

C. Resource Clearances



Cultural and Paleo Clearance with Tier 1 Screening Form

Pursuant to 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 14415—S-0154(84)14; Bangerter Hwy @ 6200 South UPDATE, Salt Lake County

DATE: December 7, 2018

PREPARER: Jonathan Dugmore, M.A.A.; Region 2 Archaeologist

CONTACT: 385-414-2066, jdugmore@utah.gov

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

UDOT approved a State Environmental Study for improvements at the intersection of SR-154 (Bangerter Highway) and 6200 South on April 17, 2017. The original document proposed to construct a grade-separate Single Point Urban Interchange (SPUI) at the existing intersection of Bangerter Highway and 6200 South. The new interchange would allow for unimpeded traffic flow along Bangerter Highway and is projected to operate at LOS D in the year 2040. The project area is along Bangerter Highway from approximate milepost 14 to 15.8, and on 6200 South between Westbrook Drive and 3840 West (see maps in appendix).

The project would also include construction of associated exit/entrance ramps, relocation of a portion of Jordan Valley Water Conservancy District (JVWCD) aqueduct, and if funding is available, construction of either NB/SB auxiliary lane(s) from 5400 South to 6200 South and/or from 6200 South to 7000 South. Due to the proposed upgrades, the existing pedestrian bridge over Bangerter Highway would be removed. A permanent solution for the bridge removal is being developed with Granite School District. The project would also provide utility and storm drainage modifications; and installation of new pavement, traffic signals, ATMS equipment, and roadway signage. This project will require right-of-way acquisition.

Since completion of the original document, UDOT has modified the design of the intersection at 6200 South and Fox Hills Drive/Dixie Drive. The original project included the construction of a High-T intersection at this location. The revised design would move the signalized intersection further west approximately 250 feet to accommodate all direction of travel, safer pedestrian crossing, and eliminate the need to widen 6200 south west to Country Hills Drive. This updated design will require additional right-of-way. All other elements previously evaluated from the original scope would remain the same.

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: N/A

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 photos
- ☐ Historic Maps:
- ☒ Topographic Maps: GLO maps, USGS topo maps
- ☐ ROW/Ownership/Parcel Data:
- ☐ Other:

Description of search results: The search was confined to the updated project APE which consists of the intersection at 6200 South and Fox Hills Drive/Dixie Drive. No cultural properties have been identified at this time.

Field Review

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

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

Survey was not conducted for this updated clearance as the new disturbance falls within a completely urbanized area. While new right-of-way acquisition is anticipated, it will not affect any historic homes or archaeological sites.

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: *N/A*

Consultation

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

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

Consultation letters were not submitted for this updated cultural clearance as consultation letters were sent out with the previous clearance. To date, none of the tribes have responded to these notifications.

- ☐ 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:

The additional design modifications listed above for which this cultural clearance is written does not impact any historic or prehistoric cultural properties, including historic and NRHP-eligible housing. Therefore the UDOT has determined that this project will result in No Historic Properties Affected.



Cultural and Paleo Clearance with Tier 1 Screening Form

Pursuant to 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 14415—S-0154(84)14; Bangerter Hwy @ 6200 South, Salt Lake County

DATE: February 5, 2018

PREPARER: Jonathan Dugmore, M.A.A.; Region 2 Archaeologist

CONTACT: 385-414-2066, jdugmore@utah.gov

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

UDOT is proposing to grade-separate the existing intersection of Bangerter Highway (SR-154) and 6200 South. The proposed project area is along Bangerter Highway from approximate milepost 14 to 15.8, and on 6200 South between Westbrook Drive and 3840 West (see project map). The project includes: construction of a grade-separated interchange (Bangerter Highway over 6200 S.), exit/entrance ramps from Bangerter Highway to 6200 South; a NB auxiliary lane from 6200 S. to 5400 S., and a SB auxiliary lane from 6200 S. to 7000 S.; relocation and construction of a portion of the Jordan Valley Aqueduct and associated underground reservoir facilities; and relocation and construction of a pedestrian structure over Bangerter Highway. The project would also include: intersection modifications on 6200 S. at Dixie Dr. and 3510 W.; utility and storm drainage modifications; and installation of new pavement, traffic signals, ATMS equipment, and roadway signage. This project will require right-of-way acquisition.

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: U17HX1037ps

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 photos
- ☐ Historic Maps:
- ☒ Topographic Maps: GLO maps, USGS topo maps
- ☐ ROW/Ownership/Parcel Data:
- ☐ Other:

Description of search results: The search was confined to the project APE which consists of Bangerter Highway from approximate milepost 14 to 15.8, and on 6200 South between Westbrook Drive

and 3840 West. One historic site, 42SL286, the Utah Lake Distributing Canal, was identified within the project area.

Field Review

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

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

Survey was conducted for this project by the Horrocks principal investigator. The previously recorded site, 42SL286 - the Utah Lake Distributing Canal, was updated to include the sections within the project area. It has been determined eligible for the NRHP.

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: *An Archaeological Inventory for the Bangerter Highway at 6200 South Project*

Consultation

- ☐ Utah SHPO (including APE consultation):
- ☐ Certified Local Government (CLG):
- ☒ Tribes: see below
- ☐ 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 Eastern Shoshone Tribe of the Wind River Reservation, Shoshone-Bannock Tribes, Northwestern Band of Shoshone Nation, Uintah and Ouray Ute Tribes, and the Skull Valley Band of Goshute Indians (sent January 3, 2018). In addition, notification was also sent to those tribes with whom UDOT has Section 106 Programmatic Agreements: Cedar Band of Paiutes, Shivwits Band of Paiute Indian Tribe, and the Confederated Tribes of the Goshute Reservation (sent January 3, 2018). To date, none of the tribes have responded to these notifications.

- ☐ 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:

While the NRHP-eligible historic site, 42SL286 – the Utah Lake Distributing Canal, has been identified within the project area, construction for the project will avoid the site and will not impact it in any form. Therefore, 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

Tribal Consultation Notification Form

The Utah Department of Transportation (UDOT) is preparing to undertake the subject state-aid project. In accordance with the Programmatic Agreement between the UDOT and the Utah State Historic Preservation Officer Regarding Implementation of U.C.A. 9-8-404 for State Funded Transportation Projects in Utah (executed March 19, 2008), the UDOT has taken into account the effects of this undertaking on historic properties and is affording the Native American Tribes an opportunity to comment on the undertaking.

UDOT Project: Bangerter Hwy @ 6200 South, Salt Lake County, Utah; PIN 14415

Contact Name: Jonathan Dugmore

Date: January 3, 2018

Address: 2010 South 2760 West, Salt Lake City, Utah 84104

Telephone: 385-414-2066

Email: jdugmore@utah.gov

Project Description: UDOT is proposing to grade-separate the existing intersection of Bangerter Highway (SR-154) and 6200 South. The proposed project area is along Bangerter Highway from approximate milepost 14 to 15.8, and on 6200 South between Westbrook Drive and 3840 West (see project map). The project includes: construction of a grade-separated interchange (Bangerter Highway over 6200 S.), exit/entrance ramps from Bangerter Highway to 6200 South; a NB auxiliary lane from 6200 S. to 5400 S., and a SB auxiliary lane from 6200 S. to 7000 S.; relocation and construction of a portion of the Jordan Valley Aqueduct and associated underground reservoir facilities; and relocation and construction of a pedestrian structure over Bangerter Highway. The project would also include: intersection modifications on 6200 S. at Dixie Dr. and 3510 W.; utility and storm drainage modifications; and installation of new pavement, traffic signals, ATMS equipment, and roadway signage. This project will require right-of-way acquisition.

Archaeological Potential (Prehistoric or Historic Sites):

☐ Known prehistoric sites in the project area

☒ Known historic sites in the project area

☐ Likely to find prehistoric sites in the project area

☐ Likely to find historic sites in the project area

☒ Unlikely to find prehistoric sites in the project area

☐ Unlikely to find historic sites in the project area

☐ No expected ground disturbance

☐ Other:

Additional Information/Comments: The project area of potential effect (APE) has been surveyed for cultural resources. One NRHP-eligible historic canal - 42SL286, the Utah Lake Distributing Canal – was identified. It is not anticipated that the canal will be altered by construction as part of the project.

Tribal Information

«AddressBlock»

Copies to: «cc_1»

«cc_2»

«cc_3»

«cc_4»

Comments:

1. Do you wish to be a consulting party on this project? ☐Yes ☐No ☐Not Sure
2. If you do not wish to be a consulting party, do you wish
to continue to be involved in the development of this project? ☐Yes ☐No ☐Not Sure
- Note:** If your answer is "Not Sure," UDOT will continue to provide information.
3. Are you aware of any traditional religious or culturally
important places in or near the project area? ☐Yes ☐No ☐Not Sure
4. If yes, can you share details about the place (e.g., location
and other characteristics) and any concerns you may have? ☐Yes ☐No
5. Is this information sensitive? ☐Yes ☐No

Additional Comments:

Name of person completing this form, if different from above:

Signature:

Date:

Identical copies of the Project Notification Form sent to the following recipients:

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. Joshua Mann, THPO Eastern Shoshone Tribe of the Wind River Reservation P.O. Box 538/15 North Fork Rd Fort Washakie, WY 82514
Mr. Blaine Edmo, 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
Mr. Darren Parry, 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. Luke Dunkin, 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. Candace Bear, Chairwoman Skull Valley Band of Goshute Indians P.O. Box 448 Grantsville, UT 84029	None

Original to:	CC to:	Email to:
Mr. Mertin Bow, Band Chairman Cedar Band of Paiutes 4655 North Utah Trail Enoch, UT 84720	Ms. Vala Parashonts, Cultural Resources Representative Cedar Band of Paiutes 533 South 640 West Cedar City, UT 84721	lora.tom@ihs.gov (Lora Tom)
Mr. Patrick Charles, Band Chairman Shivwits Band of Paiute Indian Tribe of Utah 6060 West 3650 North Ivins, UT 84738	Ms. Sabrina Redfoot, Cultural Resources Director Shivwits Band of Paiute Indian Tribe of Utah 6060 West 3650 North Ivins, UT 84738	mohave_paiute@yahoo.com
Mr. Virgil Johnson, Chairman 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	virgilwjohnson@yahoo.com marypete@goshutetribe.com



State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Utah Geological Survey

RICHARD G. ALLIS
State Geologist/Division Director

January 29, 2018

Peter Steele
Horrocks Engineers
2162 West Grove Parkway, Suite 400
Pleasant Grove UT 84062

RE: Paleontological File Search and Recommendations for the UDOT 6200 South Bangerter Interchange 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 Peter:

I have conducted a paleontological file search for the South Bangerter Interchange Project in response to your email of January 26, 2018. This project qualifies for treatment under the UDOT/UGS executed Memorandum of Understanding.

There are no paleontological localities recorded in our files for this project area. Quaternary and Recent alluvial and lacustrine deposits that are exposed along this project right-of-way 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

Environmental Services

DATE: December 3, 2018
TO: Craig Bown, Environmental Specialist, Horrocks Engineers
FROM: Matt Howard, Natural Resources Manager
SUBJECT: S-0154(84)14; Bangerter at 6200 South SES Reeval T&E PIN 14415

Dear Craig,

I have reviewed the biological summary regarding improvements at the intersection of SR-154 (Bangerter Highway) and 6200 South and the project's potential impacts to species protected by the Endangered Species Act (ESA) and concur with its findings. Given the urban development in the project's action area, I agree with the summary's findings that the project would have no effect on species protected by the ESA, MBTA, or BGEPA. I have also reviewed the project to assess impacts to greater sage-grouse and have found that the project would have no impact on sage-grouse.

Sincerely,

Matt Howard
Natural Resource Manager

To: Matt Howard, UDOT Natural Resources Manager
From: Craig Bown, Horrocks Engineers Environmental Specialist
Date: November 30, 2018
Subject: T&E Species, UT Sensitive Species, & Migratory Bird Evaluation

Memorandum

Reevaluation of Bangerter @ 6200 South SES; S-0154(84)14; PIN: 14415

Project Background

ORIGINAL SCOPE: UDOT approved a State Environmental Study for improvements at the intersection of SR-154 (Bangerter Highway) and 6200 South on April 17, 2017. The original document proposed to construct a grade-separate Single Point Urban Interchange (SPUI) at the existing intersection of Bangerter Highway and 6200 South. The new interchange would allow for unimpeded traffic flow along Bangerter Highway and is projected to operate at LOS D in the year 2040. The project area is along Bangerter Highway from approximate milepost 14 to 15.8, and on 6200 South between Westbrook Drive and 3840 West.

The project would also include construction of associated exit/entrance ramps, relocation of a portion of Jordan Valley Water Conservancy District (JVWCD) aqueduct, and if funding is available, construction of either NB/SB auxiliary lane(s) from 5400 South to 6200 South and/or from 6200 South to 7000 South. Due to the proposed upgrades, the existing pedestrian bridge over Bangerter Highway would be removed. A permanent solution for the bridge removal is being developed with Granite School District. The project would also provide utility and storm drainage modifications; and installation of new pavement, traffic signals, ATMS equipment, and roadway signage. This project will require right-of-way acquisition.

UPDATE SCOPE: Since completion of the original document, UDOT has modified the design of the intersection at 6200 South and Fox Hills Drive/Dixie Drive. The original project included the construction of a High-T intersection at this location. The revised design would move the signalized intersection further west approximately 250 feet to accommodate all direction of travel, safer pedestrian crossing, and eliminate the need to widen 6200 south west to Country Hills Drive. An updated study area map is attached. The updated design will require additional right-of-way. All other elements previously evaluated from the original scope would remain the same.

Evaluation Methods

The study area has been evaluated for federally listed species and their designated critical habitat protected under the Endangered Species Act (ESA) utilizing information obtained from U.S. Fish and Wildlife Service's (USFWS) Online Information, Planning, and Conservation system (IPaC). A field visit, species ecology, and aerial imagery were also assessed to determine if the study area contains suitable habitats for federally listed species, Utah sensitive species, and potential nesting habitat for migratory birds.

Analyses

Study Area Habitat

The study area is located within city boundaries of Taylorville and West Jordan which consists of commercial and residential developments. A facility owned by the Jordan Valley Water Conservancy District is present in the northwest quadrant of the study area. Additionally, a large retirement community is also being constructed in the northeast quadrant of the study area. Vegetation within the study area is consistent with commercial and residential plantings (e.g. trees, shrubs, and turf sod, etc.).

Threatened and Endangered Species

IPaC data list three species for consideration in the study area; no associated critical habitats were identified within the study area. An evaluation of these species preferred habitats and their potential to occur within the study area can be seen in **Table 1**. No suitable habitat for federally listed species was identified within the study area.

Table 1: IPaC Species of Consideration within the Study Area

Species Name	Status	Habitat ¹	Suitable Habitat within Study Area?
Mammals			
Canada lynx (Lynx canadensis)	Threatened	Prefers montane, coniferous forest that support high snowshoe hare populations.	The study area is highly developed consisting of commercial and residential plantings. There is no suitable habitat within the study area.
Fishes			
June sucker (Chasmistes liorus)	Endangered	Endemic to Utah Lake and the Provo River.	Utah Lake and Provo River are not found within the study area. There is no suitable habitat within the study area.
Flowering Plants			
Ute Ladies'-tresses (Spiranthes diluvialis)	Threatened	Found in wet meadows, along streams, in abandoned stream meanders, and near springs, seeps, and lake shores in sandy or loamy soils with mixed gravel.	No wet areas of land are present within the study area. An abandoned portion of the former Utah Lake Distribution Canal, which has been inactive for 10 years, is within the study area but does not contain hydrophytic vegetation. There is no suitable habitat within the study area.
¹ Sources: UDWR Utah Conservation Data Center (https://dwrcdc.nr.utah.gov/ucdc/) and USFWS Environmental Conservation Online System (ECOS) and Species Fact Sheets.			

Utah Sensitive Species and Migratory Birds

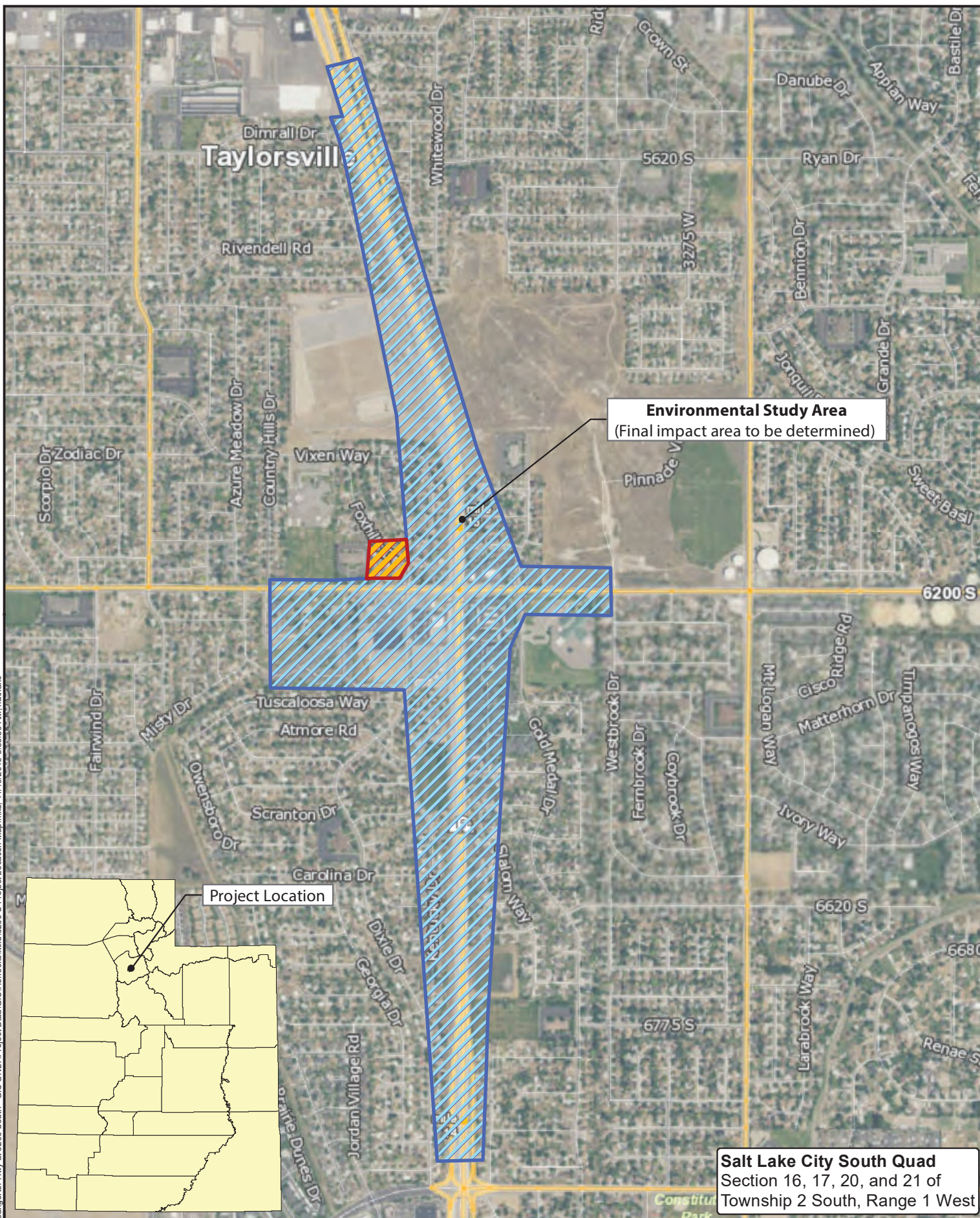
A list of Utah sensitive species likely to occur within Salt Lake County were compared against available habitat within study area. Due to the urban nature of the study area and disturbed nature of remaining undeveloped areas, there is no suitable habitat for state sensitive species in the study area.

Migratory bird habitat (trees) is present within the conventional landscaped areas of the study area.

Conclusion

There is no suitable habitat present within the study area for federally listed species or Utah sensitive species. The proposed project has potential to removal migratory bird habitat (trees) during preparations for construction. However, with implementation of proper BMPs (i.e., avoiding work during nesting season, and/or preconstruction nest surveys) the project would not result in the “take” of bird species as defined by the Migratory Bird Treaty Act.

O:\12017\PG-030-17-10 Bangerter Hwy at 6200 South - GIS ONLY\Project Data\GIS\Horrocks\Mxd\6200 S Project Location Map.mxd, 11/19/2018 8:33:59 AM, nathanc



Environmental Study Area
(Final impact area to be determined)

Project Location

Salt Lake City South Quad
Section 16, 17, 20, and 21 of
Township 2 South, Range 1 West



1 inch = 1,100 feet

0 1,100 2,200 Feet



Additional Study Area

Original Study Area

Bangerter Hwy @ 6200 South
PIN 14415 Project No. S-0154(84)14

MEMORANDUM

Date: November 29, 2018

To: Tyler Allen
UDOT Region 2 Environmental Manager

From: Rod Hess
UDOT Senior Landscape Architect

 2018.11.29
11:01:47 -07'00'

RE: ENVIRONMENTAL REVIEW FOR WATER RESOURCES AND WETLANDS, NOXIOUS WEED, AND VISUAL AESTHETICS

PROJECT PURPOSE, DESCRIPTION AND SCOPE OF WORK

The Utah Department of Transportation (UDOT) proposes the above reference state-funded project to improve traffic volume and safety at the intersection of Bangerter Highway (SR-154) and 6200 South. To accomplish the project purpose, UDOT will construct a grade separate, highway to highway interchange at the intersection. Work will include construction of highway structure, roadway widening on both Bangerter Highway and 6200 South, intersection improvements at 6200 South and Fox Hills Drive/Dixie Drive, noise wall installation, traffic signal and lighting installation, improvements to signing and striping.

The above referenced state-funded project has been reviewed, within the proposed project limits for the following categories of resources identified in the UDOT State Environmental Study. Environmental analysis has been completed by Horrocks Engineers, a consultant hired by UDOT (see attached). Based on a review of their resources analysis and findings, UDOT provides the following recommendations for the proposed project:

Water Resources and Wetlands:

Based on initial analysis of project activities and site visit completed by Horrocks, this proposed UDOT project will not impact Waters of the United States (WOTUS), including wetlands. A portion of the Utah Lake Distribution Canal, which has been inactive for 10 years, crosses through the study area and is owned by West Jordan City. The City has plans to fill in the abandoned channel to construct to pedestrian trail.

Mitigation Commitments:

1. None

Utah Pollutant Discharge Elimination System (UPDES):

This project will disturb more than one (1) acre of earth and therefore is required to comply with the Utah Pollutant Discharge Elimination System (UPDES) Utah Construction General Permit (UCGP), by completing a Stormwater Pollution Prevention Plan (SWPPP) and submitting a Notice of Intent (NOI) prior to beginning earth-disturbing activities.

Mitigation Commitments:

1. Comply with UCGP, by preparing a SWPPP during design and advertisement; provide SWPPP to the project awarded contractor prior to Notice to Proceed. (UDOT Responsible)
2. Comply with UCGP, by finalizing the SWPPP prior to beginning earth disturbing activities; implementing and maintaining the project SWPPP throughout project construction. (Awarded Contractor Responsible)

Federal Emergency Management Agency (FEMA) Floodplains:

No FEMA Special Flood Hazard Areas are currently mapped within the project scope of work.

Mitigation Commitments:

None

Noxious Weeds:

Noxious weed species, as defined by the Utah Noxious Weed Act (Utah Administrative Code, Rule R68-9), have not been identified growing within the project limits. To reduce the introduction and spread of noxious weeds, the project is required to properly clean earthmoving construction equipment before mobilizing onto the project.

Mitigation Commitments:

1. Include UDOT Special Provision Section 02924S NOXIOUS WEED CONTROL in the contract documents to require that earthmoving construction equipment is to be properly cleaned before mobilizing onto the project site and to treat any noxious weeds within the project limits and schedule. (UDOT Responsible)
2. Comply with UDOT Special Provision Section 02924S NOXIOUS WEED CONTROL requirements by properly cleaning all earthmoving construction equipment before mobilizing onto the project site, treating any existing noxious weeds before earth disturbing activities and avoiding unnecessary earth disturbances. (Awarded Contractor Responsible)

Visual Aesthetics:

This proposed project has limited disturbance and will not have significant visual impacts to the surrounding areas.

Mitigation Commitments:

1. **Visual:** Reclaim all disturbed areas per UDOT standard specifications. (Awarded Contractor Responsible)

Prepared

By: Nathan Clarke, Environmental Specialist

Date: November 19, 2018

Memorandum

Subject: Water Resources Reevaluation

6200 South Bangerter Interchange, Project No. S-0145(84)14 PIN 14415.

Introduction

In April 2017, the Utah Department of Transportation (UDOT), requested that Horrocks Engineers conduct an investigation of waters of the U.S. (WoUS), noxious weeds, floodplains, and storm water for a proposed roadway improvement project at the 6200 South Bangerter Interchange in Taylorsville and West Jordan, Utah. Based upon design changes made in 2018, UDOT requested a reevaluation of additional areas for the above mentioned resources.

Purpose and Need

The existing at-grade intersection of SR-154 (Bangerter Highway) and 6200 South in Taylorsville and West Jordan, Utah currently experiences high amounts of congestion. Existing operations are a Level of Service (LOS) E, with an average AM delay of 59.7 seconds and an average PM delay of 69.6 seconds.

Traffic modeling indicates that by 2040 this intersection would operate at LOS F, with an AM average delay of 84.8 seconds, and PM average delay greater than 120 seconds. Additionally, this intersection has a high number of documented front-to-rear crashes due to sudden speed or lane changes associated with traffic congestion. The purpose of the project is to alleviate congestion and improve the operational safety of the Bangerter Highway and 6200 South intersection.

Original Evaluation

ORIGINAL SCOPE: UDOT approved a State Environmental Study for improvements at the intersection of SR-154 (Bangerter Highway) and 6200 South on April 17, 2017. The original document proposed to construct a grade-separate Single Point Urban Interchange (SPUI) at the existing intersection of Bangerter Highway and 6200 South. The new interchange would allow for unimpeded traffic flow along Bangerter Highway and is projected to operate at LOS D in the year 2040. The project area is along Bangerter Highway from approximate milepost 14 to 15.8, and on 6200 South between Westbrook Drive and 3840 West (see maps in appendix).

The project would also include construction of associated exit/entrance ramps, relocation of a portion of Jordan Valley Water Conservancy District (JVWCD) aqueduct, and if funding is available, construction of either NB/SB auxiliary lane(s) from 5400 South to 6200 South and/or from 6200 South to 7000 South. Due to the proposed upgrades, the existing pedestrian bridge over Bangerter Highway would be removed. A permanent solution for the bridge removal is being developed with Granite School District. The project would also provide utility and storm drainage modifications; and

installation of new pavement, traffic signals, ATMS equipment, and roadway signage. This project will require right-of-way acquisition.

In January of 2018, a memorandum was sent to UDOT from Horrocks Engineers summarizing the findings of the inventory work for waters of the U.S. (WoUS), noxious weeds, floodplains, and storm water that was completed for the project. Included in that memo were the following conclusions:

- No WoUS, including wetlands, will be impacted by the project, thereby eliminating the need to obtain a Department of the Army permit or a State Stream Alteration permit.
- No noxious weeds were observed during the site visit. 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.
- The project is not within the 100-year floodplain, therefore no FEMA coordination is required.
- Because the project will disturb more than one acre of ground, a Construction Storm Water (UPDES) permit will need to be obtained from the Utah Division of Water Quality.

Reevaluation

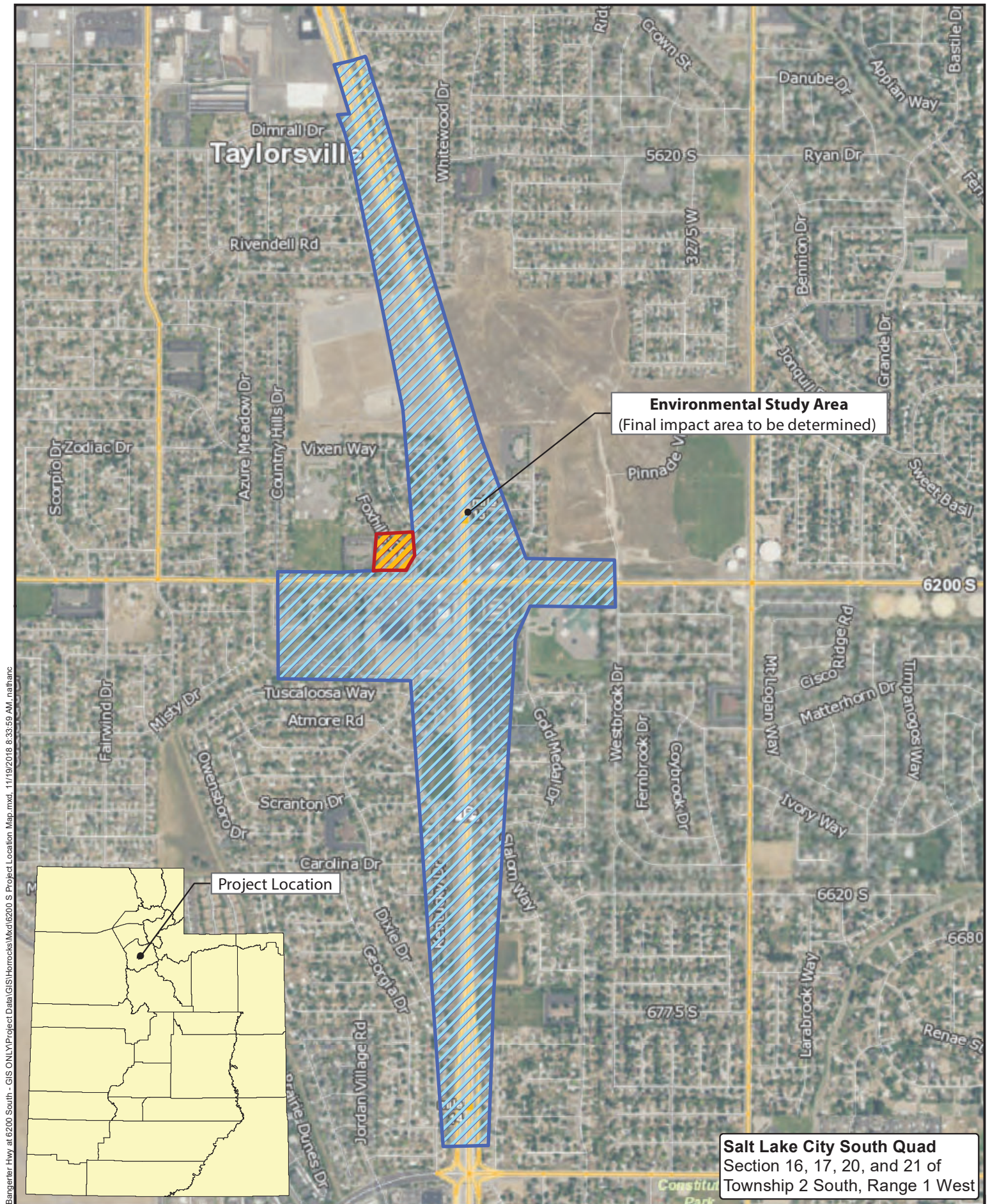
UPDATED SCOPE: Since completion of the original document, UDOT has modified the design of the intersection at 6200 South and Fox Hills Drive/Dixie Drive. The original project included the construction of a High-T intersection at this location. The revised design would move the signalized intersection further west (approximately 250 feet) to accommodate all direction of travel, provide a safer pedestrian crossing, and eliminate the need to widen 6200 South west to Country Hills Drive. This updated design will require additional right-of-way. All other elements previously evaluated from the original scope would remain the same.

Conclusion

The additional study area has been evaluated, and it has been determined that the conclusions regarding impacts to WoUS, noxious weeds, floodplains, and storm water has not changed from the original document given to UDOT in January of 2018.



Appendix A: Maps



Environmental Study Area
(Final impact area to be determined)

Project Location

Salt Lake City South Quad
Section 16, 17, 20, and 21 of
Township 2 South, Range 1 West

Bangerter Hwy @ 6200 South
PIN 14415 Project No. S-0154(84)14



1 inch = 1,100 feet
0 1,100 2,200 Feet



Additional Study Area

Original Study Area

To: Ryan Halverson
UDOT Region 2

From: Nathan Clarke

Date: December 13, 2017

Memorandum

Subject: 6200 South Bangerter Interchange, Project No. S-0145(84)14 PIN 14415.
Water Resources

Introduction

The Utah Department of Transportation (UDOT) has initiated a project to improve SR-154 from approximately MP 13.9 to MP 15.8 in Taylorsville and West Jordan, Salt Lake County (see attached Project Location Map). The proposed action would grade-separate the existing intersection of Bangerter Highway and 6200 South. This project includes construction of a grade-separated interchange (Bangerter Highway over 6200 S.), exit/entrance ramps from Bangerter Highway to 6200 South, and NB/SB auxiliary lanes (5400 S. - 6200 S. and 6200 S. - 7000 S.). The project would also include relocation and construction of the Jordan Valley Aqueduct and associated underground reservoir facilities, the relocation and construction of a pedestrian structure over Bangerter Highway, utility and storm drainage modifications, and installation of new pavement, traffic signals, ATMS equipment, and roadway signage.

This memo summarizes the findings from the work done by Horrocks Engineers and addresses potential project impacts to waters of the U.S (WoUS) and other water resources.

Methodology

Nathan Clarke of Horrocks Engineers conducted the inventory on November 8, 2017. Prior to visiting the project location, National Wetlands Inventory (NWI) maps and aerial imagery were studied to help identify potential waters and wetlands within the study area. The study area was visited and possible WoUS were identified based on vegetation type and existing hydrology (see attached maps). A wetland delineation was not conducted, no sample pits were dug to identify wetland boundaries, nor was a jurisdictional determination from the U.S. Army Corps of Engineers (USACE) obtained. While in the field, observations for noxious weeds were also completed.

Results

Wetlands and other WoUS

No wetlands or other WoUS were identified within the study area. A portion of the former Utah Lake Distribution Canal, which has been inactive for 10 years, crosses through the study area and is now owned by West Jordan City. The abandoned canal channel is open as it enters the SW corner of the study area, south of 6200 South. Remaining portions of the abandoned canal are piped within the remainder of the study area. There is no hydrophytic vegetation associated with the channel. West Jordan City has plans to fill in the abandoned channel and convert it to a trail.

Noxious Weeds

No noxious weeds were observed during the site visit. 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.

Floodplains

It has been determined that the project is not located within the FEMA 100-year floodplain.

Storm Water

This project will disturb more than one acre of ground surface, thus Utah Pollutant Discharge Elimination System (UPDES) requirements need to be followed.

Conclusions

No wetlands or other WoUS will be impacted by the project, thereby eliminating the need to obtain a Department of the Army permit or a State Stream Alteration permit. The project is not within the 100-year floodplain, therefore no FEMA coordination is required. Because the project will disturb more than one acre of ground, a Construction Storm Water (UPDES) permit will need to be obtained from the Utah Division of Water Quality.

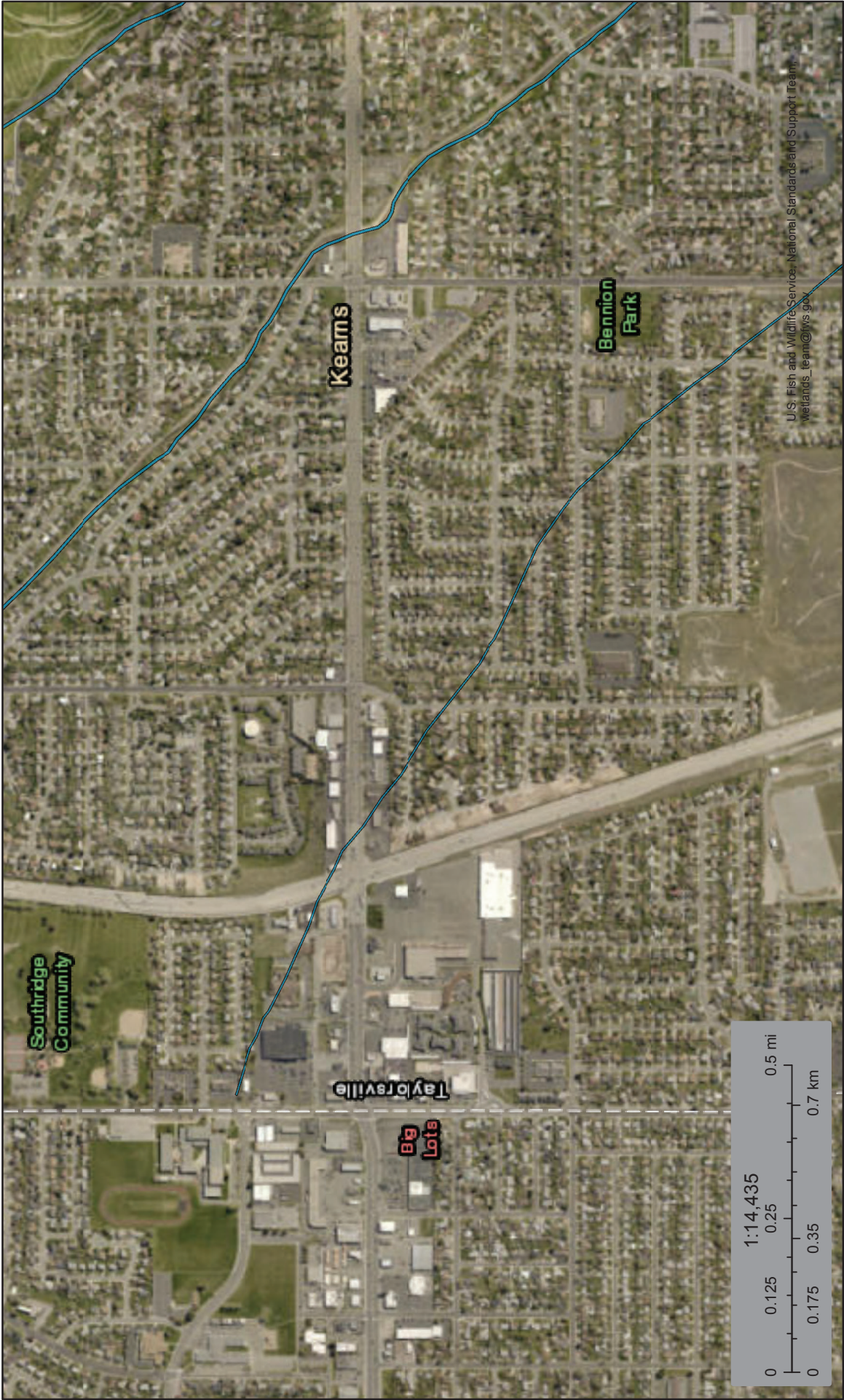
The pictures below show examples of what was observed in the area.



Figure 1- Former Utah Lake Distribution Canal channel looking southwest



Figure 2- Former Utah Lake Distribution Canal channel looking northeast



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

October 30, 2017

Wetlands

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



October 30, 2017

Wetlands

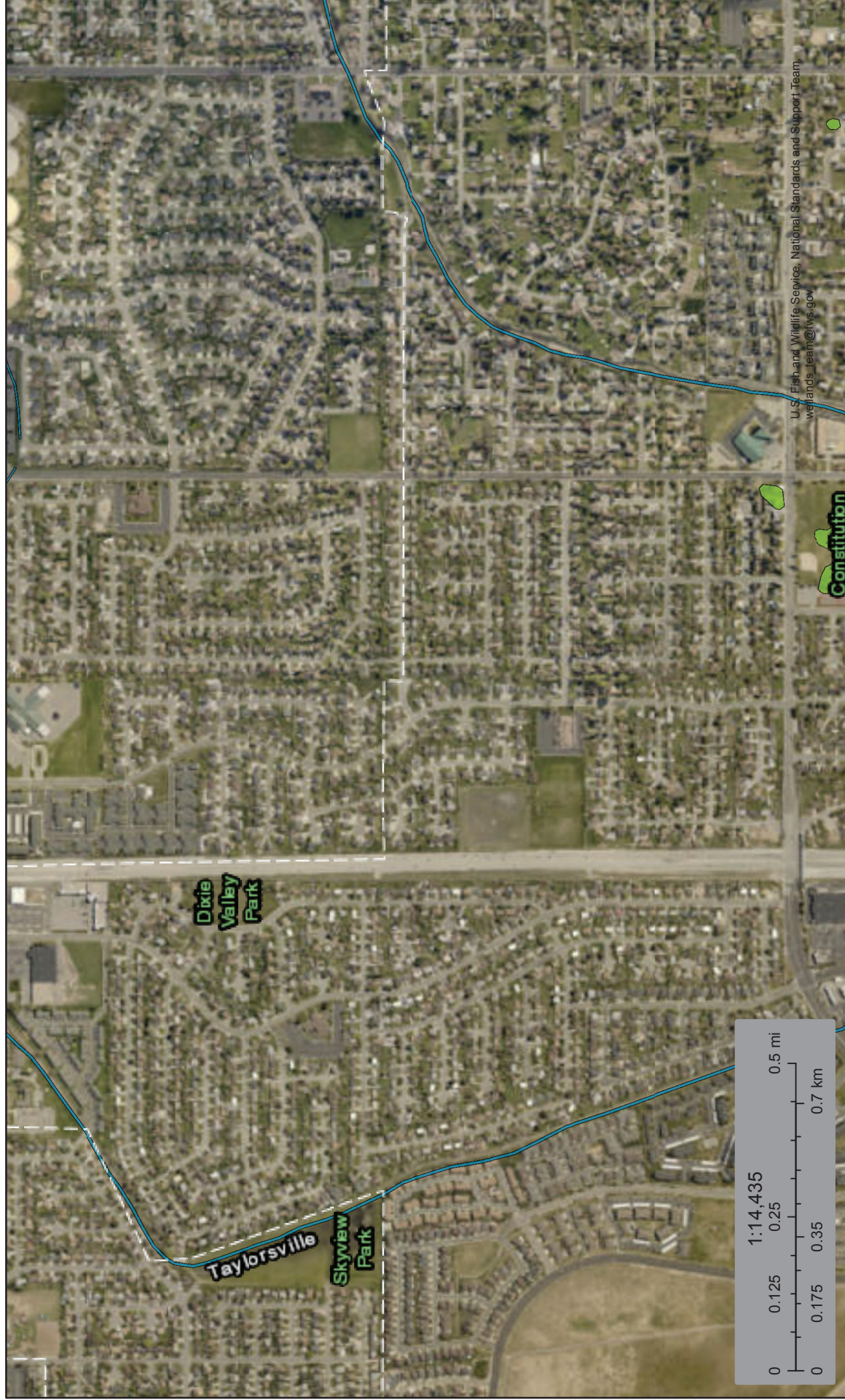
- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond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



U.S. Fish and Wildlife Service

National Wetlands Inventory

6200 South 3

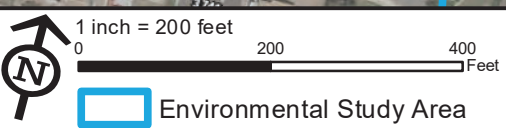
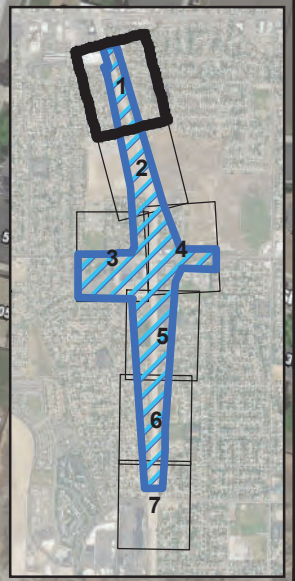
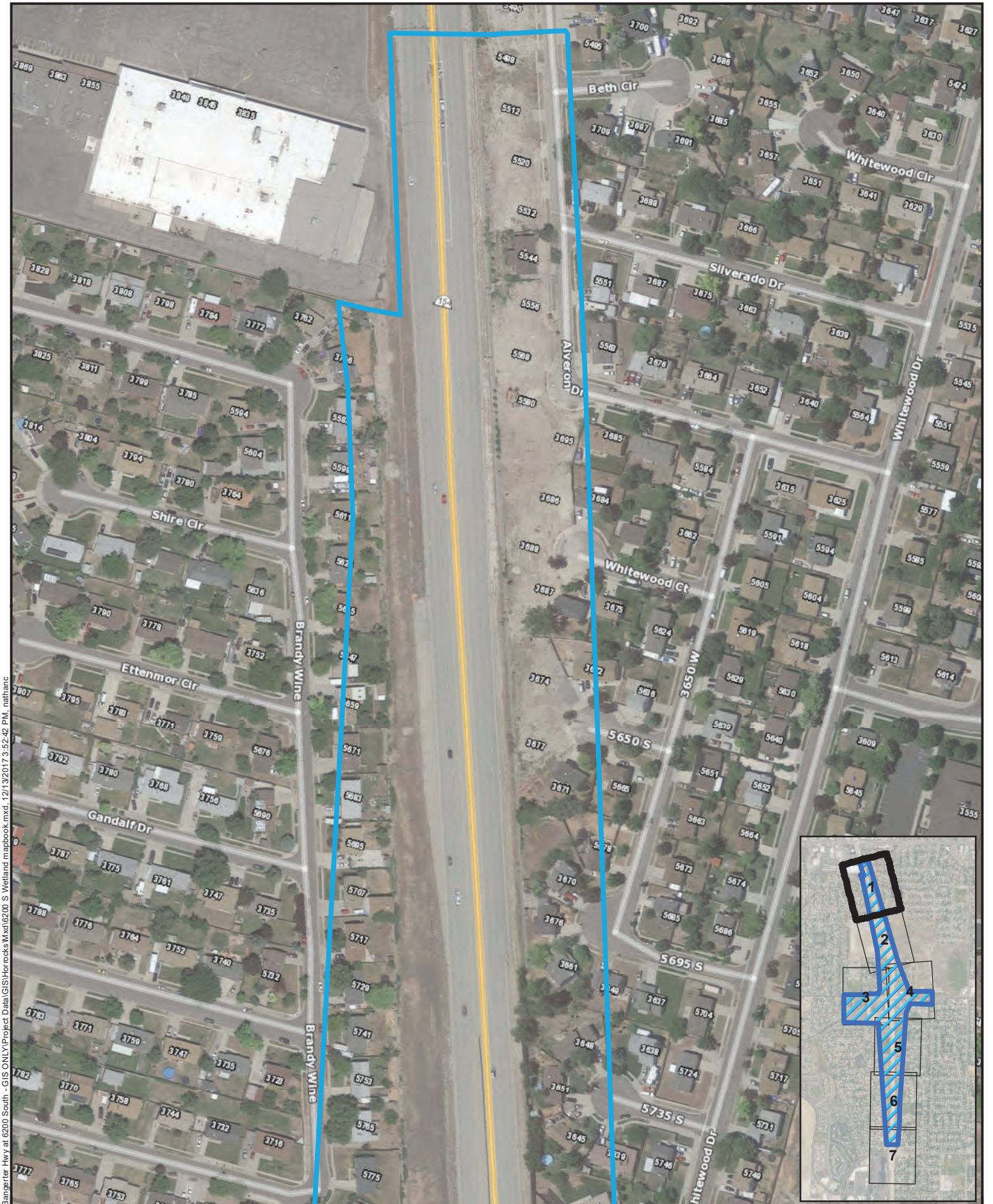


October 30, 2017

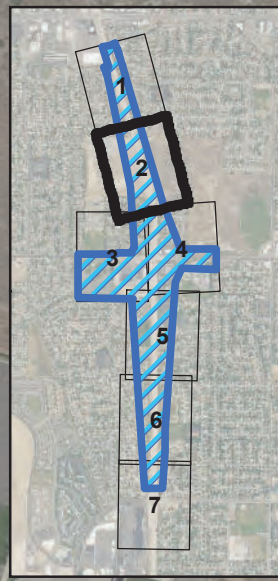
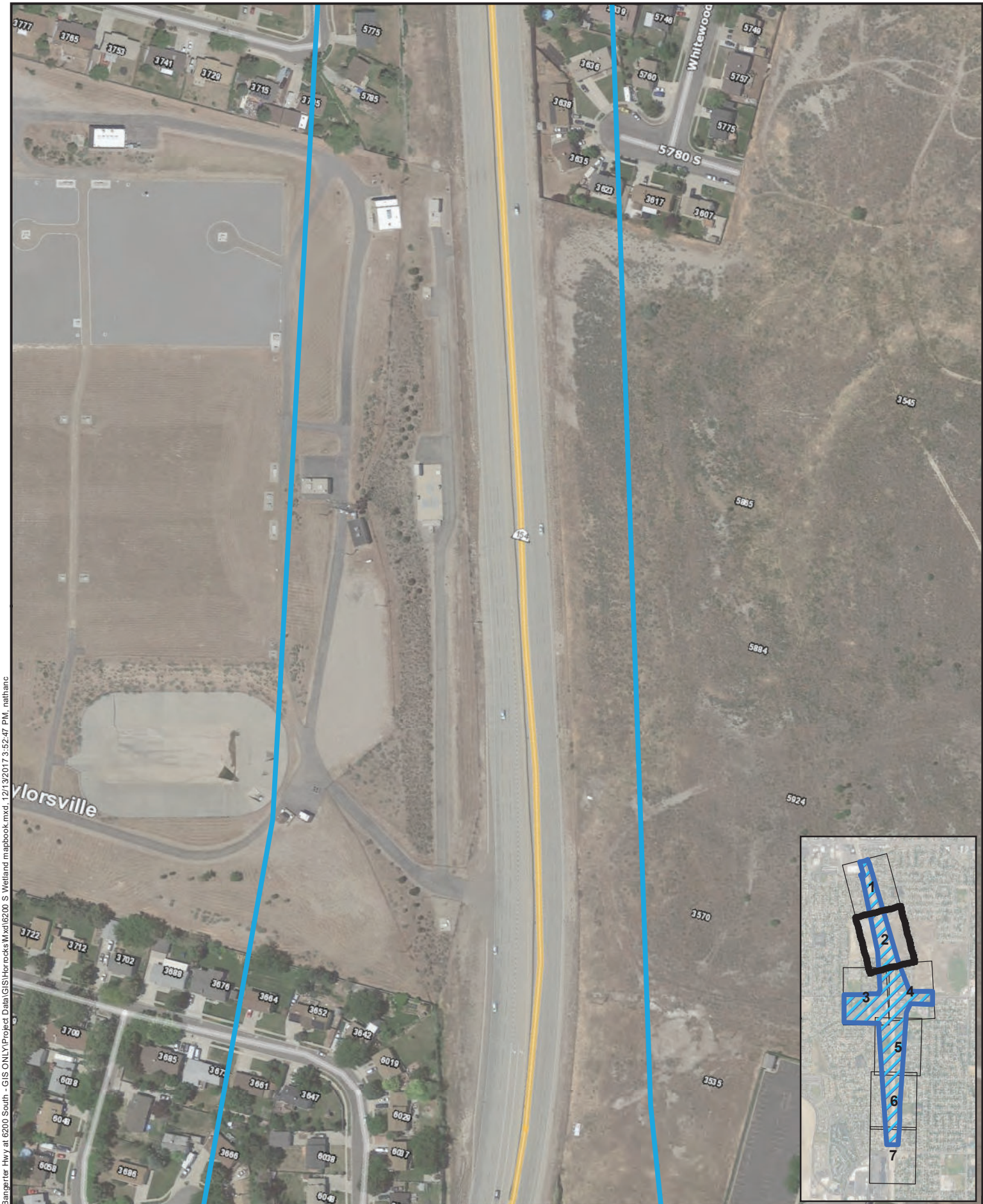
Wetlands

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

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

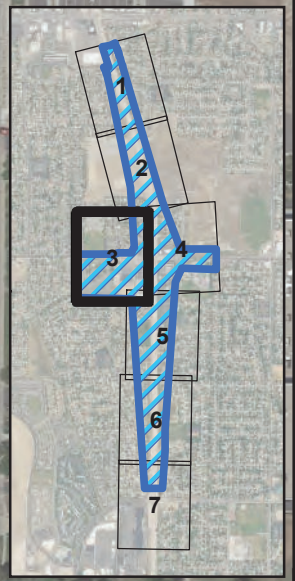
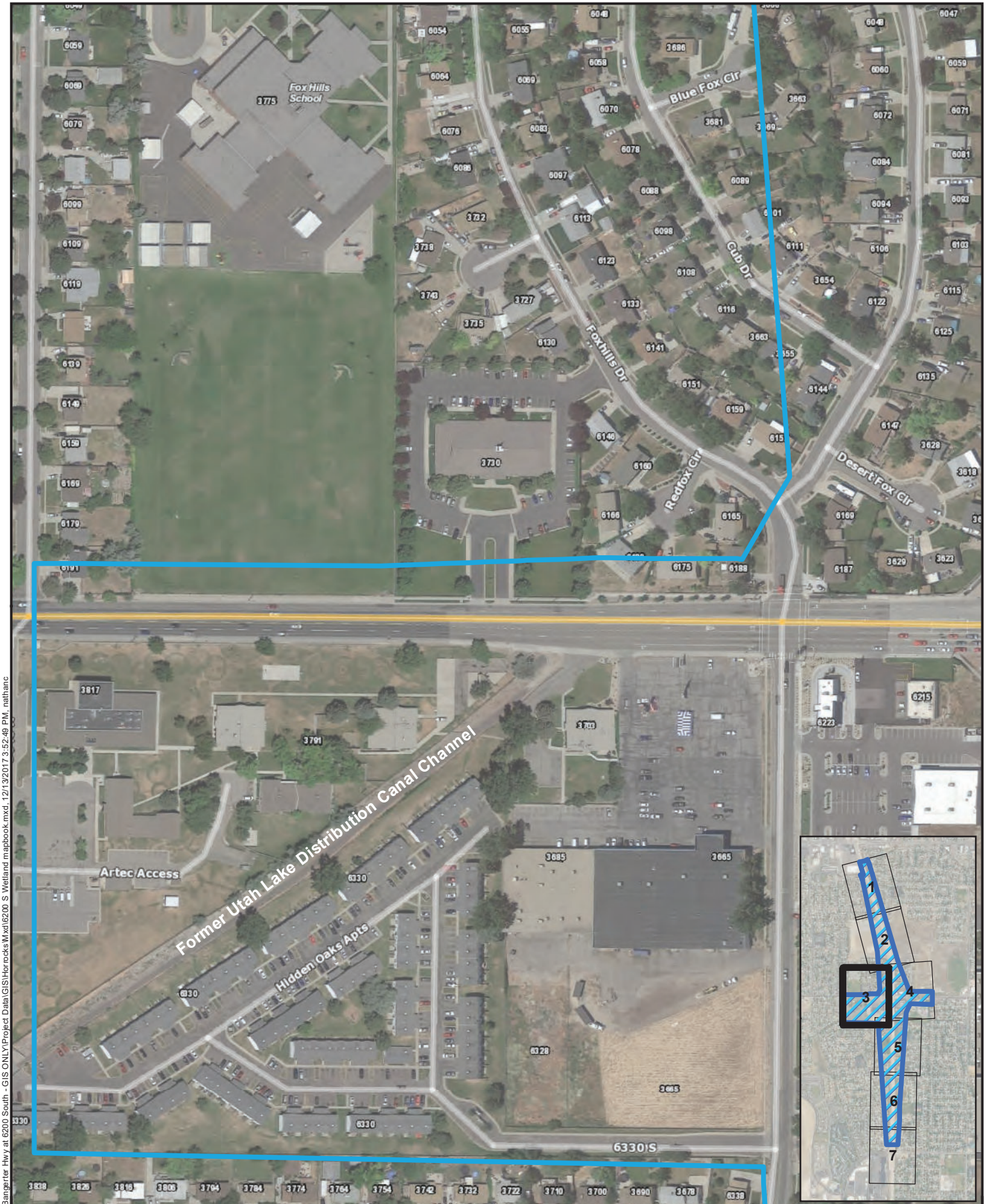


01/2017PG-030-1710 Bangerter Hwy at 6200 South - GIS ONLY Project Data\GIS\Horrocks Mapbook.mxd, 12/13/2017 3:52:42 PM, nathanc



Bangerter Hwy @ 6200 South Wetland Inventory Mapbook
PIN 14415 Project No. S-0154(84)14
Map 2 of 7

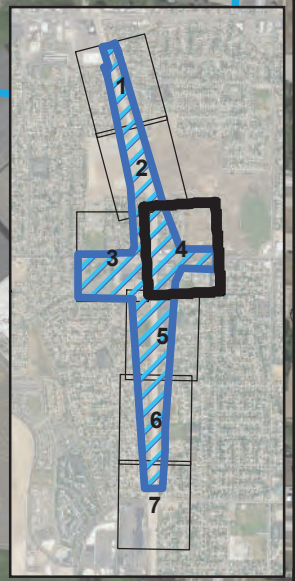
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1 inch = 200 feet
0 200 400 Feet

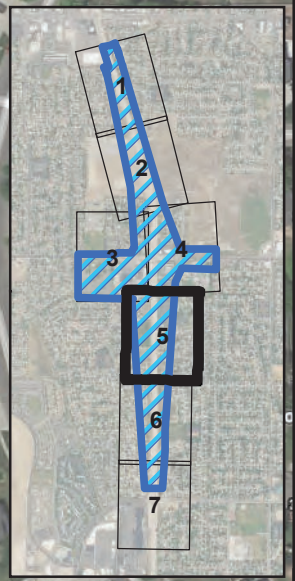
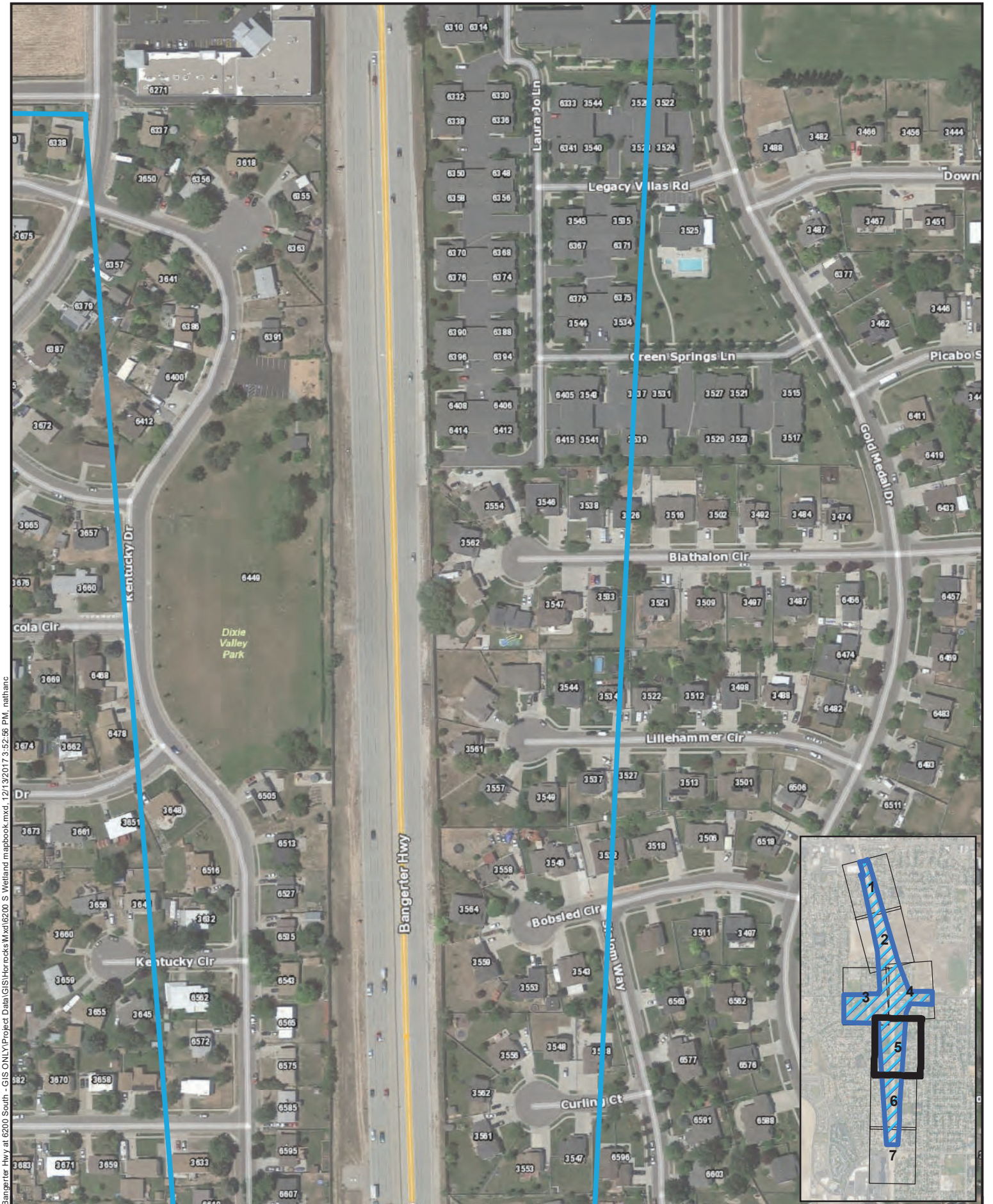
 Environmental Study Area

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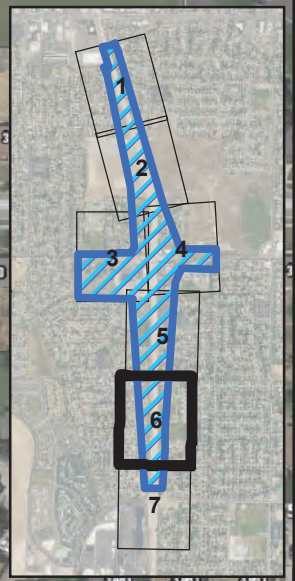
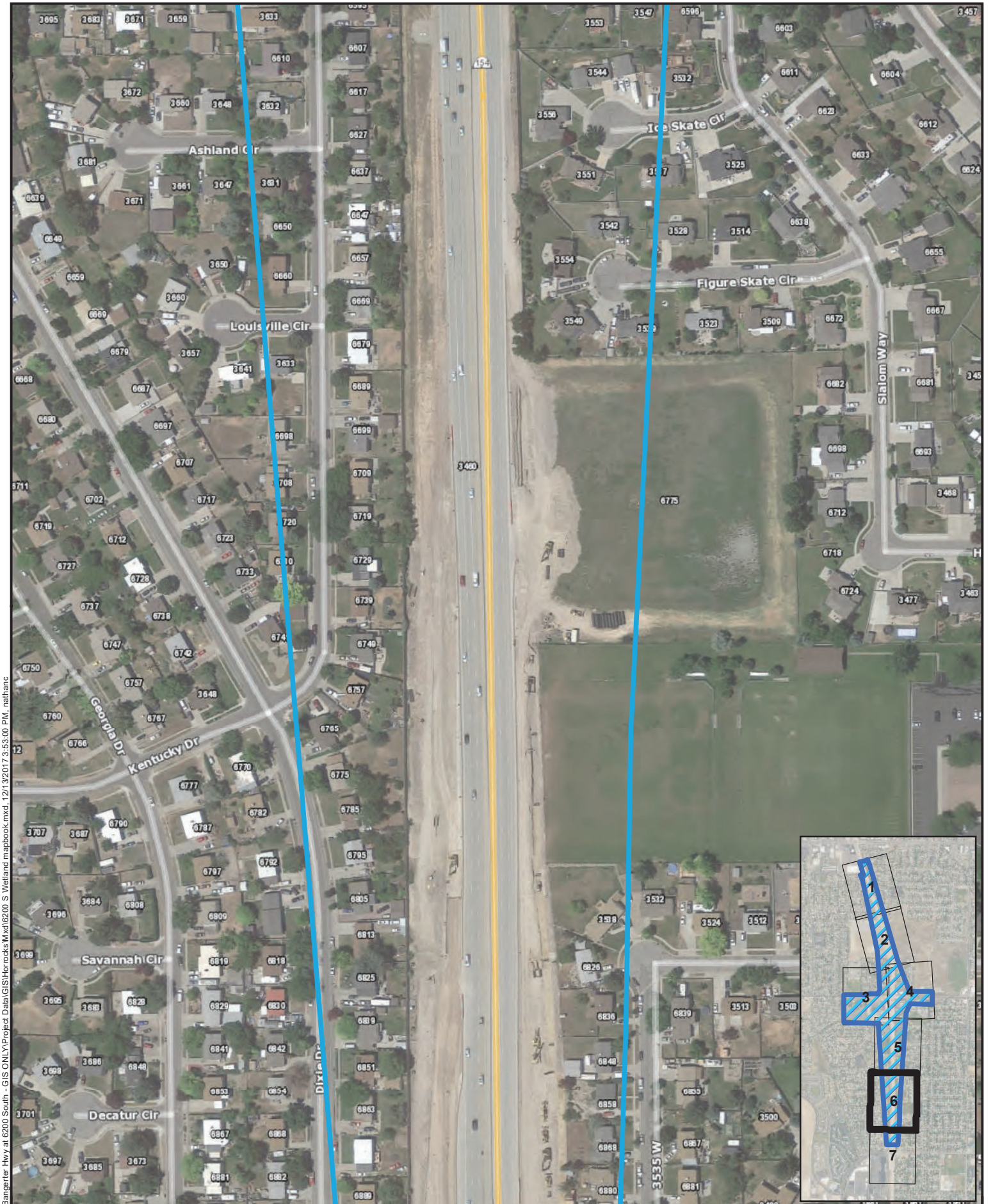


 Environmental Study Area

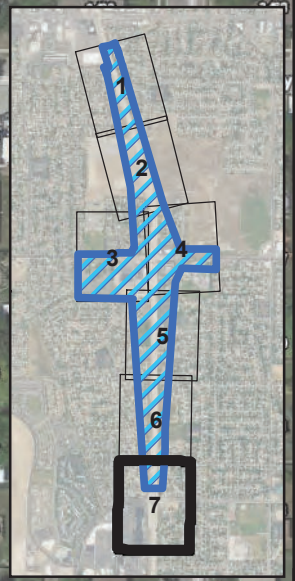
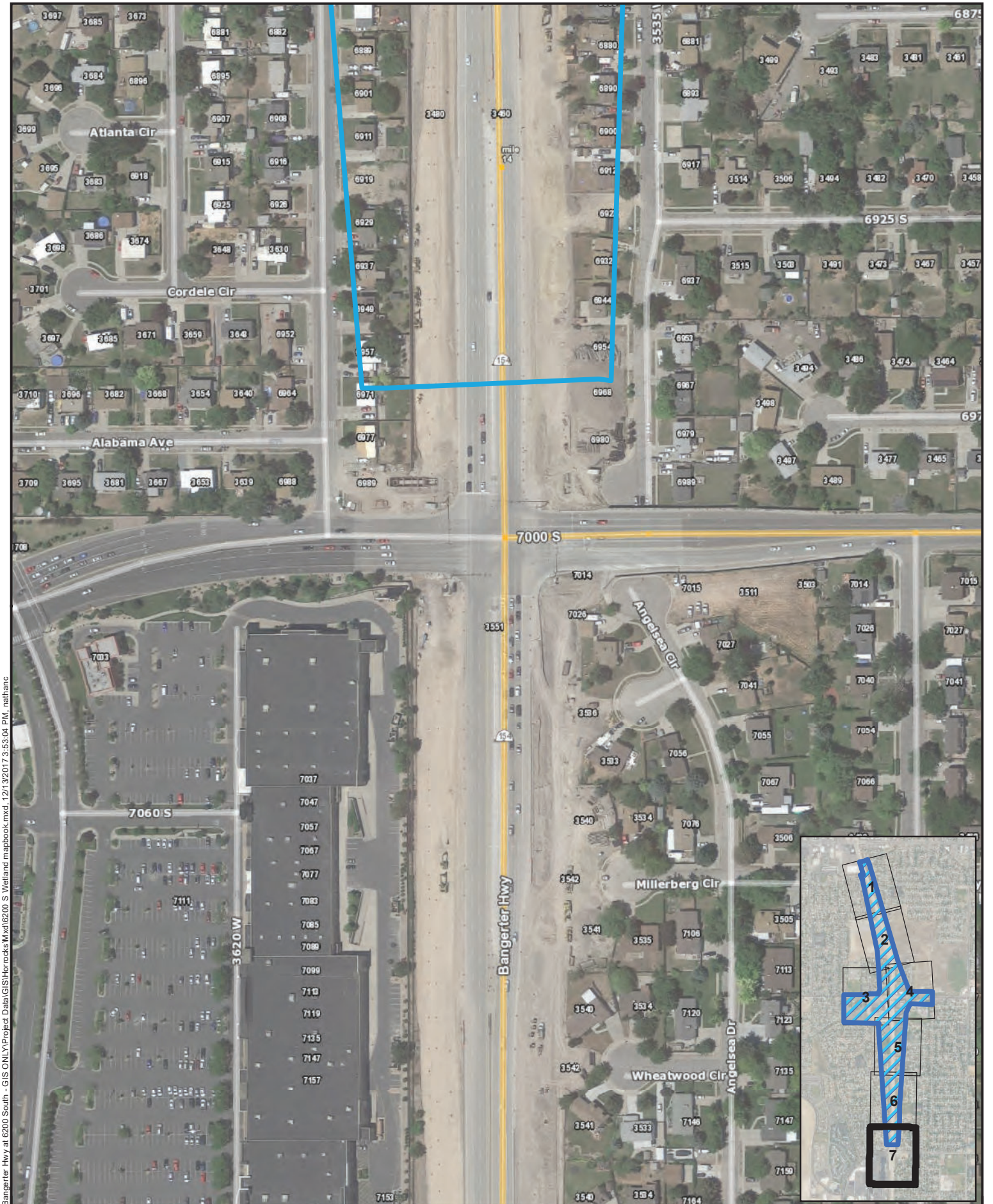
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1 inch = 200 feet
0 200 400 Feet

 Environmental Study Area

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D. Noise Study Addendum

Noise Analysis - Addendum
Project Name: Bangerter Hwy @ 6200 South
PIN: 14415 Project No.: S-0154(84)14

Since completion of the original document, UDOT has modified the design of the intersection at 6200 South and Fox Hills Drive/Dixie Drive. The original project included the construction of a High-T intersection at this location. The revised design would move the signalized intersection further west approximately 250 feet to accommodate all direction of travel, safer pedestrian crossing, and eliminate the need to widen 6200 south west to Country Hills Drive. This updated design will require additional right-of-way. All other elements previously evaluated from the original scope would remain the same.

As a result of this modification, a noise analysis was conducted to reanalyze traffic noise impacts and potential noise wall construction according to the new intersection design.

Traffic Noise Impacts

Proposed Action traffic noise impacts under the new intersection configuration would be essentially the same as the original design. The greatest contributor to noise in this area is traffic from Bangerter Highway and 6200 South. The minor shift in intersection location at Dixie Drive would not cause new noise impacts.

6200 S NW Wall (Segment 1)

This wall configuration extends from approximately 6000 South to 6200 South along Bangerter Highway mainline and would then extend along the north side of 6200 South to the original Dixie Drive intersection. This wall is approximately 1,411 feet in length (see Figure 1). As summarized in Table 1, walls ranging in height from 10 to 16 feet were evaluated (see Figure 2 for detailed wall analyses).

Table 1: Summary of 6200 S NW Wall (Segment 1)

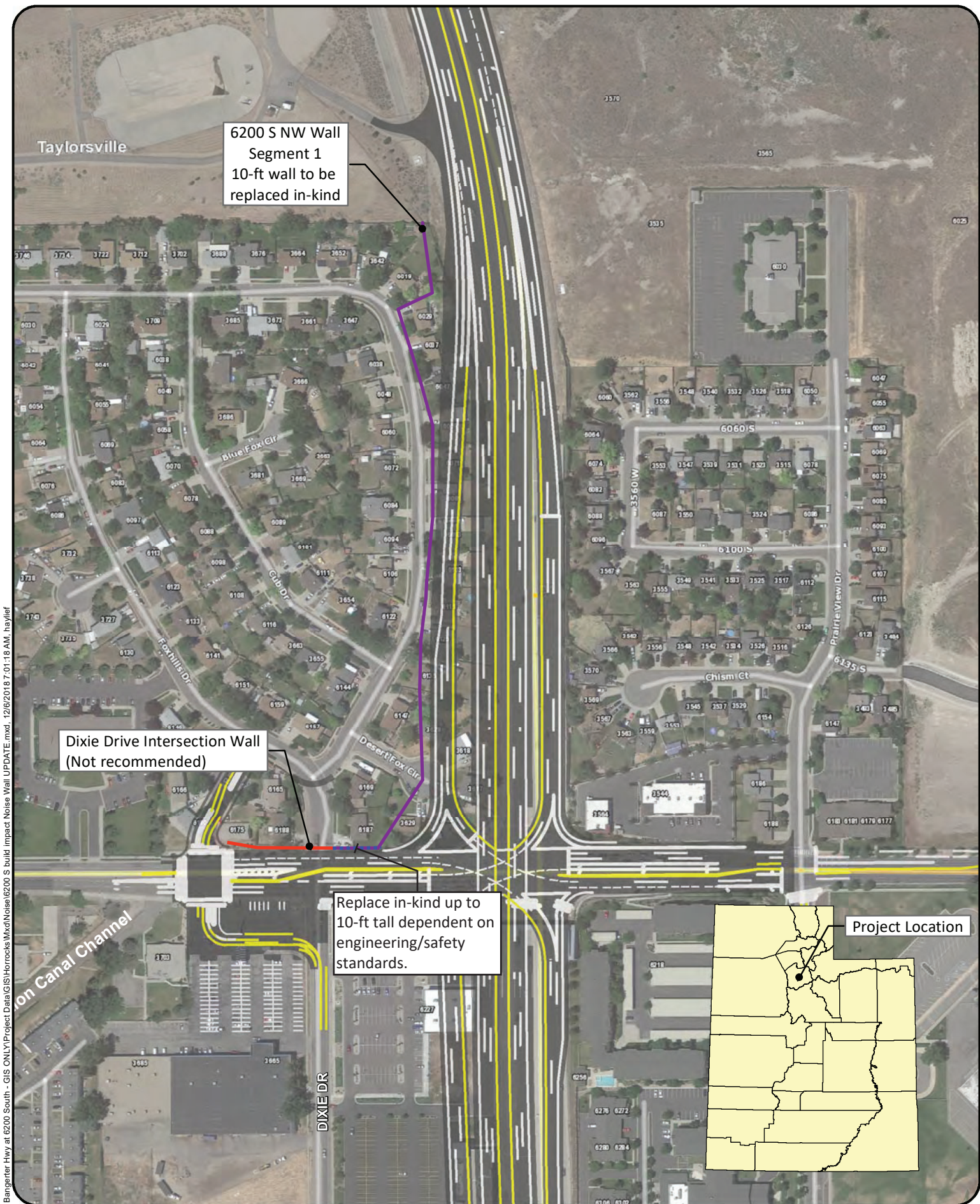
Barrier Height	Feasibility		Reasonable					Is Barrier Feasible & Reasonable?
	% front-row with 5 dBA reduction	Acoustically feasible? ¹	% front-row with 7 dBA reduction	Noise Abatement Design Goal? ²	Anticipated Cost	Allowable Cost	Cost Effective? ³	
10	40.0	No	N/A	N/A	N/A	N/A	N/A	No
12	70.0	Yes	10.0	No	N/A	N/A	N/A	No
14	90.0	Yes	70.0	Yes	\$930,355	\$360,000	No	No
16	90.0	Yes	80.0	Yes	\$986,795	\$390,000	No	No

¹ 5 dBA reduction for at least 50% of front-row receptors

² 7 dBA for at least 35% of front-row receptors

³ Anticipated cost is less than allowable cost.

None of the wall heights evaluated for 6200 S NW Wall (Segment 1) were found to be both feasible and reasonable. This study recommends replacing the existing 10 foot noise wall “in-kind”, consistent with the UDOT Noise Abatement Policy.



Build Noise Walls

- Not Feasible and Reasonable
- Replace in-kind



1 inch = 250 feet

0 250 500 Feet

Bangerter Hwy @ 6200 South
Noise Walls

Figure 1

Figure 2

6200 S NW Wall (Segment 1)

1411 ft
Total Wall Length:
\$20 Wall Cost per sq ft:
\$25 (\$25/ft for snow storage)
10
Cost of items critical to safety:
of First Row Receivers:

Name	# of DU	Relocation	1st Row	# of 1st Row	10-ft Wall	Design Goal	Benefitted	1st Row Design Goal	1st Row dBA Reduction	12-ft Wall	Design Goal	Benefitted	1st Row Design Goal	1st Row dBA Reduction	14-ft Wall	Design Goal	Benefitted	1st Row Design Goal	1st Row dBA Reduction	16-ft Wall	Design Goal	Benefitted	1st Row Design Goal	1st Row dBA Reduction
132 B"	1			0	2.3	No	No	No	No	2.8	No	No	No	No	3.2	No	No	No	No	3.7	No	No	No	No
133 B"	1			0	4.2	No	No	No	No	4.9	No	No	No	No	5.3	No	No	No	No	5.7	No	No	No	No
134 B"	1		Yes	1	9.9	Yes	Yes	Yes	Yes	10.9	Yes	Yes	Yes	Yes	11.9	Yes	Yes	Yes	Yes	12.6	Yes	Yes	Yes	Yes
136 B"	1			0	2.3	No	No	No	No	2.9	No	No	No	No	3.5	No	No	No	No	4.2	No	No	No	No
137 B"	1			0	3.5	No	No	No	No	4.2	No	No	No	No	5	No	No	No	No	5.7	No	No	No	No
138 B"	1			0	2.1	No	No	No	No	2.7	No	No	No	No	3.3	No	No	No	No	4.1	No	No	No	No
139 B"	1			0	5.8	No	No	No	No	7	Yes	Yes	Yes	Yes	8.1	Yes	Yes	Yes	Yes	9.3	Yes	Yes	Yes	No
140 B"	1		Yes	1	5.6	No	Yes	No	Yes	6.8	No	Yes	No	Yes	8.2	Yes	Yes	Yes	Yes	9.6	Yes	Yes	Yes	Yes
141 B"	1			0	2.5	No	No	No	No	3.4	No	No	No	No	4.2	No	No	No	No	5.1	No	No	No	No
142 B"	1		Yes	1	5.3	No	Yes	No	Yes	6.9	No	Yes	No	Yes	8.4	Yes	Yes	Yes	Yes	9.6	Yes	Yes	Yes	Yes
143 B"	1			0	1.9	No	No	No	No	2.9	No	No	No	No	3.7	No	No	No	No	4.7	No	No	No	No
144 B"	1		Yes	1	5.1	No	Yes	No	Yes	6.9	No	Yes	No	Yes	8.4	Yes	Yes	Yes	Yes	9.8	Yes	Yes	Yes	Yes
145 B"	1			0	0.7	No	No	No	No	1.2	No	No	No	No	2	No	No	No	No	2.9	No	No	No	No
146 B"	1		Yes	1	4.2	No	No	No	Yes	6.2	No	Yes	No	Yes	7.9	Yes	Yes	Yes	Yes	9.1	Yes	Yes	Yes	Yes
147 B"	1			0	0.5	No	No	No	No	0.9	No	No	No	No	1.5	No	No	No	No	2.5	No	No	No	No
148 B"	1		Yes	1	4	No	No	No	No	6	No	Yes	No	Yes	7.6	Yes	Yes	Yes	Yes	8.8	Yes	Yes	Yes	Yes
149 B"	1			0	0.5	No	No	No	No	1	No	No	No	No	1.6	No	No	No	No	2.7	No	No	No	No
150 B"	1		Yes	1	2.9	No	No	No	No	4.5	No	No	No	No	6.4	No	No	No	No	7.7	Yes	Yes	Yes	Yes
151 B"	1			0	0.7	No	No	No	No	1.1	No	No	No	No	1.8	No	No	No	No	2.8	No	No	No	No
152 B"	1		Yes	1	2.1	No	No	No	No	4.2	No	No	No	No	5.7	No	No	No	No	6.4	No	No	No	No
153 B"	1			0	0.7	No	No	No	No	1.3	No	No	No	No	2	No	No	No	No	3.1	No	No	No	No
154 B"	1		Yes	1	3.7	No	No	No	No	6.2	No	Yes	No	Yes	7.3	Yes	Yes	Yes	Yes	8.8	Yes	Yes	Yes	Yes
155 B"	1		Yes	1	1.8	No	No	No	No	3.1	No	No	No	No	5	No	No	No	No	6.3	No	No	No	No
156 B"	1			0	0.2	No	No	No	No	0.6	No	No	No	No	1.2	No	No	No	No	2.7	No	No	No	No
157 B"	1			0	0	No	No	No	No	0.2	No	No	No	No	0.6	No	No	No	No	1.1	No	No	No	No
158 B"	1			0	0.1	No	No	No	No	0.4	No	No	No	No	0.8	No	No	No	No	1.9	No	No	No	No
159 B"	1			0	0.4	No	No	No	No	0.5	No	No	No	No	0.6	No	No	No	No	1.3	No	No	No	No
390 B"	2			0	1.3	No	No	No	No	1.5	No	No	No	No	1.8	No	No	No	No	2.1	No	No	No	No
391 B"	2			0	0.7	No	No	No	No	0.9	No	No	No	No	1	No	No	No	No	1.2	No	No	No	No
392 B"	1			0	1.6	No	No	No	No	1.9	No	No	No	No	2.4	No	No	No	No	2.8	No	No	No	No
393 B"	1			0	1.1	No	No	No	No	1.3	No	No	No	No	1.6	No	No	No	No	1.9	No	No	No	No
394 B"	2			0	1	No	No	No	No	1.3	No	No	No	No	1.7	No	No	No	No	2.1	No	No	No	No
395 B"	1			0	0.7	No	No	No	No	0.9	No	No	No	No	1.2	No	No	No	No	1.6	No	No	No	No
396 B"	1			0	0.3	No	No	No	No	0.6	No	No	No	No	1	No	No	No	No	1.4	No	No	No	No
551B"	1			0	0	No	No	No	No	0.1	No	No	No	No	0.2	No	No	No	No	0.6	No	No	No	No

Feasibility Factors:

of First Row 5 dBA Reduction:
% of First Row 5 dBA Reduction:

Acoustic Feasibility 5 dBA reduction for 50% of front-row:

Reasonableness Factors:

of First-Row Design Goal:
% of First-Row Design Goal:

Noise Abatement Design Goal 7 dBA reduction for 35% of front-row:

of Benefitted:

Cost of Noise Wall (Length x Height x \$20/sq ft):

Cost of snow storage:

Anticipated Cost of Noise Abatement:

Allowable Cost (\$30,000 per benefitted receptor):

Cost Effective (Anticipated Cost < Allowable Cost):

Feasible and Reasonable:

4	7	9	9
40.0%	70.0%	90.0%	90.0%
No	Yes	Yes	Yes
1	1	7	8
10.0%	10.0%	70.0%	80.0%
No	No	Yes	Yes
5	8	12	13
\$282,200.00	\$338,640.00	\$395,080.00	\$451,520.00
\$35,275.00	\$35,275.00	\$35,275.00	\$35,275.00
\$317,475.00	\$373,915.00	\$430,355.00	\$486,795.00
\$150,000.00	\$240,000.00	\$360,000.00	\$390,000.00
No	No	No	No
No	No	No	No

Noise Analysis - Addendum
Project Name: Bangerter Hwy @ 6200 South
PIN: 14415 Project No.: S-0154(84)14

Dixie Drive Intersection Wall

This wall is located on the north side of 6200 South and west of Bangerter Highway, between the new Dixie Drive intersection and the original Dixie Drive intersection (see Figure 1). The wall is approximately 216 feet in length. As summarized in Table 2, walls ranging in height from 10 to 16 feet were evaluated (see Figure 3 for detailed wall analyses).

Table 2: Summary of Dixie Drive Intersection Wall

Barrier Height	Feasibility		Reasonable					Is Barrier Feasible & Reasonable?
	% front-row with 5 dBA reduction	Acoustically feasible? ¹	% front-row with 7 dBA reduction	Noise Abatement Design Goal? ²	Anticipated Cost	Allowable Cost	Cost Effective? ³	
10	0.0	No	N/A	N/A	N/A	N/A	N/A	No
12	0.0	No	N/A	N/A	N/A	N/A	N/A	No
14	0.0	No	N/A	N/A	N/A	N/A	N/A	No
16	0.0	No	N/A	N/A	N/A	N/A	N/A	No

¹ 5 dBA reduction for at least 50% of front-row receptors

² 7 dBA for at least 35% of front-row receptors

³ Anticipated cost is less than allowable cost.

None of the wall heights evaluated for Dixie Drive Intersection Wall were found to be acoustically feasible. Therefore, a wall at this location is not recommended for balloting.

Figure 3

Dixie Drive Intersection Wall

Total Wall Length: 216 ft
Wall Cost per sq ft: \$20
Cost of items critical to safety: \$25 (\$25/ft for snow storage)
of First Row Receivers: 4

Name	# of DU	1st Row Relocation	1st Row	# of 1st Row	10-ft Wall	Design Goal	Benefitted	1st Row Design Goal	1st Row 5 dBA Reduction	12-ft Wall	Design Goal	Benefitted	1st Row Design Goal	1st Row 5 dBA Reduction	14-ft Wall	Design Goal	Benefitted	1st Row Design Goal	1st Row 5 dBA Reduction	16-ft Wall	Design Goal	Benefitted	1st Row Design Goal	1st Row 5 dBA Reduction
159 8"	1		Yes	1	0.7	No	No	No	No	0.8	No	No	No	No	0.8	No	No	No	No	0.8	No	No	No	No
149 8"	1		Yes	1	0.2	No	No	No	No	0.2	No	No	No	No	0.2	No	No	No	No	0.3	No	No	No	No
150 8"	1		Yes	1	0.2	No	No	No	No	0.3	No	No	No	No	0.4	No	No	No	No	0.4	No	No	No	No
151 8"	1			0	0.2	No	No	No	No	0.2	No	No	No	No	0.2	No	No	No	No	0.2	No	No	No	No
152 0"	1		Yes	1	0	No	No	No	No	0	No	No	No	No	0.1	No	No	No	No	0.1	No	No	No	No

Feasibility Factors:

of First-Row 5 dBA Reduction: 0
% of First-Row 5 dBA Reduction: 0.0%
Acoustic Feasibility (5 dBA reduction for 50% of front-row): No

Reasonableness Factors:

of First-Row Design Goal: 0
% of First-Row Design Goal: 0.0%
Noise Abatement Design Goal (7 dBA reduction for 35% of front-row): No

of Benefitted: 0
Cost of Noise Wall (Length x Height x \$20/sq ft): \$43,200.00
Cost of snow storage: \$5,400.00
Anticipated Cost of Noise Abatement: \$48,600.00
Allowable Cost (\$30,000 per benefitted receptor): \$0.00
Cost Effective (Anticipated Cost < Allowable Cost): No

Feasible and Reasonable:

No

0
0.0%
No

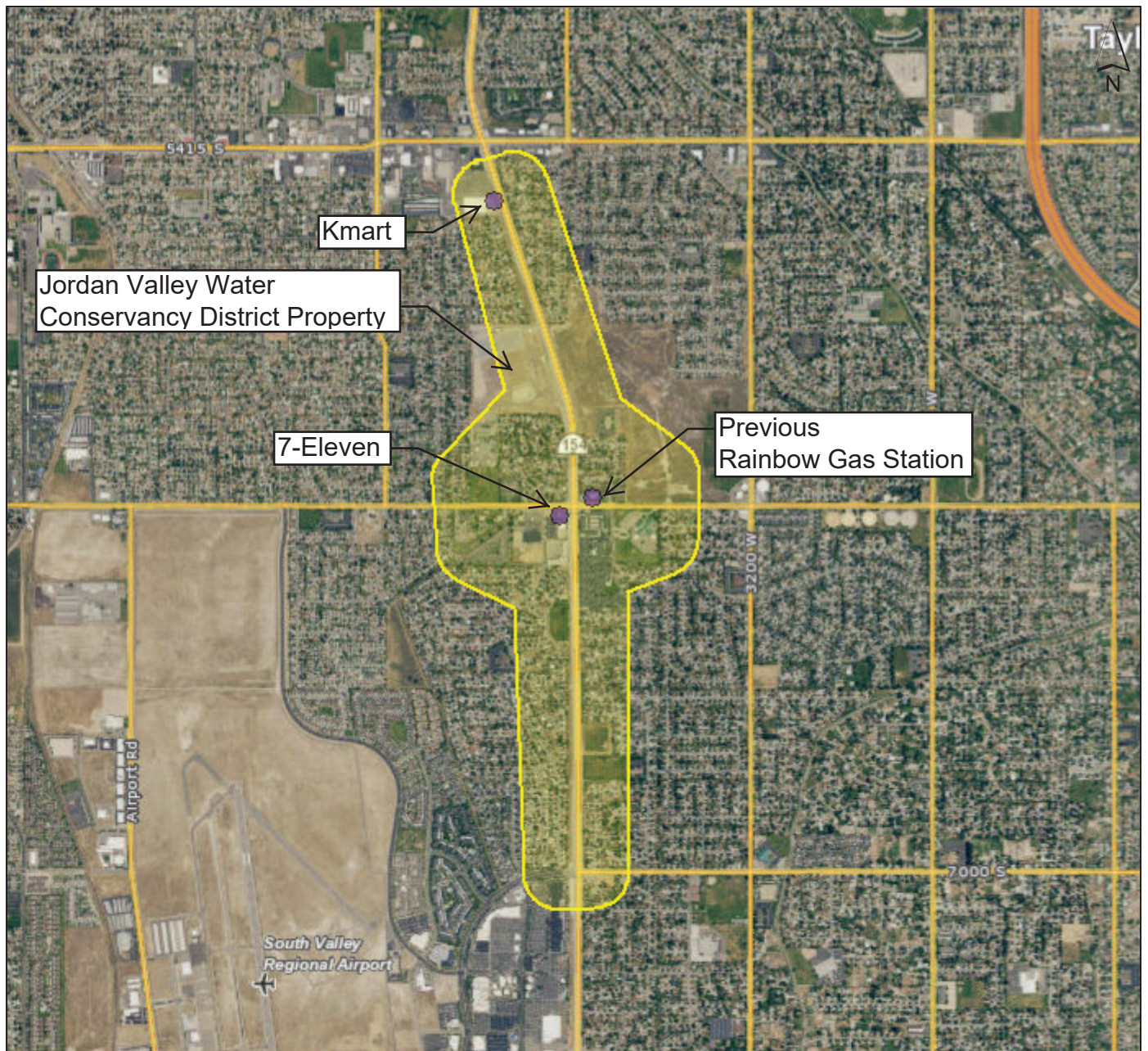
0
0.0%
No

0
\$60,480.00
\$5,400.00
\$65,880.00
\$0.00

No

E. Hazardous Waste Review Figures

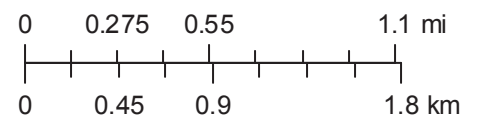
Printed from the Utah DEQ Interactive Map



2/7/2018

1:36,112

● Underground Storage Tanks



1:9,028

