiple accidents. Service team
scared to do grounds/clean up
near area due to car slide offs.
Someone is going to get hurt.
Thanks!

Do you have any other concerns related to the study?

CERTIFIED COPY

BANGERTER 1400 SOUTH INTERCHANGE

A UDOT PROJECT

-oOo-

PUBLIC COMMENTS

April 7, 2016

Midas Creek Elementary
11901 South Park Haven Lane
Riverton, Utah 84096

* * *

Reported by Letitia L. Meredith
Registered Professional Reporter
Certified Shorthand Reporter CA



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P U B L I C C O M M E N T S

JENNY BRADLEY: My name is Jenny Bradley,
representing the residences at The District
Apartments, and we really want the sound wall due to
car slide-offs and accidents and for safety reasons
for the residents in the community. (See Exhibit A.)

* * * *

GLORIA THATCHER: Gloria and Reed Thatcher.

[REDACTED]

I think our house will be a mess. They are
taking a lot of the yard. So I think I'll have to
go.

DAUGHTER: She's in the yellow zone, so right
now it's scheduled to go through her house. She
wanted to comment that they want to go. They want to
move.

GLORIA THATCHER: We'd like to go. I don't know
what am I supposed to say. It was a shock to us.
We've only been there four years, and we thought --
maybe foresight was a problem because didn't they
know this was going to happen or anything? That's it
I guess. I think we want to go because my husband is
handicapped, and he walks, and that wouldn't be a
good walking area anymore.

* * * *

1 TERRI SUMMERS: I love the fact that
2 Bangerter Highway is going to go under; it's going to
3 be an underpass, so thank you for doing that. That
4 will really help with the noise level. It's really
5 going to help with the noise going under. Please, no
6 matter what, keep it as an underpass even if you have
7 to have four lights within a half a mile. Time them
8 right and it's not going to be an issue. Just make
9 sure those lights are timed.

10 * * * *

11 ROGER PAUL TOLLER: I'm Roger Paul Toller. I'm
12 with Utah First Credit Union. We own real property
13 just east of 3660 West and 114th South. Prior maps
14 did not include our property in the project area or
15 in the environmental impact study.

16 The maps presented tonight do show that our
17 property is included in the project area and it is
18 marked green for potential partial taking. We've not
19 received any notification of any kind and sought out
20 this meeting and attended based on our own research.

21 * * * *

22 MICHAEL SANFORD: Michael Sanford, [REDACTED]
23 [REDACTED]. So the first comment -- I want to
24 make sure that they are considering an underpass
25 versus an overpass, and then the other comment is

1 that they need to come back out and do a noise study
2 on 114 -- the corner of 114 and 4000 and reconsider
3 building a wall, bringing the wall around down 114,
4 because the noise level right now already exceeds
5 what is an acceptable level.

6 And if the only consideration of not
7 building is because of cost, that's inappropriate.
8 That's it. That's my comment. We're concerned about
9 safety for our family.

10 ERICKA SANFORD: There's constantly accidents
11 outside of our home.

12 MICHAEL SANFORD: Yeah, frequent accidents on
13 114 and 40th, and we're concerned that cars that have
14 an easier accessibility to running into our backyard
15 now.

16 * * * *

17 BRITTON BUTTERFIELD: I think that an underpass
18 taking Bangerter under 114 is the best option, and I
19 am concerned about the drainage because of the loss
20 of the detention pond, so I'm curious as to the plans
21 to take the water away from that area.

22 ROBERT PAXTON, DMD: Dr. Robert Paxton. I have
23 two main concerns with this project. One is that
24 properties that are purchased through the State and
25 UDOT have got to be compensated fairly, but the main

1 issue that I have is that we have most of the
2 southwestern -- in fact, all of the southwestern
3 corridor is being worked on simultaneously.

4 I have a business on 106th South and
5 1300 West, and I fear congestion problems because
6 114th is being worked on, 106th will be worked on,
7 90th will be worked on, 7200 will be worked on. And
8 it's going to create road rage, congestion, and
9 severe safety problems for the several hundred
10 patients that come in and out of the buildings in my
11 office complex every single day.

12 CautiousBob@gmail.com.

13 * * * *

14 (Whereupon the taking of public comments was
15 concluded at 7:00 p.m.)

16 * * *

C E R T I F I C A T E

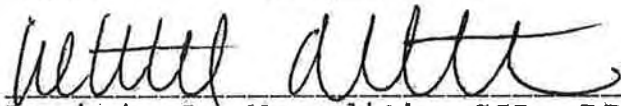
STATE OF UTAH)
)
COUNTY OF SALT LAKE)

THIS IS TO CERTIFY that the foregoing comments were taken before me, Letitia L. Meredith, Registered Professional Reporter and Notary Public for the State of Utah and Certified Shorthand Reporter for the State of California.

That the comments were reported by me in Stenotype, and thereafter transcribed by computer under my supervision, and that a full, true, and correct transcription is set forth in the foregoing pages.

I further certify that I am not of kin or otherwise associated with any of the parties to said cause of action and that I am not interested in the event thereof.

WITNESS MY HAND and official seal at Spanish Fork, Utah, this 20 day of April 2016.


Letitia L. Meredith, CSR, RPR



Cultural and Paleo Clearance with Tier 1 Screening Form

Federally funded projects classified as delegated categorical exclusions are processed in accordance with Stipulation II, Part A and Appendix B of the *Memorandum of Understanding, State Assumption of Responsibility for Categorical Exclusions* (23 USC §326), by which the UDOT assumes responsibility, assigned by the FHWA, for ensuring compliance with Section 106 of the NHPA and with Section 4(f). Federally funded projects classified as documented categorical exclusions are approved by FHWA.

Pursuant to the *Second Amended Programmatic Agreement among the FHWA, the Utah SHPO, the ACHP, the USACE Sacramento District, and the UDOT Regarding Section 106 Implementation for Federal-Aid Transportation Projects in the State of Utah*, and the *Programmatic Agreement between the UDOT and the Utah SHPO Regarding Implementation of U.C.A. 9-8-404 for State Funded Transportation Projects in Utah*, UDOT has taken into account the effects of this undertaking on historic properties and has determined that the finding of effect is **No Historic Properties Affected**.

Pursuant to the *Memorandum of Understanding between the UDOT and the Utah Geological Survey Concerning Agency Responsibilities Pursuant to U.C.A. 79-3-508*, the UDOT has taken into account the effects of this undertaking on paleontological resources. If applicable, consultation letter from UGS is included in the environmental document.

PROJECT: PIN 13963— S-R299(210), 4 Locations on Bangerter Highway, Salt Lake County.

DATE: March 17, 2016

PREPARER: Liz Robinson, M.A., RPA; UDOT Cultural Resources Program Manager

CONTACT: 801-910-2035, lizrobinson@utah.gov

REVIEWER: Elizabeth Giraud AICP, UDOT Architectural Historian

PROJECT STIPULATIONS

- 1) Clearance is contingent upon the contractor adhering to the proposed scope of work and remaining within cleared areas. **Notify Region Environmental of any scope changes.**
- 2) *UDOT Standard Specification 01355 Part 3.7, Environmental Clearances by Contractor*
- 3) *UDOT Standard Specification 01355 Part 3.8, Discovery of Historical Archaeological, or Paleontological Objects, Features, Sites or Human Remains. Notify Region Environmental immediately of any discoveries during construction.*

PROJECT DESCRIPTION

The Utah Department of Transportation (UDOT) proposes to improve the intersection of SR-154 (Bangerter Highway) with 11400 South in Salt Lake County, Utah. At each location the proposed project will include: construction of a new grade-separated interchange configuration; relocation and/or replacement of existing utilities; installation of new and/or modification of existing storm drainage systems; and reconstruction of existing roadways to facilitate transitions to the proposed interchange. In addition, the project will include: modification and/or replacement of sidewalks/bike lanes and pedestrian ramps; the relocation and/or replacement of existing noise walls; installation/update of roadway signage; and replacement of pavement markings. Acquisition of Right-of-Way (ROW) and relocation of residences are anticipated in order to facilitate construction of the proposed interchange.

SCREENING PROCESS

Screened undertakings have the potential to affect historic properties, but have been determined by UDOT to require no further review or consultation under the Agreements. Screening may include any the following tasks and should be appropriate to the complexity, scale, and location of the undertaking. Documentation of the screening will be included in the project files, quarterly report submitted to SHPO, and environmental document.

Antiquities Project Number: U-15-HK-873s

Literature Review

- ☐ Class I literature search (date completed and by whom):
- ☒ Records review (i.e. UDSH, UDOT, BLM, etc.): Preservation Pro
- ☐ Project plans
- ☐ As-built project plans
- ☒ Aerial photographs: Google Earth
- ☐ Historic Maps:
- ☒ Topographic Maps: Midvale, UT 7.5' USGS Quadrangle

- ☐ ROW/Ownership/Parcel Data:
☐ Other:

Description of search results:

The APE for this project is a 0.9-mile-long corridor along Bangerter Highway, side street tie-ins and potential drainage locations. The APE also includes all of the parcels adjoining the current UDOT ROW. Portions of the APE have been previously surveyed but no cultural resources are known within the APE.

Field Review

- ☒ Pedestrian survey (Class III) (survey interval): 15m
☐ Field review other than Class III (reconnaissance, windshield, etc.):
☒ Other: Reconnaissance Level Selective Architectural Survey
☐ None

Description of survey results (If no field survey was conducted, explain why not):

HDR conducted an intensive level archaeological survey and Horrocks Engineers conducted a reconnaissance level selective architectural survey of the APE. No cultural resources were observed in the APE, which has experienced modern commercial and residential development or extensive ground disturbance.

Supporting Documentation

Reports and/or forms generated from any cultural resource inventories shall be submitted quarterly to the Utah Division of State History (UDSH) for filing.

Title of report: *Archaeological Survey of Undeveloped Areas at the Intersections of 11400 South and Bangerter Highway in South Jordan, Salt Lake County, Utah and A Windshield Survey of Historic Architecture for the Bangerter Highway at 11400 South Interchange Project.*

Consultation

- ☐ Utah SHPO (including APE consultation):
☐ Certified Local Government (CLG):
☒ Tribes:
☐ State/Federal Agencies:
☐ Knowledgeable Informants:
☐ Other:
☐ None:

Description of consultation efforts (If no consultation was done, explain why not):

Native American consultation was initiated through letters sent to the Uintah and Ouray Ute Tribes, Shoshone-Bannock Tribes, and Northwestern Band of Shoshone Nation, Eastern Shoshone Tribe of the Wind River Reservation, Paiute Indian Tribe of Utah, Cedar and Shivwits Bands of the Paiute Indian Tribe, Confederated Tribes of the Goshute Reservation, and the Skull Valley Band of Goshute Indians (sent March 2, 2016). To date, no responses or comments were received and any future comments will be addressed.

- ☐ Controversy based on historic preservation issues? If yes, consultation with SHPO and UDOT Central Environmental is required. Additional consultation with FHWA may be required.

Finding of Effect

The undertaking will result in the following finding of effect:

- ☒ No Historic Properties Affected: no cultural resources present
☐ No Historic Properties Affected: cultural resources present but none eligible
☐ No Historic Properties Affected: historic properties present, but are completely avoided by the undertaking and the potential for substantial indirect effects is very low

Description of impacts:

As no cultural resources were present, the UDOT has determined that this project will result in No Historic Properties Affected.



State of Utah

GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

CARLOS M. BRACERAS, P.E.
Executive Director

SHANE M. MARSHALL, P.E.
Deputy Director

March 2, 2016

Ms. Madeline Greymountain
Confederated Tribes of the Goshute Reservation
P.O. BOX 6104/195 Tribal Center Rd.
Ibapah, UT 84034

Subject: UDOT Project Number: S-R299(210), 4 Locations on Bangerter Highway, Salt Lake County (PIN 13963)

Notification of Project and Invitation to be a Consulting Party

Dear Ms. Greymountain,

The Utah Department of Transportation (UDOT) proposes to improve the intersections of SR-154 (Bangerter Highway) with 5400 South, 7000 South, 9000 South, and 11400 South in Salt Lake County, Utah (see the enclosed Project Location Map). At each location the proposed project will include: construction of a new grade-separated interchange configuration; relocation and/or replacement of existing utilities; installation of new and/or modification of existing storm drainage systems; and reconstruction of existing roadways to facilitate transitions to the proposed interchange. In addition, the project will include: modification and/or replacement of sidewalks/bike lanes and pedestrian ramps; the relocation and/or replacement of existing noise walls; installation/update of roadway signage; and replacement of pavement markings. Acquisition of Right-of-Way (ROW) and relocation of residences are anticipated in order to facilitate construction of the proposed interchange.

UDOT requests that you review this information to determine if there are any historic properties of traditional religious and/or cultural importance that may be affected by this undertaking. If your organization is aware of any historic properties that may be impacted by the proposed project, we request your notification as such and your participation as a consulting party during the development of the environmental document. A cultural resources investigation is currently being conducted in the Area of Potential Effects.

Please be assured that UDOT will maintain strict confidentiality about certain types of information regarding traditional religious and/or cultural places that may be affected by this proposed undertaking. We would appreciate any suggestions you might have about any other groups or individuals that should contact regarding this project.

A response within 30 days would be appreciated, should you have concerns about this project and/or wish to be a consulting party. Please feel free to contact me at 801-910-2035 or via email at lizrobinson@utah.gov to answer any questions or provide any additional information.

Thank you for your attention to this project notification and any comments you may have.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Liz Robinson".

Liz Robinson, M.A., RPA
Cultural Resources Program Manager

Enclosure(s):

- Project Maps

Cc: Mr. Ed Naranjo, Administrator
Ms. Mary Pete-Freeman, Cultural Resources Coordinator

IDENTICAL COPIES OF THIS LETTER SENT TO THE FOLLOWING:

Tribal Contact List For S-R299(210), 4 Locations on Bangerter Highway, Salt Lake County (PIN 13963)

Original to:	CC to:
Mr. Darwin St. Clair Jr., Chairman Eastern Shoshone Tribe of the Wind River Reservation P.O. Box 538/15 North Fork Rd Fort Washakie, WY 82514	Ms. Glenda Trosper, Director, Cultural Center Eastern Shoshone Tribe of the Wind River Reservation P.O. Box 538/15 North Fork Rd Fort Washakie, WY 82514
	Mr. Wilfred Ferris, THPO Eastern Shoshone Tribe of the Wind River Reservation P.O. Box 538/15 North Fork Rd Fort Washakie, WY 82514
Mr. Nathan Small, Chair Shoshone-Bannock Tribes of Fort Hall P.O. Box 306 Pima Drive Fort Hall, ID 83203	Ms. Carolyn Smith, Cultural Resource Director Shoshone-Bannock Tribes of Fort Hall P.O. Box 306 Pima Drive Fort Hall, ID 83203
Ms. Corrina Bow, Tribal Chairperson Paiute Indian Tribe of Utah 440 North Paiute Drive Cedar City, UT 84720	Ms. Dorena Martineau, Cultural Resources Manager Paiute Indian Tribe of Utah 440 North Paiute Drive Cedar City, UT 84720
Mr. Shane Warner, Chairman Northwestern Band of Shoshone Nation 707 North Main Street Brigham City, UT 84302	Ms. Patty Timbimboo-Madsen, Cultural Specialist Northwestern Band of Shoshone Nation 707 North Main Street Brigham City, UT 84302
Mr. Shaun Chapoose, Chairperson Ute Indian Tribe of the Uintah and Ouray Ute Indian Reservation P.O. Box 190 Fort Duchesne, UT 84026	Ms. Betsy Chapoose, Director, Cultural Rights and Protection Ute Indian Tribe of the Uintah and Ouray Ute Indian Reservation P.O. Box 190 Fort Duchesne, UT 84026
Ms. Lori Bear Skiby, Chairperson Skull Valley Band of Goshute Indians P.O. Box 448 Grantsville, UT 84029	None
Ms. Lora Tom, Band Chairwoman Cedar Band of Paiutes 4655 North Utah Trail Enoch, UT 84720	Ms. Eleanor Tom, Cultural Resources Representative Cedar Band of Paiutes 4562 N. Wagonwheel Dr. Cedar City, UT 84721
Ms. Jetta Wood, Band Chairwoman Shivwits Band of Paiute Indian Tribe of Utah 6060 West 3650 North Ivins, UT 84738	Ms. Shanan Martineau, Cultural Resource Director Shivwits Band of Paiute Indian Tribe of Utah 6060 West 3650 North Ivins, UT 84738
Ms. Madeline Greymountain, Chairperson Confederated Tribes of the Goshute Reservation P.O. BOX 6104 195 Tribal Center Rd. Ibapah, UT 84034	Mr. Ed Naranjo, Administrator Confederated Tribes of the Goshute Reservation P.O. BOX 6104 195 Tribal Center Rd. Ibapah, UT 84034 Ms. Mary Pete-Freeman, Cultural Resources Coordinator Confederated Tribes of the Goshute Reservation P.O. BOX 6104 195 Tribal Center Rd. Ibapah, UT 84034



GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Utah Geological Survey

RICHARD G. ALLIS
State Geologist/Division Director

March 21, 2016

Kevin Kilpatrick
HDR Engineering, Inc.
2825 East Cottonwood Parkway, Suite 200
Salt Lake City UT 84121-7077

RE: Paleontological File Search and Recommendations for the Bangerter Highway/11400 South and Bangerter Highway/5400 South Interchanges Project, Salt Lake County, Utah U.C.A. 79-3-508 (Paleontological) Compliance; Request for Confirmation of Literature Search according to the UDOT/UGS Memorandum of Understanding

Dear Kevin:

I have conducted a paleontological file search for the Bangerter Highway Interchange Construction Project at 11400 South and 5400 South in response to your request of March 21, 2016. This project qualifies for treatment under the UDOT/UGS executed Memorandum of Understanding.

There are no paleontological localities recorded in our files in these project areas. Quaternary and Recent alluvial and lacustrine deposits that are exposed in these project locations have a low potential for yielding significant fossil localities (PFYC 2). Unless fossils are discovered as a result of construction activities this project should have no impact on paleontological resources.

If you have any questions, please call me at (801) 537-3311.

Sincerely,

Martha Hayden
Paleontological Assistant



Memorandum



To: Marley J. Haupt, Field Biologist
Horrocks Engineers

From: Paul W. West, Wildlife/Wetlands Biologist
UDOT, Environmental Services

P.W.W.

Date: February 16, 2016

Re: S-R299(210) – SR-154 (Bangerter Highway), Reconstruction of Interchanges at four
Locations, Salt Lake County (PIN13963)

CC: Brandon Weston – UDOT, Environmental Services
Ashley Green – UDWR, Headquarters
Mark Farmer – UDWR, Central Region
Matt Howard – UDWR, Central Region
Lloyd Neeley – UDOT, Maintenance
File

Encls:

I understand that the Utah Department of Transportation (UDOT) is proposing to to reconstruct four interchanges on Bangerter Highway (SR-154) in Salt Lake County, Utah (see location maps). These projects propose to construct grade-separated interchanges at 5400 South, 7000 South, 9000 South, and 11400 South. The purpose of this project is to reduce delay and improve mobility on Bangerter Highway and on these east-west arterials.

A review of the Utah Division of Wildlife Resources, Utah Natural Heritage Program (UDWR/UNHP) 2015 database indicates that no federally listed, threatened, endangered or candidate species, or any critical habitat would be affected by this project.

Inasmuch as this is a state funded project with no federal nexus of which I am aware, we are not required to obtain concurrence letters from the U.S. Fish and Wildlife Service. Therefore, I am issuing this memo in-lieu of their concurrence for your environmental documentation.

In addition, I have evaluated the above-referenced project with regard to wildlife issues as required in the UDOT Environmental Study Form.

Based on the UDWR/UNHP 2015 database and Greater Sage Grouse 2015 mapping, UDOT's 2015 Utah Wildlife-Vehicle Collision Reporter, and UDOT's Wildlife Connectivity 2007

database, it is my opinion that due to the nature of this project it should not negatively affect state-sensitive species, important wildlife habitat, big game migration routes, habitat connectivity, migratory birds, fish spawning habitat, or fish passage.

If you have any questions, please call me at (801) 633-8747, or email me at paulwest@utah.gov.



Noise Technical Report

**Bangerter Interchange and 11400 South
Interchange SES**

S.R. 154; Environmental Study for
Four Locations

South Jordan, Utah

May 4, 2016

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Figures

No table of figures entries found.

Appendixes

Appendix A. Maps A-1

1.0 INTRODUCTION

This report evaluates the expected noise impacts during and after construction of a proposed grade-separated interchange at the intersection of 11400 South and Bangerter Highway (State Route 154) in South Jordan, Utah. The proposed grade-separated interchange would be built on Bangerter Highway between 11000 South and 11800 South and on 11400 South from 4000 West to 3600 West.

This impact evaluation discloses the expected noise impacts from the project's Preferred Alternative. The Preferred Alternative includes constructing a grade-separated interchange at the 11400 South/Bangerter Highway intersection, with Bangerter Highway going underneath 11400 South. The Preferred Alternative would require 11400 South to be elevated above its current grade between 4000 West and River Heights Drive. The Preferred Alternative would also remove the existing roundabout on 11400 South between Bangerter Highway and 3600 West and replace it with a five-lane arterial (two travel lanes in each direction with a center turn lane) and traffic signals at the intersections of River Heights Drive/District Drive and Summer Heights Drive/Parkway Plaza Drive.

The Utah Department of Transportation (UDOT) anticipates that, to accommodate the grade-separated interchange and associated on and off ramps, additional right-of-way would be required to construct the interchange, and property acquisitions would be required in the northwest quadrant of the interchange. For the project's State Environmental Study (SES) and this noise analysis, UDOT has currently identified 18 residential properties that could potentially need to be acquired because of the project. The SES and this noise analysis assume that these properties will be acquired. If the final design changes and a different number of properties need to be acquired, this noise analysis will need to be updated. Similarly, if the final design changes the vertical or horizontal alignment of Bangerter Highway or 11400 South, this noise analysis will need to be updated.

Noise impacts were evaluated using noise models and methodologies approved by the Federal Highway Administration (FHWA) and UDOT. Noise impacts were identified at residential locations throughout the project area using level of service C (LOS C) traffic volumes to represent the worst-case noise conditions while traffic is operating at uncongested, free-flow speeds of 65 miles per hour (mph).

2.0 CHARACTERISTICS OF NOISE

Sound travels through the air as waves of minute air-pressure fluctuations caused by vibration. In general, sound waves travel away from the noise source as an expanding spherical surface. As a result, the energy contained in a sound wave is spread over an increasing area as it travels away from the source. This results in a decrease in loudness at greater distances from the noise source.

Sound-level meters measure the actual pressure fluctuations caused by sound waves and record separate measurements for different sound frequency ranges. The decibel (dB) scale used to describe sound is a logarithmic scale that accounts for the large range of sound-pressure levels in the environment. Most sounds consist of a broad range of sound frequencies. Several frequency-weighting schemes have been used to develop composite decibel scales that approximate the way the human ear responds to sound levels. The A-weighted decibel (dBA) scale is most widely used for this purpose. Typical A-weighted noise levels for various types of sound sources are summarized in Table 1.

Table 1. Weighted Noise Levels and Human Response

Sound Source	dBA ^a	Response Descriptor
Carrier deck jet operation	140	Limit of amplified speech
	130	Painfully loud
Jet takeoff (200 feet) Auto horn (3 feet)	120	Threshold of feeling and pain
Riveting machine Jet takeoff (2,000 feet)	110	
Shout (0.5 foot) New York subway station	100	Very annoying
Heavy truck (50 feet) Pneumatic drill (50 feet)	90	Hearing damage (8-hour exposure)
Passenger train (100 feet) Helicopter (in-flight, 500 feet) Freight train (50 feet)	80	Annoying
Freeway traffic (50 feet)	70	Intrusive
Air conditioning unit (20 feet) Light auto traffic (50 feet)	60	
Normal speech (15 feet)	50	Quiet
Living room, bedroom, library	40	
Soft whisper (15 feet)	30	Very quiet
Broadcasting studio	20	
	10	Just audible
	0	Threshold of hearing

Source: CEQ 1970

^a Typical A-weighted noise levels taken with a sound-level meter and expressed as decibels on the "A" scale. The "A" scale approximates the frequency response of the human ear.

Varying noise levels are often described in terms of the equivalent noise level (L_{eq}). Equivalent noise levels are used to develop single-value descriptions of average noise exposure over stated periods of time. The L_{eq} data used for these average noise-exposure descriptors are generally based on A-weighted sound-level measurements. Most often, units of hourly L_{eq} values are used to describe traffic noise.

The logarithmic nature of decibel scales is such that individual decibel ratings for different noise sources cannot be added directly to give the noise level for the combined noise source. For example, two noise sources that produce equal decibel ratings at a given location will produce a combined noise level that is 3 dBA greater than either sound alone. When two noise sources differ by 10 dBA, the combined noise level will be 0.4 dBA greater than the louder source alone.

People generally perceive a 10-dBA increase in a noise source as a doubling of loudness. For example, a 70-dBA sound will be perceived by an average person as twice as loud as a 60-dBA sound. People generally cannot detect a 1- to 2-dBA increase in noise levels. Under ideal listening conditions, differences of 2 or 3 dBA can be detected by some people. A 5-dBA change would probably be perceived by most people under normal listening conditions.

When distance is the only factor considered, sound levels from isolated point sources of noise typically decrease by about 6 dBA for every doubling of distance from the noise source. When the noise source is a continuous line (for example, vehicle traffic on a highway), noise levels decrease by about 3 dBA for every doubling of distance away from the source.

Noise levels at different distances can also be affected by factors other than the distance from the noise source. Topographic features and structural barriers that absorb, reflect, or scatter sound waves can increase or decrease noise levels. Atmospheric conditions (wind speed and direction, humidity levels, and temperatures) can also affect the degree to which sound is attenuated over distance.

Reflections off topographical features or buildings can sometimes result in higher noise levels (lower sound-attenuation rates) than would normally be expected. Temperature inversions and wind conditions can also diffract and focus a sound wave to a location at considerable distance from the noise source. Focusing effects are usually noticeable only for very intense noise sources, such as blasting operations. As a result of these factors, the existing noise environment can be highly variable depending on the local conditions.

3.0 REGULATORY SETTING

The Federal Noise Control Act of 1972 (Public Law 92-574) requires that all federal agencies administer their programs in a manner that promotes an environment free from noises that could jeopardize public health or welfare. The federal regulation that FHWA uses to assess noise impacts is 23 Code of Federal Regulations (CFR) 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. This regulation was most recently updated on July 13, 2010. Utah Administrative Code R930-3 and UDOT's Noise Abatement Policy 08A2-01, revised February 13, 2014, establish UDOT's noise impact and abatement policies and procedures that are compliant with 23 CFR 772.

Noise-abatement criteria (NAC) are used to define the noise levels that are considered an impact (in hourly A-weighted sound-level decibels) for each land use activity category. If future noise levels exceed the NAC, they are considered noise impacts per UDOT's Noise Abatement Policy 08A2-01.

The UDOT NAC are summarized in Table 2. As defined by UDOT, a design-year noise level greater than or equal to the NAC is considered to exceed the NAC, and a 10-dBA increase over existing noise levels is considered to substantially exceed the NAC.

Table 2. UDOT's Noise-Abatement Criteria

Activity Category	L _{eq} Noise Levels (dBA)	Description of Activity Category
A	56 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	66 (exterior)	Residential.
C	66 (exterior)	Active sports areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails and trail crossings.
D	51 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting room, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	71 (exterior)	Hotels, motels, offices, restaurants/bars, and other undeveloped lands, properties, or activities not included in categories A–D or F.
F	—	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	—	Undeveloped lands that are not permitted.

Source: UDOT 2014

4.0 AFFECTED ENVIRONMENT

Current land uses are residential in the northwest quadrant of the Bangerter Highway and 11400 South intersection and in the northeast quadrant near 11100 South, where there is a large multi-family development. The southwest quadrant, the southeast quadrant, and the part of the northeast quadrant between 11100 South and 11400 South all have existing and planned commercial land uses.

Existing noise levels in the project area were determined by taking short-term (15-minute) sound-level measurements at two locations with a Larson-Davis Model 820 Sound Level Meter. Noise-monitoring locations and the associated measured noise levels are listed in Table 3 and are shown in Appendix A at the end of this report.

Measured noise levels were used to characterize the existing noise environment and to validate the Traffic Noise Model (TNM) used for this evaluation. Validating the TNM ensures that the measured noise levels recorded in the field agree with traffic volumes counted during the measurement period.

Traffic volumes were recorded during each measurement period and were counted and classified by vehicle type and by their direction of travel on Bangerter Highway. Table 3 compares the TNM-predicted (modeled) noise levels using traffic data collected in the field during the measurement period. If the measured and modeled noise levels are within 3 dBA, UDOT considers the model to reasonably predict noise levels. As shown in Table 3, the differences between the measured noise levels and the modeled noise levels are less than 3 dBA, so the TNM is validated and reasonably predicts noise levels at residential locations near Bangerter Highway.

Table 3. Measured and Modeled Noise Levels

Monitoring Location ^a	Address	NAC Activity Category and Noise Level (dBA L _{eq}) ^b	Noise Level (dBA L _{eq})		
			Measured ^c	TNM Modeled	Difference between Measured and TNM Modeled
ML-1	~11300 South Tippecanoe Way	B (66)	64.3	66.7	2.4
ML-2	~11000 South Welby Jacobs Canal Trail	B (66)	72.0	73.3	1.3

^a Noise monitoring locations are shown in Appendix A at the end of this report.

^b For descriptions of the activity categories, see Table 2 above, UDOT's Noise-Abatement Criteria.

^c Locations that exceed the residential UDOT NAC are shown in bold.

5.0 ENVIRONMENTAL CONSEQUENCES

5.1 TRAFFIC NOISE IMPACT METHODOLOGY

Methods Used To Assess Impacts

UDOT used the following methods to evaluate traffic noise impacts associated with the Preferred Alternative:

- Noise levels were predicted using the FHWA Traffic Noise Model, Version 2.5 (February 2004).
- Noise impacts from the Preferred Alternative were identified using the evaluation criteria in UDOT's Noise Abatement Policy (February 2014).
- Noise-abatement measures for reducing noise impacts were evaluated using UDOT's guidelines for determining feasibility, reasonableness, and cost-effectiveness.
- Per UDOT's Noise Abatement Policy, the worst-case noise levels were assumed to occur when traffic is operating at LOS C and at the posted speed limit expected on Bangerter Highway (65 mph).

Traffic Noise Model

Traffic noise levels were modeled using the FHWA Traffic Noise Model (TNM), Version 2.5. The TNM estimates acoustic intensity at receiver locations based on the level of sound energy generated from a series of straight-line road segments. Where appropriate, the effects of local shielding from existing structures (for example, intervening rows of homes), vegetation, terrain, and other adjustment factors can be included in the model to provide higher levels of detail and accuracy. Elevations were derived from digital terrain models.

As discussed in UDOT's Noise Abatement Policy, noise-sensitive receptors are property locations where frequent exterior use occurs. Such locations can include patios and backyards, among others. Noise receptor locations for this evaluation were identified from aerial photographs and are shown in Appendix A.

The goal of the noise impact evaluation was to determine whether the predicted noise levels associated with the proposed grade-separated interchange at Bangerter Highway at 11400 South would approach or exceed the applicable NAC (66 dBA for residential locations), thereby warranting consideration of noise-abatement measures. If consideration of noise-abatement measures (noise barriers) was warranted, the evaluation then determined the optimal design characteristics for the barrier (height, length, and cost-effectiveness per UDOT's requirements). Final decisions concerning the installation of noise barriers are the responsibility of UDOT.

5.2 TRAFFIC NOISE MODELING

Existing Conditions

As discussed in Section 1.0, Introduction, the Preferred Alternative would require acquiring 18 residential properties in the northwest quadrant of Bangerter Highway and 11400 South. The properties that would be acquired as part of the Preferred Alternative were not included in the modeling for the existing conditions or the Preferred Alternative.

Existing noise levels were modeled in the project area (three travel lanes in each direction on Bangerter Highway) using a LOS C volume (1,400 vehicles per hour per lane) at the posted speed limit of 65 mph.

Forty-three receptors were included in the TNM to represent about 94 dwelling units in the residential development on the west side of Bangerter Highway (not including the properties that would be acquired with the Preferred Alternative). Modeled noise levels in the residential development on the west side of

Bangerter Highway with the existing conditions (assuming an 8-foot privacy wall) ranged from 67 dBA to 75 dBA, depending on the proximity of the modeled residential receptor to Bangerter Highway. With the existing conditions, the residential NAC of 66 dBA was exceeded at all 43 receptors.

Fifty-three receptors were included in the TNM to represent about 86 first-, second-, and third-floor units in the multi-family development on the east side of Bangerter Highway. Modeled noise levels in the multi-family development with the existing conditions ranged from 73 dBA to 78 dBA. With the existing conditions, the residential NAC of 66 dBA was exceeded at all 53 receptors.

Preferred Alternative – Grade-Separated Interchange on Bangerter Highway at 11400 South

The Preferred Alternative includes constructing a grade-separated interchange at the 11400 South/Bangerter Highway intersection, with Bangerter Highway going underneath 11400 South. The Preferred Alternative would require 11400 South to be elevated above its current grade between 4000 West and River Heights Drive. The Preferred Alternative would also remove the existing roundabout on 11400 South between Bangerter Highway and 3600 West and replace it with a five-lane arterial (two travel lanes in each direction with a center turn lane) and traffic signals at the intersections of River Heights Drive/District Drive and Summer Heights Drive/Parkway Plaza Drive.

Per UDOT's Noise Abatement Policy, to evaluate worst-case noise conditions, traffic on Bangerter Highway was modeled with LOS C volumes (1,400 vehicles per hour per lane at a speed of 65 mph).

In the residential development on the west side of Bangerter Highway, modeled noise levels with the Preferred Alternative (assuming no noise barrier) ranged from 70 dBA to 81 dBA. With the Preferred Alternative, the residential NAC of 66 dBA was exceeded at all 43 receptors included in the model, which represented about 94 dwelling units.

In the multi-family development on the east side of Bangerter Highway, modeled noise levels with the Preferred Alternative (assuming no noise barrier) ranged from 71 dBA to 78 dBA. With the Preferred Alternative, the residential NAC of 66 dBA was exceeded at all 53 receptors included in the model, which represented about 86 dwelling units.

6.0 NOISE-ABATEMENT MEASURES

This section discusses UDOT's methodology for evaluating noise-abatement mitigation measures for the traffic noise impacts identified above in Section 5.2.

Noise walls (barriers) are most effective where they are continuous and block a large number of homes. Noise walls for individual homes do not meet the cost-effectiveness criterion of UDOT's Noise Abatement Policy. Gaps in a noise wall cause "noise leaks," which reduce the effectiveness of the wall at homes near the gap.

In addition, the effectiveness of noise walls decreases with increasing distance from the wall. For example, a residence that is 300 feet from a noise wall might experience noise levels that exceed the residential NAC. However, the noise wall might be ineffective in reducing noise levels by 8 dBA or more at that distance and, therefore, a noise barrier might not be warranted according to UDOT's Noise Abatement Policy.

According to UDOT's Noise Abatement Policy, noise abatement will be considered for highway projects that substantially alter the horizontal or vertical alignment of an existing highway. The proposed project would construct a grade-separated interchange on Bangerter Highway at 11400 South that would substantially alter both the horizontal and vertical alignment of Bangerter Highway; therefore,

consideration of noise mitigation measures is warranted. The goal of noise abatement is to substantially reduce noise, which might or might not result in noise levels below the residential NAC.

The two primary criteria to consider when evaluating noise-abatement measures are feasibility and reasonableness. Noise abatement will be provided by UDOT only if UDOT determines that noise-abatement measures are *both* feasible and reasonable.

6.1 FEASIBILITY AND REASONABLENESS FACTORS

Feasibility Factors

The feasibility of noise-abatement measures deals primarily with construction and engineering considerations, such as safety, location of cross streets, sight distance, and access to adjacent properties, among others. Under UDOT's Noise Abatement Policy, a noise barrier must be considered "acoustically feasible" (that is, the barrier must reduce noise by at least 5 dBA for at least 75% of front-row receptors).

If a noise-abatement measure is determined by UDOT to be acoustically feasible, then the abatement measure will be evaluated to determine whether its construction is reasonable. If a noise-abatement measure is determined by UDOT to be not feasible, it will not be considered any further.

Reasonableness Factors

Under UDOT's Noise Abatement Policy, reasonableness factors must be collectively achieved in order for a noise-abatement measure to be considered "reasonable." If any of the three reasonableness factors specified in the policy are not achieved, the noise-abatement measure will be considered not reasonable and therefore not included in the project.

- **Noise-Abatement Design Goal.** UDOT defines the minimum noise reduction (design goal) from proposed abatement measures to be 8 dBA or greater for at least 75% of front-row receptors. As a result, no abatement measure will be considered reasonable if the noise-abatement design goal cannot be achieved.
- **Cost-Effectiveness.** The cost of noise abatement measures must be considered reasonable for it to be included in the project. Noise-abatement costs are determined by multiplying a fixed unit cost per square foot by the height and length of the barrier.
- For residential receptors, cost-effectiveness is based on the cost of the abatement measure (for example, a noise wall) divided by the number benefited receptors (the total number of dwelling units at which noise is reduced by a minimum of 8 dBA as a result of the abatement measure). Currently, the maximum cost used to determine the reasonableness of a noise-abatement measure is \$30,000 per benefiting residence based on a unit barrier cost of \$20 per square foot of barrier.
- **Viewpoints of Property Owners and Residents.** If a noise-abatement measure is both feasible and cost-effective, UDOT will also consider the viewpoints of property owners and residents to determine whether the noise-abatement measures are desired. Balloting will be conducted for those noise-abatement measures that both meet the noise-abatement design goal and are cost-effective consistent with the procedures described in UDOT's Noise Abatement Policy.

6.2 NOISE ABATEMENT FOR THE PREFERRED ALTERNATIVE

The noise-abatement analysis discussed in this section was limited to considering two locations where noise barriers (walls) could be feasible and reasonable under UDOT's Noise Abatement Policy. The locations of the two potential noise barriers are shown on Map 1 and Map 2 in Appendix A.

Barrier 1 (West Side of Bangerter Highway)

Barrier 1 would be located adjacent to the southbound off ramp to 11400 South (Map 1 in Appendix A). The proposed barrier would be about 3,427 feet long and was modeled at heights ranging 6 feet to 18 feet to determine the barrier height at which the barrier would meet UDOT's design goal of providing an 8-dBA insertion loss (noise reduction) to at least 75% of the first-row dwelling units and would be cost-effective (that is, would cost less than \$30,000 per benefitting residence).

As shown in Table 4 below, a 12-foot-high noise barrier adjacent to the southbound off ramp to 11400 South would benefit about 85% of first-row dwelling units (8 dBA to 14 dBA of acoustic benefit) and would provide 8 dBA to 10 dBA of acoustic benefit at second- and third-row residences.

Under UDOT's cost criteria, Barrier 1 would cost \$822,480 and would benefit about 71 residences at a cost of \$11,584 per benefitting residence. Under UDOT's Noise Abatement Policy, the cost per benefitting residence would be less than UDOT's cost threshold of \$30,000 per benefitting residence.

The proposed Barrier 1 is feasible and reasonable.

Barrier 2 (East Side of Bangerter Highway)

Barrier 2 would be located adjacent to the northbound on ramp from 11400 South to Bangerter Highway to shield residents of the multi-family development near 11100 South (Map 1 and Map 2 in Appendix A). Barrier 2 would be about 1,350 feet long and was modeled at heights ranging 6 feet to 18 feet to determine the barrier height at which the barrier would meet UDOT's design goal of providing an 8-dBA insertion loss (noise reduction) to at least 75% of the first-row dwelling units and would be cost-effective (that is, would cost less than \$30,000 per benefitting residence).

As shown in Table 5 below, a 15-foot-high noise barrier adjacent to the northbound on ramp from 11400 South to Bangerter Highway would benefit about 78% of first-row units (8 dBA to 13 dBA of acoustic benefit) and would provide 8 dBA to 11 dBA of acoustic benefit at second- and third-floor units.

Under UDOT's cost criteria, Barrier 2 would cost \$405,000 and would benefit about 62 units in the multi-family complex at a cost of \$6,532 per benefitting residence. Under UDOT's Noise Abatement Policy, the cost per benefitting residence would be less than UDOT's cost threshold of \$30,000 per benefitting residence.

The proposed Barrier 2 is feasible and reasonable.

Table 4. Noise Abatement Analysis for Barrier 1 (West Side of Bangerter Highway)

Barrier Height (feet)	Area (square feet)	Cost at \$20 per Square Foot (\$)	Total Number of First-Row Benefiting Residences (%)	Barrier Reasonable at Barrier Height (≥ 8 dBA IL for 75% of First Row)?	Total Number of Benefiting Residences	Cost per Benefiting Residence (\$)	Cost per Benefiting Residence $\leq$ \$30,000?	Barrier Feasible and Reasonable?
6	20,562	411,240	12 (35)	No	NA	NA	NA	No
8	27,416	548,320	12 (35)	No	NA	NA	NA	No
10	34,270	685,400	25 (74)	No	NA	NA	NA	No
12	41,124	822,480	29 (85)	Yes	71	11,584	Yes	Yes

Barrier length = 3,427 feet

IL = insertion loss (noise reduction); NA = not applicable

Table 5. Noise Abatement Analysis for Barrier 2 (East Side of Bangerter Highway)

Barrier Height (feet)	Area (square feet)	Cost at \$20 per Square Foot (\$)	Total Number of First-Row Benefiting Residences (%)	Barrier Reasonable at Barrier Height (≥ 8 dBA IL for 75% of First Row)?	Total Number of Benefiting Residences	Cost per Benefiting Residence (\$)	Cost per Benefiting Residence $\leq$ \$30,000?	Barrier Feasible and Reasonable?
6	8,100	162,000	0 (0)	No	NA	NA	NA	No
8	10,800	216,000	0 (0)	No	NA	NA	NA	No
10	13,500	270,000	6 (33)	No	NA	NA	NA	No
12	16,200	324,000	8 (44)	No	NA	NA	NA	No
14	18,900	378,000	12 (67)	No	NA	NA	NA	No
15	20,250	405,000	14 (78)	Yes	62 ^a	6,532	Yes	Yes

Barrier length = 1,350 feet

IL = insertion loss (noise reduction); NA = not applicable

^a Includes second- and third-floor units

Viewpoints of Property Owners and Residents

Once the final design for the Preferred Alternative is available, UDOT will re-evaluate the noise analysis. If the proposed noise-abatement measures (Barrier 1 and Barrier 2) are still both feasible and cost-effective, UDOT will then consider the viewpoints of property owners and residents to determine whether the proposed noise-abatement measures are desired. Balloting will be conducted for those noise-abatement measures that both meet the noise-abatement design goal and are cost-effective consistent with the procedures described in UDOT's Noise Abatement Policy 08A2-01, Section (C)(2)(c).

6.3 CONSTRUCTION NOISE

Construction Noise Activities

Table 6 shows the noise levels produced by various types of construction equipment. Properly maintained equipment will produce noise levels near the middle of the indicated ranges. The types of construction equipment used for this project will typically generate noise levels of 80 dBA to 90 dBA at a distance of 50 feet while the equipment is operating (Gharabegian and others 1985; EPA 1971; Toth 1979).

Construction equipment operations can vary from intermittent to fairly continuous with multiple pieces of equipment operating concurrently. Assuming that a bulldozer (87 dBA), backhoe (90 dBA), grader (90 dBA), and front-end loader (82 dBA) are operating concurrently in the same area, peak construction-period noise would generally be about 94 dBA at 50 feet from the construction site. Table 6 summarizes noise levels expected near an active construction site with the above equipment operating.

Table 6. Typical Noise Levels for Construction Equipment

Type of Equipment	Noise Level (dBA) at 50 Feet
Bulldozer	80
Front loader	72 – 84
Jack hammer or rock drill	81 – 98
Crane with headache ball	75 – 87
Backhoe	72 – 93
Scraper and grader	80 – 93
Electrical generator	71 – 82
Concrete pump	81 – 83
Concrete vibrator	76
Concrete and dump trucks	83 – 90
Air compressor	74 – 87
Pile drivers (peaks)	95 – 106
Pneumatic tools	81 – 98
Roller (compactor)	73 – 75
Saws	73 – 82

Source: EPA 1971

Locations within about 1,900 feet of a construction site will experience occasional episodes of noise levels greater than 60 dBA. Areas within about 750 feet of a construction site will experience episodes of noise levels greater than 70 dBA. Such episodes of high noise levels associated with the proposed construction would not be continuous throughout the day and would generally be restricted to daytime hours.

Most construction activities associated with the proposed project would occur during daylight hours, which would minimize the number of noise impacts. Noise impacts could occur when construction directly adjacent to residential, park, or recreational areas is necessary.

Construction Noise Mitigation

To reduce temporary noise impacts associated with construction, contractors will comply with all state and local regulations relating to construction noise. The following measures could be incorporated into contract specifications to help reduce the effects of construction noise:

- All equipment will have sound-control devices that are at least as effective as those on the original equipment. No equipment will have unmuffled exhaust.
- As directed by the UDOT Construction Manager, the contractor will implement appropriate additional noise-mitigation measures, possibly including changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, or installing acoustic barriers around stationary construction noise sources.

7.0 REFERENCES

[CEQ] Council on Environmental Quality

- 1970 Environmental Quality: The First Annual Report of the Council on Environmental Quality. U.S. Government Printing Office, Washington, DC.

[EPA] U.S. Environmental Protection Agency

- 1971 Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances. NTID300.1. Prepared by Bolt, Beranek, & Newman, Boston, MA. U.S. Government Printing Office, Washington, DC.

Gharabegian, A., K.M. Cosgrove, J.R. Pehrson, and T.D. Trinh

- 1985 Forest Fire Fighters' Noise Exposure. *Noise Control Engineering Journal* 25(3): 96–111.

Toth, W.J.

- 1979 Noise-Abatement Techniques for Construction Equipment. HS-803 293; DOT-TSC-NHTSA-79-45; PB-300 948. U.S. Department of Transportation, National Highway Traffic Safety Administration, Washington, DC.

[UDOT] Utah Department of Transportation

- 2014 UDOT Noise Abatement Policy 08A2-1.

APPENDIX A. MAPS

LEGEND

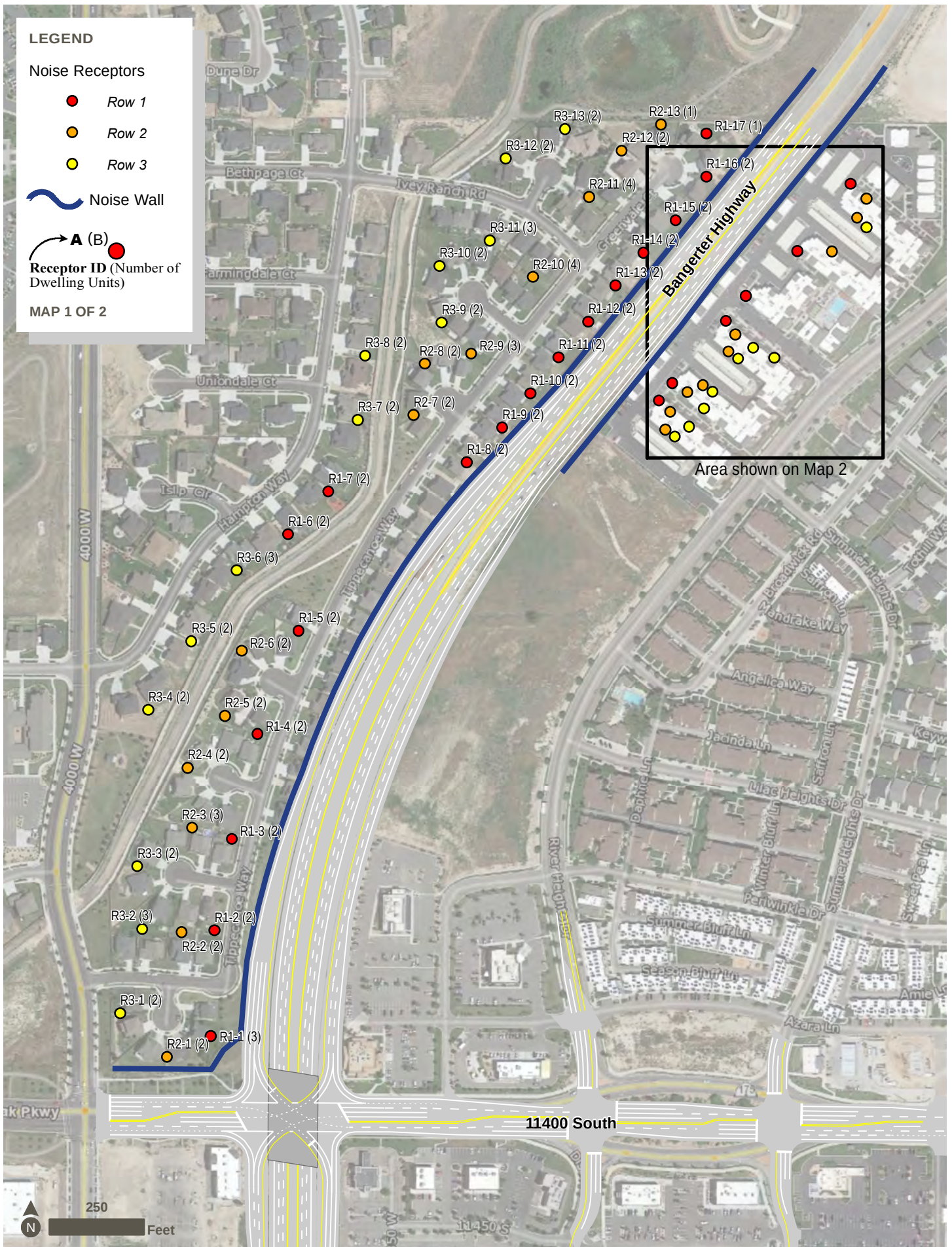
Noise Receptors

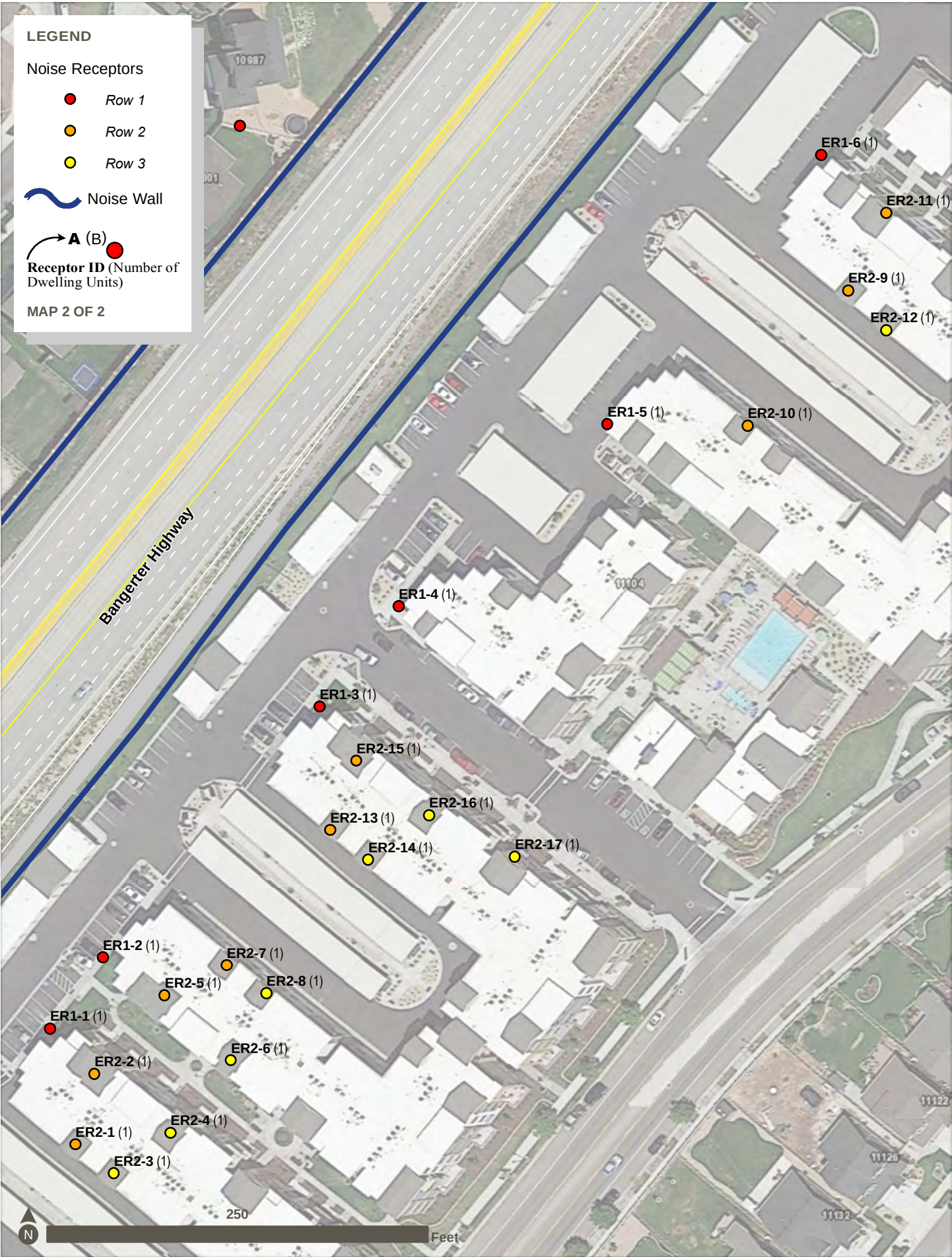
- Row 1
- Row 2
- Row 3

~ Noise Wall

● **A (B)**
Receptor ID (Number of Dwelling Units)

MAP 1 OF 2





MEMORANDUM

UTAH DEPARTMENT OF TRANSPORTATION

Date: Thursday, March 3, 2016

To: Craig Bown
UDOT Region 2 Environmental Manager

From: Rod Hess
UDOT Senior Landscape Architect

CC: File

Re: **ENVIRONMENTAL REVIEW FOR WETLANDS AND WATER RESOURCES**
PIN 13963; S-R299(210); Environmental for 4 locations on Bangerter, Salt Lake County, Utah – (11400 South)

Project Scope of Work

The Utah Department of Transportation (UDOT) is preparing a State Environmental Study to determine potential project impacts that would occur by making intersection improvements, including the potential of a highway to highway interchange, at the existing intersection of Bangerter Highway (SR-154) and 11400 South (SR-175). The project information, study area and water resource analysis is included as an attachment to this letter.

Wetland and Water Resources

Based on the results of the desktop analysis and field investigation provided in the attached documents, Welby Jacobs Canal is conveyed through the project under 11400 South, via a culvert. No impacts to the culvert or the canal itself are expected to occur, in part because of this location in the western portion of the study area.

No other Waters of the US, including wetlands, streams and/or ditches were identified within the study area of the proposed project to improve the existing intersection of 5400 South at Bangerter Highway.

This proposed project would impact more than one (1) acre of earth and be required to comply with the Utah Pollutant Discharge Elimination System (UPDES) by meeting requirements of the General Permit for Discharges from Construction Activities (UPDES Permit Number UTRC00000)

No FEMA 100-year floodplains are identified within the project study limits.

Mitigation Commitments:

1. **A Storm Water Pollution Prevention Plan (SWPPP) is required to be completed by UDOT during design and advertisement, which will be provided to the project awarded contractor.**
2. **The project awarded contractor must implement and maintain the project SWPPP, in accordance with the UPDES Permit No. UTRC00000, throughout the construction of the project.**



Mr. Rod Hess
658 North 1500 West
Orem, Utah 84057

**Re: State Environmental Study – 11400 South and Bangerter Highway
UDOT Project No. S-R299(210); PIN No. 13963
Waters of the U.S. Survey**

Dear Rod,

UDOT is conducting a State Environmental Study (SES) to evaluate the potential benefits and impacts of a freeway-style interchange on Bangerter Highway (SR-154) at 11400 South in Salt Lake County, Utah. As part of the SES, the project must take into consideration potential project impacts to waters of the U.S. (WOUS), including wetlands. HDR biologist Mike Perkins completed a desktop review of available data and conducted a field survey on January 29, 2016 to evaluate the study area and delineate any potentially jurisdictional WOUS features. The study area for the WOUS survey is about 75 acres and entails the area in and around the existing at-grade interchange of the Bangerter Highway and 11400 South (see Figure 1 – Project Study Area and Delineation Map). This letter has been prepared to document the results of the WOUS survey.

METHODOLOGY

Prior to the field survey, HDR reviewed available information that included the following sources:

- USACE regulations, delineation procedures, and guidance
- Aerial imagery of the survey area available in Google Maps
- Topography and surface water mapping from the USGS Topographic map of “Midvale Quadrangle, Wyoming. 7.5 minute series”
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping

To conduct the field survey, HDR viewed all readily accessible areas within the study area to sufficiently ascertain whether potential WOUS features were present. Delineation procedures were employed to investigate and delineate potential WOUS features. General information on site characteristics and conditions were also observed and recorded.

SITE CONDITIONS

The study area is mainly comprised of developed unvegetated areas, landscaped areas, and disturbed uplands. On the day of the field survey, weather was mostly sunny with a high of 45°F and a low of 26°F. Although the field survey occurred outside the typical growing season, vegetation in the area was sufficiently identifiable and the ground was generally free of snow.



RESULTS

USFWS NWI mapping does not include any wetlands or other aquatic habitats within the study area. Additionally, the USGS Topographic map of “Midvale Quadrangle, Wyoming. 7.5 minute series” does not include any surface water features within the study area. A canal was identified on aerial imagery as the Welby Jacobs Canal, which traverses through the western portion of study area.

No potentially jurisdictional wetlands or streams were encountered within the study area during the field survey. In accordance with USACE guidance for delineating waterbodies, the Welby Jacobs Canal was delineated to its Ordinary High Water Mark (OHWM) as indicated by observed physical characteristics including a distinct change in vegetation (from vegetated to unvegetated), a natural line impressed on the bank, litter and debris, and sediment sorting. Within the study area, two open segments of the canal are about 80 feet long and 170 feet long respectively (250 feet in total length). The average width of the active channel is about 11.0 feet, which equates to a total area of 2,750 square feet (0.063 acre). The canal did not contain any standing or flowing water during the field survey, but based on review of aerial imagery and understanding of the canal system in the Salt Lake Valley, the canal generally carries water during the irrigation season (April to October) and its excess flows and return flows are understood to eventually drain to the Great Salt Lake.

No other potentially jurisdictional features were observed within the study area. Because the study area does not contain potential wetlands, formal wetland delineation procedures beyond visual site assessment were not necessary. The attached figure provides a delineation map for the study area.



Welby Jacobs Canal

On June 29, 2015, the U.S. Environmental Protection Agency and the USACE jointly published the *Clean Water Rule: Definition of “Waters of the United States”* and it became effective August 28, 2015 (40 CFR 230.3), superseding guidance released in 2008 (Rapanos Guidance) pertaining to the 1986 definition of waters of the U.S (33 CFR 328.3). However, a nationwide stay was issued by the U.S. Court of Appeals for the 6th Circuit on October 9, 2015, which blocked the implementation of the Rule. The USACE currently relies on the Rapanos Guidance to help guide jurisdictional determinations. Under the Rapanos Guidance, the USACE generally asserts jurisdiction over ditches and canal that carry a “relatively permanent” flow of water. Relatively permanent waters either flow year round or have continuous flow at least seasonally (typically for at least three months). Ditches and canals that carry a relatively permanent flow of water and drain to a WOUS (whether directly or indirectly) are typically regulated as jurisdictional tributaries. Based on current USACE guidance, regulations, and delineation procedures, HDR has delineated the canal as a jurisdictional WOUS.

The proposed project would not impact the canal or any other potential WOUS so it would not require authorization from the USACE under Section 404 of the Clean Water Act (CWA; 33 USC 1344). Thank you



for attention in reviewing this information to document the WOUS survey for the project. Please do not hesitate to contact me if you have any questions or would like to discuss these results.

Sincerely,

HDR, INC.

A handwritten signature in black ink, appearing to read 'Mike Perkins', written over a light blue rectangular background.

Mike Perkins
Biology and Environmental Compliance Practice Lead

Attachment:

Figure 1. Project Study Area and Delineation Map

