



— BUREAU OF —
RECLAMATION

Final Programmatic Environmental Assessment and Finding of No Significant Impact for the Jordan Aqueduct on Bangerter Highway between 2700 West (Riverton) and S.R. 201(2100 South)

PRO-EA-21-004

**Interior Region 7 – Upper Colorado Basin
Provo Area Office
Provo, Utah**

Mission Statements

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.

The mission of the U.S. Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Final Programmatic Environmental Assessment and Finding of No Significant Impact for the Jordan Aqueduct on Bangerter Highway between 2700 West (Riverton) and S.R. 201 (2100 South)

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**Interior Region 7 – Upper Colorado Basin
Provo Area Office
Provo, Utah**

The U.S. Bureau of Reclamation (Reclamation) prepared this Programmatic Environmental Assessment (EA) to assess the potential consequences to the Jordan Aqueduct from planned Utah Department of Transportation (UDOT) improvements to Bangerter Highway between 2700 West (Riverton) and S.R. 201 (2100 South) in Salt Lake County, Utah. UDOT is preparing multiple, separate State Environmental Studies for the Bangerter Highway interchange projects that are anticipated to be completed between 2022 and 2023. A Programmatic EA is warranted because the Proposed Action, described in Chapter 2 of this EA, has similar locations, project elements, and potential effects, and would occur in multiple phases.

The Proposed Action is needed because the planned UDOT interchange projects on Bangerter Highway (State Route 154) between 2700 West in Riverton, Utah, and State Route 201 (2100 South) have the potential to encroach on the Jordan Aqueduct easement, fee title properties, and pipeline and/or build permanent structures that are not allowed under the Jordan Aqueduct Protection Criteria. The purpose of the Proposed Action consists of two objectives, which are to (1) maintain the Jordan Aqueduct easement and pipeline in a similar or better condition compared to its current condition and (2) ensure that all Jordan Aqueduct Protection Criteria are met at the locations on Bangerter Highway planned for roadway improvements by UDOT.

This EA has been prepared in compliance with the National Environmental Policy Act and Reclamation procedures, and is intended to serve environmental review and consultation requirements pursuant to Executive Order 11988 (Floodplain Management), Executive Order 11990 (Wetlands Protection), Executive Order 12898 (Environmental Justice), the National Historic Preservation Act (Section 106), the Endangered Species Act [Section 7(c)], and Department of Interior and Reclamation Indian Trust Asset policies.

For further information, contact:

Jared Baxter,
NEPA Specialist
Provo Area Office

Phone: (801) 379-1081;
email: jbaxter@usbr.gov

**U.S. Department of the Interior
Bureau of Reclamation
Provo Area Office
Provo, Utah**

FINDING OF NO SIGNIFICANT IMPACT

**Programmatic Environmental Assessment for the Jordan Aqueduct on
Bangerter Highway between 2700 West (Riverton) and S.R. 201 (2100 South)
Salt Lake County, Utah**

EA-21-004

Recommended by:

**PETER
CROOKSTON**

Digitally signed by PETER
CROOKSTON
Date: 2022.03.12 10:03:03
-07'00'

Peter Crookston
Environmental Group Chief

Concur:

**BENJAMIN
WOOLF**

Digitally signed by BENJAMIN
WOOLF
Date: 2022.03.14 16:33:12
-06'00'

Ben Woolf
Water, Environmental, and Lands
Division Manager

Approved by:



Digitally signed by KENT
KOFFORD
Date: 2022.03.15 10:42:08
-06'00'

Kent Kofford
Area Manager

I. Introduction

In compliance with the National Environmental Policy Act of 1969, as amended (NEPA), the U.S. Bureau of Reclamation (Reclamation), Provo Area Office, has prepared a Programmatic Environmental Assessment (PEA; attached) to assess the expected consequences to the natural and human environment, including the Jordan Aqueduct, from planned Utah Department of Transportation (UDOT) improvements to Bangerter Highway between 2700 West (Riverton) and Parkway Boulevard (2700 South) in Salt Lake County, Utah.

The Jordan Aqueduct conveys drinking water to much of the Salt Lake Valley. The Jordan Aqueduct easement, fee title properties, and pipeline are owned by the United States and are administered by Reclamation under the authority and at the request of the Central Utah Project Completion Act office of the Department of the Interior, per public law 102-575, as amended. The Jordan Aqueduct is operated and maintained by the Jordan Valley Water Conservancy District (JVWCD) on behalf of itself and the Metropolitan Water District of Salt Lake and Sandy. If the Proposed Action is approved, the Bangerter Highway interchange locations anticipated to potentially affect the Jordan Aqueduct are 2700 West (Riverton), 9800 South, 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and State Route (S.R.) 201 (2100 South). At these locations, UDOT is proposing to either install protect-in-place measures for the Jordan Aqueduct or relocate sections of the Jordan Aqueduct so that the Jordan Aqueduct Protection Criteria are met in all locations.

The PEA process and the information it generated will be used for the following purposes:

- To disclose expected program-related environmental effects
- To disclose procedures and develop measures that reduce or eliminate these environmental effects
- To assist Reclamation and potentially other agencies in the decision-making process pursuant to NEPA
- To serve as a starting point for evaluating site-specific environmental impacts

A draft PEA was published prior to issuing the final PEA and this Finding of No Significant Impact (FONSI). A 30-day comment period was conducted for the draft PEA. The 30-day comment period ended on February 28, 2022. No comments were received during the comment period.

II. Alternatives

The PEA analyzed two alternatives: the No Action and the Proposed Action Alternative (Proposed Action).

No Action

With the No Action Alternative, Reclamation would not authorize any UDOT impacts to the Jordan Aqueduct, and UDOT would be required to modify the Bangerter Highway interchange projects to avoid impacts to Reclamation facilities.

Proposed Action

The Bangerter Highway interchange locations anticipated to potentially affect the Jordan Aqueduct are 2700 West (Riverton), 9800 South, 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South). At these locations, UDOT is proposing to either install protect-in-place measures for the Jordan Aqueduct or relocate sections of the Jordan Aqueduct so that the Jordan Aqueduct Protection Criteria are met in all locations. The Proposed Action is described in detail in Section 2.4 of the final PEA.

III. Summary of Impacts

Chapter 3 of the final PEA describes the anticipated impacts of the Proposed Action. A total of 22 resources were initially considered, but 10 were eliminated from detailed analysis in order to limit the discussion to potentially impacted resources (hydrology, floodplains, geology and soils resources, paleontological resources, threatened or endangered species, wildlife resources, riparian areas, wilderness and wild and scenic rivers, prime and unique farmlands, and water rights).

The remaining 12 resources were retained for detailed analysis for the No Action and Proposed Action alternatives. This FONSI adopts those analyses in full, with the corresponding effects.

1. **System Operations** – The Proposed Action Alternative will construct the new Jordan Aqueduct protection measures or relocate the sections of the Jordan Aqueduct before construction of the planned Bangerter Highway interchanges. The Proposed Action Alternative will maintain the existing operations of the Jordan Aqueduct in equal or better condition compared to existing conditions.
2. **Waters of the United States** – The Proposed Action Alternative could require new or extended crossings of waters of the United States at 2700 West (Riverton), 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South). UDOT will obtain a Section 404 (Clean Water Act) permit, stream alteration permit, and other applicable permits from local officials and irrigation districts as needed.
3. **Water Quality** – The Proposed Action Alternative could require a new or extended crossing of Rose Creek, an impaired water, at 2700 West (Riverton). UDOT will work with the Utah Division of Water Quality to determine the status of impairment and to develop approaches to control *E. coli* pursuant to UDOT's Municipal Separate Storm Sewer System permit.

4. **Existing Vegetation and Noxious Weeds** – The Proposed Action Alternative could require the temporary removal of existing vegetation in areas where excavation, grading, or staging would occur.
5. **Cultural Resources** – The Proposed Action Alternative could have either no adverse effect or an adverse effect on individual cultural resources at 2700 West (Riverton), 4700 South, 4100 South, 3500 South, 3100 South, and S.R. 201 (2100 South). UDOT will consult with the Utah State Historic Preservation Office (SHPO) regarding the determinations of eligibility, findings of effect, and mitigation measures for cultural resources that would experience an adverse effect.
6. **Indian Trust Assets** – There are no known Indian Trust Assets in the project areas. No foreseeable negative effects are anticipated.
7. **Socioeconomics and Private Properties** – Reclamation anticipates that the Proposed Action Alternative could require UDOT to purchase privately owned residential, commercial, and institutional properties. UDOT will provide compensation to impacted property owners, businesses, and tenants pursuant to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the Utah Relocation Assistance Act (Utah Code Annotated Section 57-12-1 et seq.).
8. **Environmental Justice** – No disproportionate effects on low-income or minority populations are anticipated.
9. **Recreation Resources** – The Proposed Action Alternative could potentially require property acquisition from the West Valley Neighborhood Park and Stonebridge Golf Course. If these resources are affected, UDOT will work with West Valley City to identify mitigation measures that maintain or enhance these recreation resources.
10. **Health, Safety, Air Quality, and Noise** – The Proposed Action Alternative could cause short-term reductions in air quality and increases in noise from the operation of construction equipment. The Proposed Action Alternative could potentially require property acquisition from sites with hazardous materials. If these sites are affected by the Proposed Action Alternative, UDOT will work with the Utah Division of Environmental Response and Remediation and the property owners to identify mitigation or remediation measures.
11. **Access and Transportation** – The Proposed Action Alternative could cause short-term impacts (temporary closures, detours, or delays) to access and transportation during the relocation of the Jordan Aqueduct anticipated at 4700 South, 4100 South, 3500 South, and 3100 South. The Proposed Action Alternative could have long-term benefits to access and transportation by allowing the construction of the Bangerter Highway interchanges.
12. **Visual Resources** – The Proposed Action Alternative could have short-term visual impacts from excavation and construction activities in areas where the Jordan Aqueduct is relocated if the new pipeline is installed using an open-trench technique.

IV. Environmental Commitments

The commitments listed in Chapter 4 of the final PEA are incorporated into this FONSI by reference and considered part of the Proposed Action. The environmental commitments must be implemented as outlined in the final PEA.

V. Finding of No Significant Impact

Based on a review of the final PEA and its supporting documents, implementing the Proposed Action will not significantly affect the quality of the human or natural environment, individually or cumulatively with other actions in the area. No environmental effects meet the definition of significance in context or intensity as defined in 40 CFR 1508.27. Consequently, an Environmental Impact Statement is not required for this Proposed Action.

VI. Decision

The Proposed Action, to either install protect-in-place measures for the Jordan Aqueduct or relocate sections of the Jordan Aqueduct so that the Jordan Aqueduct Protection Criteria are met at the Bangerter Highway and 2700 West (Riverton), 9800 South, 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South) interchange locations, will not significantly affect the human or natural environment as summarized above. Furthermore, the Proposed Action meets the purpose of and need for the Project. The No Action Alternative does not meet the purpose of or need for the Project. Based on the lack of significant effects to the human environment and because the Proposed Action meets the purpose of and need of the Project while the No Action Alternative does not, it is Reclamation's decision, therefore, to authorize UDOT to implement the Proposed Action as described in the attached PEA.

VII. Future Site-specific Analyses

The analysis presented in the PEA is addressed from a programmatic level and evaluates the affected environment and expected consequences from a broad perspective. This EA is not intended to fulfill all environmental requirements for future Proposed Action activities. As specific project details are determined for each location with the Proposed Action, site-specific environmental review will occur. This additional environmental review could include, but is not limited to, revisions or additions to proposed measures to minimize and avoid potential effects, and agency consultation. Reclamation will use the following procedures to authorize site-specific UDOT projects that could impact the Jordan Aqueduct:

1. UDOT and JVWCD would propose and develop individual projects specific to a single interchange consistent with the Proposed Action, project design features, and decisions for the PEA.
2. Before Reclamation makes a final decision (FONSI) regarding each project, Reclamation would determine whether the effects of the planned activities exceed the effects disclosed in the PEA by preparing a site-specific EA, pursuant to 40 Code of Federal Regulations (CFR) Section 1501.11 (tiering).
 - a. If the scope and degree of the effects are within the scope of the effects described in the PEA, Reclamation would complete a brief EA and FONSI, referencing the relevant reports disclosing those effects.
 - b. If the scope and degree of the effects exceed those described in the PEA, Reclamation would perform additional environmental review in a less abbreviated EA or in an EIS, depending on the anticipated significance of the effects of the site-specific project. The appropriate decision document (FONSI or Record of Decision) would then follow.
3. Reclamation would post all final EAs and FONSIs on Reclamation's website at <https://www.usbr.gov/uc/DocLibrary/ea.html>. EISs have unique web pages.

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Acronyms and Abbreviations

| Acronym/ Abbreviation | Meaning |
|--------------------------|--|
| APE | area of potential effects |
| BMP | Standard Reclamation best management practices |
| CFR | Code of Federal Regulations |
| <i>E. coli</i> | <i>Escherichia coli</i> |
| EA | Environmental Assessment |
| et seq. | and subsequent sections |
| FHWA | Federal Highway Administration |
| FONSI | Finding of No Significant Impact |
| GIS | geographic information systems |
| ITA | Indian Trust Asset |
| JVWCD | Jordan Valley Water Conservancy District |
| NEPA | National Environmental Policy Act |
| PEA | Programmatic Environmental Assessment |
| Reclamation | United States Bureau of Reclamation |
| S.R. | State Route |
| SHPO | State Historic Preservation Officer |
| UDOT | Utah Department of Transportation |
| UPDES | Utah Pollutant Discharge Elimination System |
| USACE | United States Army Corps of Engineers |
| USC | United States Code |

1 Purpose and Need

1.1 Introduction and Background

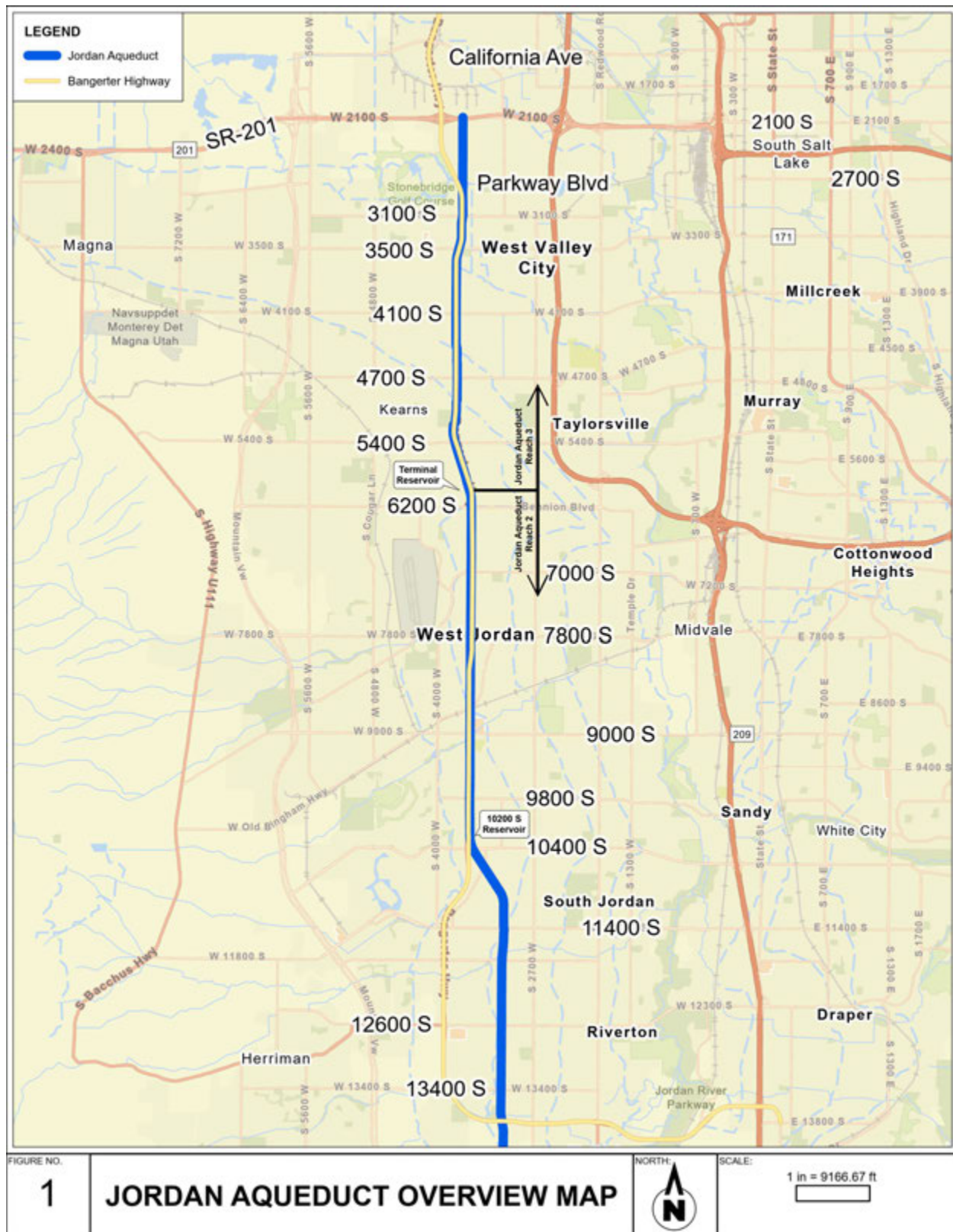
1.1.1 Jordan Aqueduct Background

The Jordan Aqueduct runs from south to north and has four reaches that extend from Provo Canyon in Utah County, Utah, to 2100 South in Salt Lake County, Utah. In Salt Lake County, the Jordan Aqueduct Reach 2 crosses underneath Bangerter Highway (State Route [S.R.] 154) perpendicularly near 3200 West in Riverton, Utah. Bangerter Highway and the Jordan Aqueduct Reaches 2 and 3 are located close to each other from 10400 South to 2900 South. From 2900 South to 2100 South, Bangerter Highway turns to the west and stays in an alignment west of the Jordan Aqueduct (Figure 1). The Jordan Aqueduct Reaches 1 and 4 are not located near Bangerter Highway and would not be impacted by the projects discussed in this Programmatic Environmental Assessment (EA).

The Jordan Aqueduct conveys drinking water to much of the Salt Lake Valley. The Jordan Aqueduct easement, fee title properties, and pipeline are owned by the United States and are administered by the Bureau of Reclamation (Reclamation) under the authority and at the request of the Central Utah Project Completion Act office of the Department of the Interior, per public law 102-575, as amended. The Jordan Aqueduct is operated and maintained by the Jordan Valley Water Conservancy District (JVWCD) on behalf of itself and the Metropolitan Water District of Salt Lake and Sandy. The Jordan Aqueduct pipeline is located underground in all locations along Bangerter Highway.

The Jordan Aqueduct Reach 2 is east of and adjacent to Bangerter Highway from 10400 South to about 8100 South. At this location the aqueduct crosses to the west side of Bangerter Highway. The aqueduct reaches the Terminal Reservoir at 5820 South 3815 West in Taylorsville (the reservoir is owned jointly by JVWCD and the Metropolitan Water District of Salt Lake and Sandy). Reach 3 of the Jordan Aqueduct extends from the Terminal Reservoir north along Bangerter Highway until it terminates at 2100 South. The aqueduct is west of Bangerter Highway between the Terminal Reservoir and 5200 South. At 5200 South, the Jordan Aqueduct crosses to the east side of Bangerter Highway, and it stays on the east side of Bangerter Highway to 4400 South. Between 4400 South and 2900 South, the aqueduct is directly underneath Bangerter Highway. Between 2900 South and 2100 South, the aqueduct diverges from the Bangerter Highway corridor and stays in an alignment east of the highway. Figure 2 in Section 2.4, Proposed Action Alternative, of this EA shows the location of the Jordan Aqueduct in relation to Bangerter Highway in these locations.

Figure 1. Jordan Aqueduct Overview Map



1.1.2 UDOT Bangerter Highway Interchanges Project Background

Bangerter Highway (S.R. 154) is a regionally significant transportation facility located in western Salt Lake County that extends from Interstate 80 at the Salt Lake City International Airport (Exit 115) to Interstate 15 (Exit 289) in Draper, Utah. The Utah Department of Transportation (UDOT) originally built Bangerter Highway as an arterial facility with at-grade intersections. The arterial Bangerter Highway was completed in the late 1990s. Because population and travel demand have continued to increase in western Salt Lake County, UDOT has been converting Bangerter Highway from an arterial roadway with at-grade intersections to a freeway facility with grade-separated interchanges. Work on converting Bangerter Highway to a freeway facility began around 2010 and is anticipated to be completed in the late 2020s. The State of Utah is investing over one billion dollars into this conversion.

As of the fall of 2021, UDOT has completed interchanges on Bangerter Highway at 600 West (Draper), Redwood Road, 11400 South, 9000 South, 7800 South, 7000 South, and 5400 South. UDOT is currently constructing new interchanges at 12600 South, 10400 South, and 6200 South and anticipates that they will be completed in late 2021.

In 2021, UDOT received funding to begin environmental and design work on the remaining at-grade intersections that need to be converted to grade-separated interchanges. This effort includes grade-separated interchanges at 2700 West (Riverton), 13400 South, 9800 South, 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), Lake Park Boulevard/2400 South, S.R. 201, 1820 South, and California Avenue (1300 South). UDOT will prepare State Environmental Studies for the grade-separated interchanges at each of these locations in 2021 and 2022.

UDOT currently lists the following phases and priorities for these interchange projects (see Figure 2 in Section 2.4, Proposed Action Alternative, of this EA):

1. **Phase 1** – Construction anticipated starting in 2023
 - 13400 South
 - 9800 South
 - 4700 South
2. **Phase 2** – Construction anticipated starting in 2028
 - 4100 South
 - 3500 South
 - 3100 South
 - Parkway Boulevard (2700 South)
 - Lake Park Boulevard/2400 South
 - S.R. 201 (interchange improvements)
 - 1820 South
 - California Avenue (1300 South)
3. **Phase 3** – Construction funding not currently identified
 - 2700 West (Riverton)

1.1.3 Previous Reclamation Environmental Assessments for Bangerter Highway Interchange Projects That Affected the Jordan Aqueduct

The *Jordan Aqueduct Easement and Pipeline Relocation and Encroachments Final Environmental Assessment* (PRO-EA-16-021) was completed in 2016 for impacts to the Jordan Aqueduct from the Bangerter Highway interchange projects at 5400 South, 7000 South, and 9000 South (USBR 2016). The *Jordan Aqueduct Easement and Pipeline Relocation Final Environmental Assessment* (PRO-EA-18-011) was completed in 2018 for impacts to the Jordan Aqueduct from the Bangerter Highway interchange project at 6200 South (USBR 2018).

1.2 Purpose and Need

The Proposed Action is needed because the planned UDOT interchange projects on Bangerter Highway (S.R. 154) between 2700 West in Riverton, Utah, and S.R. 201 (2100 South) could encroach on the Jordan Aqueduct easement, fee title properties, and pipeline and/or would propose permanent structures that are not allowed under the Jordan Aqueduct Protection Criteria. The Protection Criteria are Reclamation's and JVWCD's guidelines for encroaching on the Jordan Aqueduct easement or fee title properties. A copy of the Protection Criteria is provided in Appendix A. UDOT's planned Bangerter Highway interchange projects at 2700 West (Riverton), 9800 South, 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South) could encroach on or would propose a permanent structure in the Jordan Aqueduct easement or fee title properties in these locations.

The purpose of the Proposed Action consists of two objectives, which are to (1) maintain the Jordan Aqueduct easement, fee title properties, and pipeline in a similar or better condition compared to its current condition while minimizing impacts to the surrounding human and natural environment and (2) ensure that all Jordan Aqueduct Protection Criteria are met at the locations on Bangerter Highway planned for roadway improvements by UDOT.

1.3 No Action

The No Action Alternative consists of the reasonably foreseeable future conditions in the absence of the Proposed Action. The purpose of defining the No Action Alternative is to allow decision-makers to compare the impacts of approving the Project to the impacts of not approving the Project. The No Action Alternative reflects existing and expected future conditions in the Project area if no action is taken.

With the No Action Alternative, Reclamation would not authorize any UDOT impacts to the Jordan Aqueduct, and UDOT would be required to modify the Bangerter Highway interchange projects to avoid impacts to Reclamation facilities. These modifications would require UDOT to realign Bangerter Highway outside the existing highway corridor, which would result in substantial impacts to the surrounding human and natural environment. Therefore, this alternative would not meet the purpose of, or need for, the Proposed Action.

1.4 Proposed Action

The Bangerter Highway Interchange locations anticipated to potentially affect the Jordan Aqueduct are 2700 West (Riverton), 9800 South, 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201.

At the locations where the UDOT Bangerter Highway interchange projects could affect the Jordan Aqueduct, UDOT is proposing to either install protect-in-place measures for the Jordan Aqueduct or relocate sections of the Jordan Aqueduct so that the Jordan Aqueduct Protection Criteria are met in all locations.

The Proposed Action includes land use authorizations from the United States to various applicants for use of fee title lands and easements associated with the Jordan Aqueduct. The license agreements and easement encroachment agreements would authorize new or updated utility crossings, sidewalk crossings, trails, or other items to cross the Reclamation fee title lands or easements.

More details regarding the anticipated components of the Proposed Action are in Section 2.4, Proposed Action Alternative, of this EA.

1.5 Purpose of the Programmatic EA

The purpose of an EA is to provide analysis for the National Environmental Policy Act (NEPA) process. This EA contains data, analysis, and explanations that demonstrate that Reclamation has made a good faith effort to identify and disclose reasonably foreseeable potential environmental effects of the Proposed Action.

This Programmatic EA was prepared to examine the potential environmental impacts of roadway improvements on Bangerter Highway at 2700 West (Riverton), 9800 South, 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South) that could affect Reclamation's Jordan Aqueduct easement, fee title properties, and pipeline.

A Programmatic EA is warranted because the Proposed Action has similar locations, project elements, and potential effects, and would occur in multiple phases. Additionally, a Programmatic EA is warranted for this Proposed Action because Reclamation has recently completed two EAs for similar UDOT projects on Bangerter Highway at 5400 South, 6200 South, 7000 South, and 9000 South that impacted the Jordan Aqueduct (USBR 2016, 2018). Due to the similar, urban nature of the Bangerter Highway corridor, these recently completed EAs provide relevant analysis for the likely resources and impacts for the current Bangerter Highway interchange projects at 2700 West (Riverton), 9800 South, 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South).

The Programmatic EA process and the information it generates will be used for the following purposes:

- To disclose expected program-related environmental effects
- To disclose procedures and develop measures that reduce or eliminate these environmental effects
- To assist Reclamation and potentially other agencies in the decision-making process pursuant to NEPA
- To serve as a starting point for evaluating site-specific environmental impacts

As specific project details are determined, site-specific environmental review will occur. This additional environmental review could include, but is not limited to, revisions or additions to proposed measures to minimize and avoid potential effects, and agency consultation. Reclamation would use the following procedures to authorize site-specific UDOT projects that could impact the Jordan Aqueduct:

1. UDOT and JWCD would propose and develop individual projects specific to a single interchange consistent with the Proposed Action, project design features, and decisions for this Programmatic EA.
2. Before Reclamation makes a final decision (a finding of no significant impact, or FONSI) regarding each project, Reclamation will determine whether the effects of the planned activities exceed the effects disclosed in this Programmatic EA by preparing a site-specific EA, pursuant to 40 Code of Federal Regulations (CFR) Section 1501.11 (tiering).
 - a. If the scope and degree of the effects are within the scope of the effects described in this Programmatic EA, Reclamation will complete a brief EA and FONSI, referencing the relevant reports disclosing those effects.
 - b. If the scope and degree of the effects exceed those described in this Programmatic EA, Reclamation will perform additional environmental review in a less abbreviated EA or in an Environmental Impact Statement (EIS), depending on the anticipated significance of the effects of the site-specific project. The appropriate decision document (FONSI or Record of Decision) would then follow.
3. Reclamation will post all final EAs and FONSIs on Reclamation's website at <https://www.usbr.gov/uc/DocLibrary/ea.html>. EISs have unique web pages.

1.6 Relevant Statutes, Regulations, Permits, and Other Plans

The lead federal agency for this EA is Reclamation. This EA has been prepared in compliance with all applicable federal statutes, regulations, and executive orders.

1.6.1 National Environmental Policy Act of 1969, as Amended (42 United States Code [USC] Section 4321 et seq.)

- Procedures for Implementing NEPA (33 CFR Part 230; Engineer Regulation [ER] 200-2-2)
- Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Part 1500 et seq. and 43 CFR Part 46 et seq.)

1.6.2 Endangered Species Act of 1973, as Amended (16 USC Section 1531 et seq.) and Related Statutes and Orders

- Fish and Wildlife Coordination Act of 1958, as amended (16 USC Section 661 et seq.)
- Secretarial Order 3206, American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act

1.6.3 National Historic Preservation Act of 1966, as Amended (16 USC Section 470 et seq.) and Related Statutes, Regulations, and Orders

- American Indian Religious Freedom Act of 1978 (42 USC Section 1996)
- Archaeological Resources Protection Act of 1979 (16 USC Section 470)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC Section 3001 et seq.)
- Protection and Enhancement of the Cultural Environment (Executive Order 11593)

1.6.4 Clean Water Act of 1972, as Amended (33 USC Section 1251 et seq.) and Related Orders

- Protection of Wetlands (Executive Order 11990)

1.6.5 Other Statutes, Regulations and Orders

- Executive Order 13807 (August 15, 2017) and Secretary's Order 3355 (August 31, 2017) established policy to prioritize infrastructure projects and streamline the environmental review process
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 1994
- Clean Air Act of 1972, as amended (42 USC Section 7401 et seq.)
- Floodplain Management (Executive Order 11988)
- Wild and Scenic Rivers, 1968 (Public Law 90-542; 16 USC Section 1271 et seq.)
- Migratory Bird Treaty Act of 1918 (16 USC Section 703 et seq.) and Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds

1.6.6 Permits

- A Utah Pollutant Discharge Elimination System (UPDES) Permit from the Utah Division of Water Quality could be necessary for stormwater discharges from construction activities because the Proposed Action could impact more than 1 acre of land.

1.6.7 Related Documents

This Programmatic EA has used the data and analyses from the following documents:

- The *Jordan Aqueduct Easement and Pipeline Relocation and Encroachments Final Environmental Assessment (PRO-EA-16-021)* was completed in 2016 for impacts to the Jordan Aqueduct at Bangerter Highway and 5400 South, 7000 South, and 9000 South (USBR 2016).
- The *Jordan Aqueduct Easement and Pipeline Relocation Final Environmental Assessment (PRO-EA-18-011)* was completed in 2018 for impacts to the Jordan Aqueduct at Bangerter Highway and 6200 South (USBR 2018).
- UDOT State Environmental Studies were prepared for the Bangerter Highway interchanges at 5400 South, 6200 South, 7000 South, and 9000 South (UDOT 2016a, 2016b, 2016c, 2018).

For future site-specific EAs, Reclamation will use the UDOT State Environmental Studies and supporting technical documents where applicable when developing these EAs. The UDOT State Environmental Studies for the Proposed Action are anticipated to be completed in 2022 to 2023.

2 Alternatives

2.1 Introduction

This section describes the No Action and Proposed Action Alternatives. As described in Section 2.2, No Action Alternative, of this EA, the inclusion of the No Action Alternative serves as a benchmark against which project alternatives can be evaluated. This section also includes a short description of the alternative development process, a brief description of alternatives that were considered but eliminated from further study, and a designation of the preferred alternative.

2.2 No Action Alternative

The No Action Alternative consists of the reasonably foreseeable future conditions in the absence of the Proposed Action. The purpose of defining the No Action Alternative is to allow decision-makers to compare the impacts of approving the Proposed Action to the impacts of not approving the Proposed Action. The No Action Alternative reflects existing and expected future conditions if no action is taken.

With the No Action Alternative, Reclamation would not authorize any UDOT impacts to the Jordan Aqueduct, and UDOT would be required to modify the Bangerter Highway interchange projects to avoid impacts to Reclamation facilities. This alternative would not meet the purpose of, or need for, the Proposed Action.

2.3 Alternatives Considered but Eliminated from Further Study

No other standalone action alternatives were considered or evaluated by Reclamation for this EA. However, during the coordination and more-detailed engineering processes conducted for each interchange that could affect the Jordan Aqueduct, UDOT, Reclamation, and JWCD will evaluate different options for protecting or relocating the Jordan Aqueduct to confirm that the Proposed Action described below is the best option based on engineering feasibility, operations, and right-of-way constraints.

2.4 Proposed Action Alternative

The Proposed Action Alternative is the preferred alternative.

The Bangerter Highway interchange locations anticipated to potentially affect the Jordan Aqueduct are 2700 West (Riverton), 9800 South, 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South).

At the locations where there could be impacts to the Jordan Aqueduct from the UDOT Bangerter Highway interchange projects, UDOT is proposing to either install protect-in-place measures for the Jordan Aqueduct or relocate sections of the Jordan Aqueduct so that the Jordan Aqueduct Protection Criteria are met in all locations.

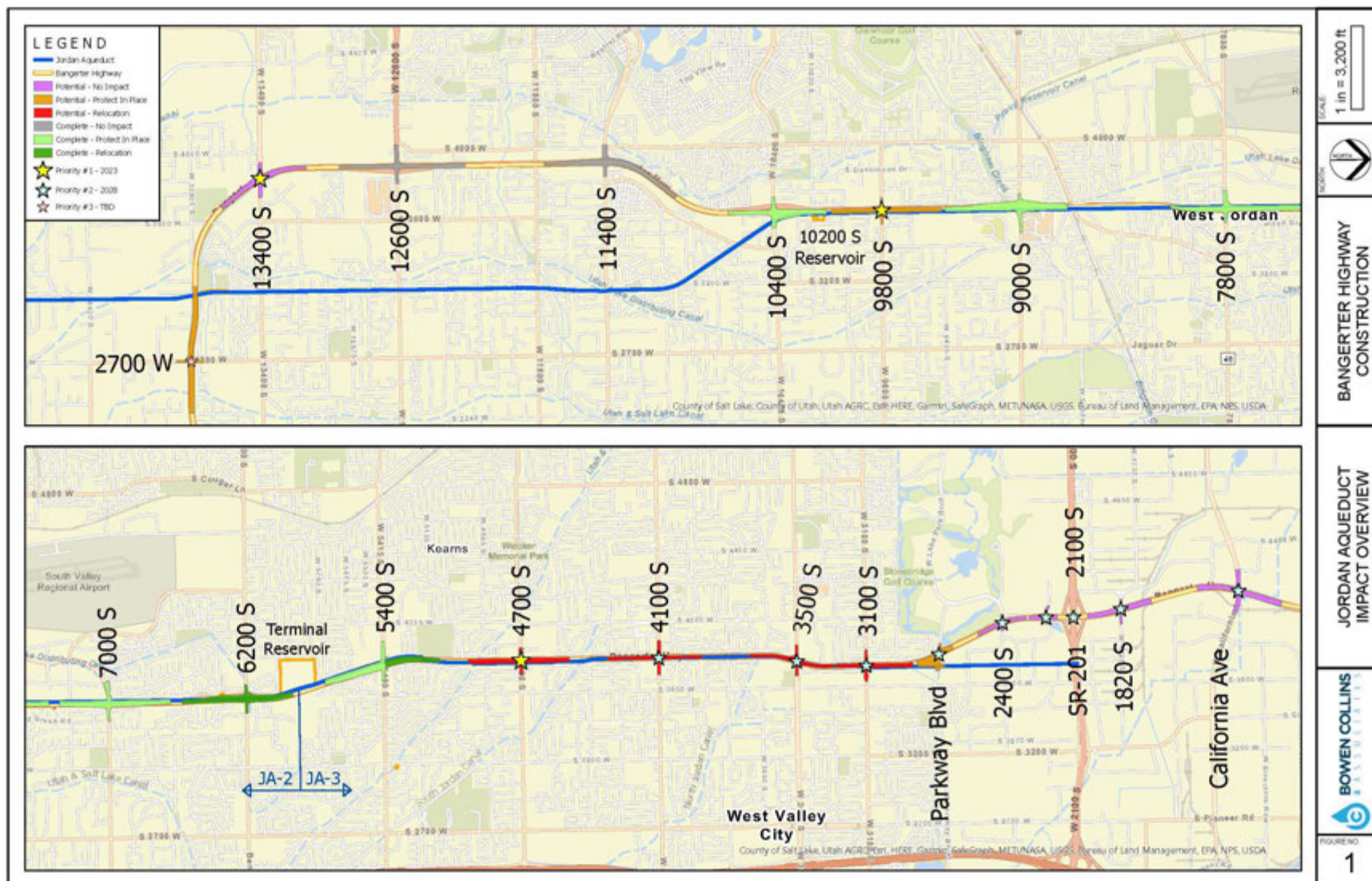
Reclamation anticipates that the Proposed Action Alternative would include the following actions at the following locations. Figure 2 provides an overview of the elements of the Proposed Action Alternative.

- **2700 West (Riverton):** The planned interchange on Bangerter Highway at 2700 West (Riverton) is currently anticipated to have no impact to the Jordan Aqueduct Reach 2 crossing of Bangerter Highway at 3200 West. There is a possibility that the westbound on-ramp and eastbound off-ramp for the planned 2700 West interchange could require protection-in-place measures and/or an extension of the existing casing for the Jordan Aqueduct crossing of Bangerter Highway at 3200 West.
- **9800 South:** The planned interchange on Bangerter Highway at 9800 South is anticipated to require protection-in-place measures for the Jordan Aqueduct Reach 2 between approximately 10100 South and 9300 South.
- **4700 South:** The planned interchange on Bangerter Highway at 4700 South is anticipated to require relocating the Jordan Aqueduct Reach 3 between approximately 4900 South and 4400 South. This relocation is likely to occur on the east side of Bangerter Highway.
- **4100 South:** The planned interchange on Bangerter Highway at 4100 South is anticipated to require relocating the Jordan Aqueduct Reach 3 between approximately 4300 South to 3900 South. This relocation is likely to occur on the east side of Bangerter Highway. It is possible that the relocation at 4100 South could be connected to the relocation anticipated to be required at 3500 South.
- **3500 South:** The planned interchange on Bangerter Highway at 3500 South is anticipated to require relocating the Jordan Aqueduct Reach 3 between approximately 3700 South and 3300 South. This relocation is likely to occur on the east side of Bangerter Highway. The relocation at 3500 South could possibly be connected to the relocations anticipated to be required at 4100 South and 3100 South.
- **3100 South:** The planned interchange on Bangerter Highway at 3100 South is anticipated to require relocating the Jordan Aqueduct Reach 3 between approximately 3300 South and 2900 South. This relocation is likely to occur on the east side of Bangerter Highway. The relocation at 3100 South could possibly be connected to the relocation anticipated to be required at 3500 South.
- **Parkway Boulevard (2700 South):** The planned interchange on Bangerter Highway at Parkway Boulevard (2700 South) is anticipated to require protection-in-place measures for the Jordan Aqueduct Reach 3 between approximately 2900 South and 2700 South.
- **S.R. 201 (2100 South):** The planned interchange improvements at the Bangerter Highway and S.R. 201 interchange are currently anticipated to have no impacts to the Jordan Aqueduct Reach 3 crossing of S.R. 201 at 3700 West. There is a possibility that the S.R. 201 interchange ramps may need to be extended or modified and the south frontage road may need to be reconstructed between Bangerter Highway and 3200 West. These potential ramp and south frontage road modifications could require protection-in-place measures and/or an extension of the existing casing for the Jordan Aqueduct crossing of S.R. 201 at 3700 West.

- **License Agreement Work in Reclamation Fee Title Lands and Easement Encroachment Agreement Work in Reclamation Easements:** The Proposed Action Alternative might include license agreement work that would occur in existing or new Reclamation fee title lands and easement encroachment agreement work for the Reclamation easements affected by UDOT's Bangerter Highway interchange projects. Agreement work on proposed encroachments could include new or relocated utility crossings, roadway crossings, driveways, parking lots, curbs, gutters, sidewalk crossings, trails, or other items that would cross the Reclamation fee title lands or easements.

The final design and mitigation measures for these facilities will be determined after Reclamation completes its engineering review of the UDOT interchange designs at each location.

Figure 2. Jordan Aqueduct Impact Overview



2.4.1 Construction Schedule

UDOT anticipates that construction of the 9800 South and 4700 South interchanges could begin as early as 2023. UDOT anticipates that construction of the 4100 South, 3500 South, 3100 South, and Parkway Boulevard (2700 South) interchanges could begin as early as 2028. The 2700 West (Riverton) interchange is currently unfunded, so construction timing is uncertain.

2.4.2 Construction Procedures

For all Proposed Action Alternative work, UDOT, JWCD, and their contractors will follow all general Reclamation and JWCD procedures along with all UDOT project-specific procedures and conditions.

3 Affected Environment and Environmental Consequences

3.1 Introduction

Section 3 describes the environment in which the Proposed Action Alternative would be implemented. The various associated environmental resources are discussed, including physical resources such as water resources, water quality, and air quality; biological resources such as vegetation, wetlands, noxious weeds, fish and wildlife resources, and endangered species; and socio-economic resources such as Indian Trust Assets, environmental justice, and cultural resources.

This section of the EA also evaluates potential environmental effects at a programmatic level and discusses impacts that could result from the Proposed Action Alternative or the No Action Alternative. The discussion of environmental consequences provides the programmatic framework for adequately assessing impacts in future site-specific NEPA documentation. Site-specific NEPA analysis is required for segments of the Jordan Aqueduct affected by the Proposed Action Alternative.

The end of the section includes a summary of potential environmental effects from both the Proposed Action and No Action Alternatives.

Measures to reduce potential effects to a less-than-significant-level are described in Section 4, Environmental Commitments, of this EA. As individual projects are implemented and details are determined, further environmental review might be warranted if the proposed mitigation measures would not effectively reduce potential effects to less-than-significant levels.

3.2 Resources Considered but Eliminated from Further Study

Table 1 lists the resources that were considered for analysis but were eliminated from further study in this EA.

Table 1. Resources Considered and the Rationale for Eliminating Them

| Resource | Rationale for Eliminating from Further Study |
|---------------------------------------|---|
| Hydrology | The Proposed Action Alternative would not affect hydrology. The Jordan Aqueduct and other Reclamation facilities would continue to use the same water sources as they currently use, and the Proposed Action Alternative would not affect the hydrology of other waters. |
| Floodplains | There are no designated, mapped Federal Emergency Management Agency floodplains near the project areas. Therefore, the Proposed Action Alternative would not affect these resources. |
| Geology and soils resources | The Proposed Action Alternative would not affect any unique or protected geologic resources or soils. The Proposed Action Alternative would not affect any geology and soils resources because all geology and soils affected by the Proposed Action Alternative would be restored to their existing condition after construction. |
| Paleontological resources | The Bangerter Highway corridor and surrounding residential and commercial properties have all been previously disturbed. No paleontological resources have been encountered or discovered on previous Bangerter Highway interchange projects. UDOT will consult with the Utah Geological Survey as part of the State Environmental Study processes to determine whether there are any known paleontological localities in each project's area of potential effects (APE). |
| Threatened or endangered species | No critical habitat or suitable habitat for threatened or endangered species is present in the Bangerter Highway corridor. |
| Wildlife resources | The activities associated with the Proposed Action Alternative would occur in disturbed residential or commercial areas. There are no wildlife refuges or properties actively managed or owned for wildlife habitat. Additionally, there is no suitable habitat for any sensitive species. The Proposed Action Alternative would not affect sensitive species. |
| Riparian areas | The Proposed Action Alternative would not affect riparian areas because there are no riparian areas in the locations where the Bangerter Highway interchanges would be constructed. |
| Wilderness and wild and scenic rivers | There are no designated wilderness areas or wild and scenic rivers in western Salt Lake County near the planned interchange areas. Therefore, the Proposed Action Alternative would not affect these resources. |
| Prime and unique farmland | The planned Bangerter interchanges would be located in areas defined as "urbanized areas" by the U.S. Census Bureau. Per 7 CFR Section 658.2, farmland does not include land already in or committed to urban development. |
| Water rights | The Proposed Action Alternative would not affect water rights because the Jordan Aqueduct would continue to use the same water sources and water rights with the Proposed Action. |

3.3 Description of Relevant Affected Issues and Resources

This section provides a full description of the relevant affected issues and resources that could be impacted by the Proposed Action Alternative.

3.3.1 System Operations

As described in Section 1.1, Introduction and Background, of this EA, the Jordan Aqueduct is operated and maintained by JWCD. The Jordan Aqueduct conveys drinking water to much of the Salt Lake Valley.

3.3.1.1 No Action Alternative

With the No Action Alternative, Reclamation would not approve UDOT's impacts to the Jordan Aqueduct, and UDOT would be required to modify the Bangerter Highway interchange projects to avoid impacts to the Jordan Aqueduct. Because Reclamation would not approve the impacts to the Jordan Aqueduct without mitigation measures, there would be no impacts to system operations with the No Action Alternative.

3.3.1.2 Proposed Action Alternative

The Proposed Action Alternative would either provide protection-in-place measures for the Jordan Aqueduct or relocate the Jordan Aqueduct prior to construction of the Bangerter Highway interchanges. The Jordan Aqueduct would be protected or relocated, and operational, before UDOT's Bangerter Highway interchange projects could have any impacts to the existing Jordan Aqueduct. The relocated Jordan Aqueduct would carry the same hydraulic capacity and would continue to deliver water to all existing laterals and turnouts. The relocated Jordan Aqueduct would be designed to carry a similar or higher capacity of water as the existing aqueduct. All turnouts from the Jordan Aqueduct would be relocated and would continue to function.

Similarly, the Proposed Action Alternative would install protective measures or relocate other impacted Reclamation facilities (for example, gates, valves, and turnouts) before the Bangerter Highway interchanges are constructed. With these mitigation measures, there would be no change to system operations with the Proposed Action Alternative.

3.3.2 Waters of the United States

Waters of the United States (that is, wetlands and other surface waters) provide important and beneficial functions including protecting and improving water quality, providing fish and wildlife habitat, and storing floodwaters. Because they provide these important functions, this resource is protected via two acts: Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act of 1972, as amended. These acts require that Reclamation strive to first avoid adverse impacts, then minimize adverse impacts, and finally offset unavoidable adverse impacts to existing aquatic resources; and for wetlands, strive to achieve a goal of no overall net loss of wetland values and functions.

The U.S. Army Corps of Engineers (USACE) has authority to regulate work in the Nation's waters (that is, waters of the United States) through the Rivers and Harbors Act. This act established permit requirements to prevent unauthorized obstruction or alteration of any navigable water.

USACE also regulates work in, on, or over waters of the United States via the Clean Water Act, which authorizes USACE to require permits for discharging dredge and fill material into waters of the United States.

UDOT will identify and evaluate impacts to waters of the United States as part of the State Environmental Study process for each interchange. If waters of the United States are identified, UDOT will conduct fieldwork and prepare a delineation report in accordance with the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008a), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (USACE 2008b), the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2010), and USACE regulatory guidance letters and joint (USACE and U.S. Environmental Protection Agency) regulations, policies, references, and guidance.

For this project, waters of the United States could include wetlands, named streams, canals, drains, and constructed water features. Potential waters of the United States have been identified near the 2700 West (Riverton), 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South) interchange locations. Table 2 lists the waters that have been identified using National Wetland Inventory maps and State of Utah water feature data.

Table 2. Waters That Could Be Affected by the Proposed Action Alternative

| Water | Type | Location |
|--------------------------------------|----------------------------------|--|
| Rose Creek | Perennial stream | Crosses under Bangerter Highway at 2700 West (Riverton) |
| Utah and Salt Lake Canal | Canal | Crosses under Bangerter Highway at 2500 West (just east of the 2700 West [Riverton] intersection) and near 4900 South (just south of the 4700 South intersection) |
| South Jordan Canal | Canal | Crosses under Bangerter Highway at 4400 South (between the 4100 South and 4700 South intersections) |
| North Jordan Canal | Canal | Crosses under Bangerter Highway at 3650 South (between the 3500 South and 4100 South intersections) |
| Kearns-Chesterfield Drain | Drain | Is located on the west side of Bangerter Highway between 4700 South and 2900 South. At 2900 South, it crosses Bangerter Highway and continues to the northeast |
| Stonebridge Golf Club Water Features | Ponds, Detention Basins, Ditches | Closest water features are located in the northwest quadrant of the Parkway Boulevard (2700 South) and Bangerter Highway intersection. These ponds, detention basins, and ditches may be considered jurisdictional if they have connectivity to the Great Salt Lake. |
| Riter Canal | Canal | Crosses Bangerter Highway on the north side of Parkway Boulevard (2700 South) |
| Unnamed Pond and Wetland Areas | Open Water and Wetlands | Southwest and southeast quadrants of Bangerter Highway S.R. 201 interchange |

3.3.2.1 No Action Alternative

The No Action Alternative would not affect waters of the United States.

3.3.2.2 Proposed Action Alternative

The Proposed Action Alternative could impact Rose Creek where it crosses under Bangerter Highway at the planned 2700 West (Riverton) interchange. UDOT will obtain a Stream Alteration Permit from the Utah Division of Water Rights and a Nationwide Permit 14 from the USACE, if necessary, for any impacts requiring the relocation of Rose Creek.

The Proposed Action Alternative could impact the Utah and Salt Lake Canal, the Kearns-Chesterfield Drain, the Stonebridge Golf Club water features, the Riter Canal, and the pond/wetland areas near S.R. 201. UDOT will obtain the necessary Section 404 permit from USACE and a Stream Alteration Permit from the Utah Division of Water Rights, if these are considered jurisdictional waters and if a permit is required. UDOT will coordinate with the local municipalities or irrigation districts to obtain any necessary permits and to identify mitigation measures for these waters.

3.3.3 Water Quality

One impaired water, Rose Creek, crosses under Bangerter Highway at the 2700 West (Riverton) intersection. Rose Creek is impaired for *Escherichia coli*. No total maximum daily load assessment has been completed to determine the potential sources of *E. coli*.

3.3.3.1 No Action Alternative

The No Action Alternative would not affect water quality.

3.3.3.2 Proposed Action Alternative

The Proposed Action Alternative could impact Rose Creek where it crosses under Bangerter Highway at the planned 2700 West (Riverton) interchange. Prior to construction, UDOT will work with the Utah Division of Water Quality to determine the status of impairment and to develop approaches to control the *E. coli* pursuant to UDOT's Municipal Separate Storm Sewer System permit. UDOT will also obtain and follow the terms of the UPDES permit(s) during construction to ensure that construction-related sediments or untreated water would not enter surrounding waters (see the environmental commitments in Chapter 4, Environmental Commitments, of this EA).

3.3.4 Existing Vegetation and Noxious Weeds

The existing land uses where the Jordan Aqueduct is adjacent to Bangerter Highway are primarily residential and commercial development. Existing vegetation over the Jordan Aqueduct in these areas is turfgrass and ornamental plantings typically found in an urban environment. The section of the Jordan Aqueduct between 4400 South and 2100 South is currently below the pavement of Bangerter Highway, local roads, or parking lots.

3.3.4.1 No Action Alternative

The No Action Alternative would not affect existing vegetation.

3.3.4.2 Proposed Action Alternative

The Proposed Action Alternative could affect existing vegetation in the residential and commercial areas where the Jordan Aqueduct might need to be relocated. The Proposed Action Alternative could have temporary impacts to existing vegetation in areas where excavation, grading, or staging would occur. The temporary impacts could include removing some existing vegetation before construction. Impacted areas would be treated to control weeds and would be revegetated after construction.

3.3.5 Cultural Resources

Cultural resources are defined as physical or other expressions of human activity or occupation. Section 106 of the National Historic Preservation Act of 1966, as amended, mandates that Reclamation consider the potential effects of a proposed federal undertaking on historic properties. Historic properties are a subset of cultural resources that include prehistoric or historic districts, sites, buildings, structures, or objects that are at least 50 years of age and are included in, or eligible for inclusion in, the National Register of Historic Places. The primary focus of this analysis is the potential effects of the No Action and Proposed Action Alternatives on historic properties.

In compliance with the regulations specified in Section 106 of the National Historic Preservation Act (36 CFR Section 800.16), the affected environment for cultural resources is identified as the area of potential effects (APE). The APE is defined as the geographic area within which federal actions could directly or indirectly cause alterations in the character or use of historic properties. The APE for this Proposed Action includes the area that could be physically affected by any of the proposed project alternatives (the maximum limit of disturbance).

In accordance with 36 CFR Section 800.4, cultural resources within the APE for this Proposed Action will be evaluated for significance in terms of eligibility for the National Register. The significance criteria applied to evaluate cultural resources are defined in 36 CFR Section 60.4 as follows:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

- a. that are associated with events that have made a significant contribution to the broad patterns of our history; or
- b. that are associated with the lives of persons significant in our past; or
- c. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d. that have yielded, or may be likely to yield, information important in prehistory or history.

Reclamation and the Utah State Historic Preservation Officer have appointed UDOT as the lead agency on these projects via an email exchange on December 16, 2021. Therefore, UDOT will be responsible for Section 106 consultation and any adverse effects due to the projects.

UDOT will conduct a Class I literature review and a Class III cultural resources inventory for each Bangerter Highway interchange location to determine whether any eligible cultural resources could be affected by the UDOT projects.

Based on UDOT's initial records review of the Utah State Antiquities database, eligible archaeological and historical structures at the following locations could be affected (Table 3).

Table 3. Cultural Resources That Could Be Affected by the Proposed Action Alternative

| Location | Eligible Archaeology Resources | Eligible Architectural Resources |
|--------------------------------|---|--|
| 2700 West (Riverton) | Utah and Salt Lake Canal, 42SL295 (eligible) | 15 eligible historic properties in study area |
| 9800 South | None | None |
| 4700 South | South Jordan Canal, 42SL291 (eligible); Utah and Salt Lake Canal, 42SL295 (eligible) | 51 eligible historic properties in study area |
| 4100 South | None | 5 potentially historic neighborhoods and 50 potentially eligible historic properties in study area |
| 3500 South | None | 2 potentially historic neighborhoods and 20 potentially eligible historic properties in study area |
| 3100 South | None | 2 potentially historic neighborhoods and 20 potentially eligible historic properties in study area |
| Parkway Boulevard (2700 South) | None | None |
| S.R. 201 (2100 South) | None | One eligible historic property in study area |

Source: Utah State Antiquities Database

3.3.5.1 No Action Alternative

The No Action Alternative would have **no effect** on cultural resources.

3.3.5.2 Proposed Action Alternative

The Proposed Action Alternative could have either **no adverse effect** or an **adverse effect** on individual cultural resources at 2700 West (Riverton), 4700 South, 4100 South, 3500 South, 3100 South, and S.R. 201 or other locations associated with this project. The final determinations of eligibility and findings of effect at each interchange location will be made as part of the UDOT State Environmental Study process once the Class III cultural resources inventory for each Bangerter Highway interchange location and more-detailed design information is available. As the lead agency, UDOT will coordinate with the Utah State Historic Preservation Officer (SHPO) regarding the determinations of eligibility, findings of effect, and mitigation measures for cultural resources that would experience an adverse effect.

3.3.6 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in property held in trust by the United States for Indian tribes or individuals. The Department of the Interior's policy is to recognize and fulfill its legal obligations to identify, protect, and conserve the trust resources of federally recognized Indian tribes and tribal members, and to consult with tribes on a government-to-government basis whenever plans or actions affect tribal trust resources, trust assets, or tribal safety (see the *Departmental Manual*, 512 DM 2). Under this policy, as well as Reclamation's ITA policy, Reclamation is committed to carrying out its activities in a manner that avoids adverse impacts to ITAs when possible, and to mitigate or compensate for such impacts when it cannot. All impacts to ITAs, even those considered nonsignificant, must be discussed in the trust analyses in NEPA compliance documents, and appropriate compensation or mitigation must be implemented.

Trust assets can be real property, physical assets, or intangible property rights such as lands, minerals, hunting and fishing rights, traditional gathering grounds, and water rights. Impacts to ITAs are evaluated by assessing how the proposed action would affect the use and quality of ITAs. Any action that would adversely affect the use, value, quality, or enjoyment of an ITA is considered to have an adverse impact on the resources.

There are no known ITAs in the locations of the planned Bangerter Highway interchanges. Inquiries about ITA concerns will be included in the cultural consultation letters for the proposed Project that will be sent out for the UDOT projects.

3.3.6.1 No Action Alternative

The No Action Alternative would not affect ITAs.

3.3.6.2 Proposed Action Alternative

Reclamation anticipates that the Proposed Action Alternative would have no foreseeable negative impacts on ITAs. UDOT will consult with tribal representatives as part of the UDOT State Environmental Study process for each interchange to identify any potential ITAs.

3.3.7 Socioeconomics and Private Properties

The interchanges associated with the Proposed Action Alternative would be built in Salt Lake County, Utah. Salt Lake County has the largest population in Utah, estimated at 1,185,238 people in 2020 (UDWS 2021b). Salt Lake County has a diverse economy. In 2020, the county's top five employment sectors were trade, transportation, and utilities; professional and business services; government (federal, state, and local); educational and health services; and financial services (UDWS 2021a). The planned interchanges would be built on land that is part of the incorporated jurisdictions of Riverton, South Jordan, Taylorsville, and West Valley City.

The interchanges associated with the Proposed Action Alternative would be built on properties owned by UDOT and on adjacent private residential, commercial, or institutional properties that would be purchased by UDOT before construction.

Residential and commercial properties are located near the planned Bangerter Highway interchanges at 2700 West (Riverton), 9800 South, 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South).

Institutional land uses near the planned interchanges include the following:

- Old Farm Park and Fishing Pond – north of Bangerter Highway near 3000 West
- Elk Ridge Middle School – west side of Bangerter Highway on 9800 South
- Southridge Park – west side of Bangerter Highway near 5100 South
- Life Church - west side of Bangerter Highway on 4700 South
- Bible Baptist Church – east side of Bangerter Highway on 4700 South
- Taylorsville Instacare – west side of Bangerter Highway on 4700 South
- Meeting house for the Church of Jesus Christ of Latter-day Saints – west side of Bangerter on 4100 South
- Granger High School – east of Bangerter Highway near 3500 South
- West Valley Neighborhood Park – west side of Bangerter Highway near 3100 South
- Stonebridge Golf Course – west side of Bangerter Highway between Parkway Boulevard (2700 South) and Lake Park Boulevard

3.3.7.1 *No Action Alternative*

The No Action Alternative would not affect socioeconomics or private properties.

3.3.7.2 *Proposed Action Alternative*

The Proposed Action Alternative would have no effect on the population or general economic conditions of Salt Lake County.

The Proposed Action Alternative could require UDOT to purchase residential, commercial, and institutional property to relocate the Jordan Aqueduct.

UDOT anticipates the following range of impacted parcels at each location (Table 4). These numbers are intended to show a conservative estimate, and include parcels that would have full, partial acquisitions and temporary construction easements.

Table 4. Private Properties That Could Be Affected by the Proposed Action Alternative

| Location | Anticipated Range of Parcel Impacts |
|--------------------------------|-------------------------------------|
| 2700 West (Riverton) | 25–30 |
| 9800 South | 40–45 |
| 4700 South | 95–105 |
| 4100 South | 130–140 |
| 3500 South | 100–110 |
| 3100 South | 60–70 |
| Parkway Boulevard (2700 South) | 75–85 |
| S.R. 201 (2100 South) | 49 |
| Total | 574–634 |

For the interchange areas where the Proposed Action Alternative would require relocating a section of the Jordan Aqueduct (4700 South, 4100 South, 3500 South, and 3100 South), the Jordan Aqueduct relocation would likely occur on parcels acquired by UDOT for the Bangerter Highway interchange projects. UDOT anticipates that most parcels would need to be acquired for the interchange improvements or for both the interchange improvements and the Jordan Aqueduct relocation. Some of the parcels listed in Table 4 above might need to be acquired solely for relocating the Jordan Aqueduct.

Once more-detailed design information is available, UDOT would determine locations of, the level of impacts to (full acquisition or partial acquisition), and the total number of parcels that UDOT would need to purchase at each interchange location. Similarly, UDOT would determine the locations of, and the total number of parcels needed for, the Jordan Aqueduct relocation at 4700 South, 4100 South, 3500 South, and 3100 South as part of the UDOT State Environmental Study process once more-detailed design information is available.

UDOT will provide compensation to impacted property owners, businesses, and tenants pursuant to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the Utah Relocation Assistance Act (Utah Code Annotated Section 57-12-1 et seq.).

3.3.8 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs all federal agencies to develop strategies for considering environmental justice in their programs, policies, and activities. Additionally, the Council on Environmental Quality has issued the *Environmental Justice Guidance under the National Environmental Policy Act (NEPA)* to further assist federal agencies with their procedures under NEPA. Environmental justice is defined as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations of the execution of federal, state, local, and tribal programs and policies.

Table 5 lists demographic information for each interchange area and Salt Lake County. The information for each interchange area is summarized by the adjacent block groups and compared to county information to identify locations with higher percentages of minority or low-income populations. As shown in Table 5, the 2700 West (Riverton) and 9800 South interchange areas have similar or lower percentages of minority populations compared to the Salt Lake County percentages. 2700 West (Riverton) and 9800 South also have lower percentages of residents living in poverty compared to the Salt Lake County percentages. The 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South) interchange areas have higher percentages of minority populations compared to the Salt Lake County percentages. The 4700 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South) interchange areas have percentages of residents living in poverty that are slightly higher than the Salt Lake County percentages. Overall, the 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South) interchange areas have higher percentages of minority populations and/or residents living in poverty compared to the Salt Lake County percentages.

Table 5. Demographics of Interchange Areas, Salt Lake County, and Utah

| Demographic Information | 2700 West | 9800 South | 4700 South | 4100 South | 3500 South | 3100 South | Pkwy Blvd | S.R. 201 | Salt Lake County ^a |
|--|---------------------|--------------------|---------------------|---------------------|----------------------|----------------------|----------------------|----------------------|-------------------------------|
| Total population | 2,747 | 2,436 | 4,814 | 4,802 | 5,294 | 3,024 | 1,112 | 23 | 1,185,238 |
| White alone ^b | 2,451 89.2% | 2,119 87.0% | 2,310 48.0% | 2,498 52.0% | 2,330 44.0% | 1,395 46.1% | 474 42.6% | 5 21.7% | 1,032,342 (87.1%) |
| Black or African American alone ^b | 5 0.2% | 9 0.4% | 99 2.1% | 99 2.1% | 158 3.0% | 54 1.8% | 19 1.7% | 5 21.7% | 26,075 (2.2%) |
| American Indian or Alaska Native alone ^b | 7 0.3% | 6 0.2% | 85 1.8% | 99 2.1% | 91 1.7% | 34 1.1% | 8 0.7% | 1 4.3% | 16,593 (1.4%) |
| Asian alone ^b | 35 1.3% | 85 3.5% | 127 2.6% | 174 3.6% | 376 7.1% | 273 9.0% | 140 12.6% | 0 0% | 54,521 (4.6%) |
| Native Hawaiian or other Pacific Islander alone ^b | 7 0.3% | 41 1.7% | 358 7.4% | 312 6.5% | 376 7.1% | 176 5.8% | 50 4.5% | 2 8.7% | 21,334 (1.8%) |
| Hispanic ^b | 214 7.8% | 164 6.7% | 1,925 40.0% | 1,803 37.5% | 2,208 41.7% | 1,252 41.4% | 433 38.9% | 12 52.2% | 222,825 (18.8%) |
| Two or more races ^b | 81 2.9% | 54 2.2% | 1,158 24.1% | 1,002 20.9% | 1,323 25.0% | 767 25.4% | 283 25.4% | 1 4.3% | 34,372 (2.9%) |
| Total population in poverty^c | 10 0.52% | 12 1.3% | 286 9.6% | 213 8.1% | 466 16.6% | 279 11.8% | 237 13.4% | 165 12.8% | 102,587 (9.0%) |

Sources:

^a 2020 Census population data for Salt Lake County (U.S. Census Bureau 2021a)

^b Race and ethnicity data for the interchange locations use census block groups adjacent to the interchanges. This data is 2020 Census data (U.S. Census Bureau 2021b).

^c Poverty data for the interchange locations use American Community Survey data for census block groups adjacent to the interchanges. This data is 2019 census data, and the percentages represent percentage of 2019 population (U.S. Census Bureau 2020).

3.3.8.1 No Action Alternative

The No Action Alternative would have no substantial negative effect on minority or low-income populations.

3.3.8.2 Proposed Action Alternative

The Proposed Action Alternative could benefit the surrounding communities, including the low-income and minority communities, because transportation capacity and operations would be improved in the Bangerter Highway corridor.

As described in Section 3.3.7.2, Proposed Action Alternative, of this EA, the Proposed Action Alternative would require UDOT to purchase residential, commercial, and institutional property to relocate the Jordan Aqueduct. UDOT anticipates that most parcels would need to be acquired for the interchange improvements or for both the interchange improvements and the Jordan Aqueduct relocation. Some of the parcels listed in Table 4 above might need to be acquired solely for relocating the Jordan Aqueduct. Some of the impacted properties could be owned or leased by low-income or minority residents. Any property impacts caused by the Proposed Action Alternative would occur because the properties are close to Bangerter Highway and the Jordan Aqueduct. No property impacts would be caused on the basis of income, race, or ethnicity. In the areas with low-income and/or minority communities (the 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard [2700 South], and S.R. 201 [2100 South] interchange areas), the demographic data is the same on both sides of Bangerter Highway. There are no alternatives that would avoid all impacts from constructing the interchanges or relocating the Jordan Aqueduct to properties that are potentially owned by low-income and/or minority individuals. Similarly, because the demographic data is the same on both sides of Bangerter Highway, there are no locations where impacts to potential low-income or minority properties could be avoided by impacting high-income or non-minority properties.

Any impacts to properties owned or leased by low-income or minority residents will be mitigated by UDOT providing compensation to impacted property owners pursuant to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the Utah Relocation Assistance Act (Utah Code Annotated Section 57-12-1 et seq.). The mitigation for property impacts is proportionate and the same regardless of income, race, or ethnicity status.

Project funding would not target or disproportionately affect disadvantaged races, ethnicities, or communities of lower economic status. Inconveniences during construction would be experienced equally by all travelers on Bangerter Highway and the local roads that cross the highway with the Proposed Action Alternative. For the reasons described, the Proposed Action Alternative would not disproportionately (unequally) affect any low-income or minority communities.

3.3.9 Recreation Resources

The following recreation resources are located near the Bangerter Highway interchanges project areas.

- Old Farm Park and Fishing Pond – north of Bangerter Highway near 3000 West
- Southridge Park – west side of Bangerter Highway near 5100 South
- West Valley Neighborhood Park – west side of Bangerter Highway near 3100 South
- Stonebridge Golf Course – west side of Bangerter Highway between Parkway Boulevard (2700 South) and Lake Park Boulevard

3.3.9.1 No Action Alternative

The No Action Alternative would not affect recreation resources.

3.3.9.2 Proposed Action Alternative

Reclamation does not anticipate that the Proposed Action Alternative would affect the Old Farm Park and Fishing Pond or Southridge Park.

The Proposed Action Alternative could affect the West Valley Neighborhood Park at 3100 South and Stonebridge Golf Course. If these resources are affected by the Proposed Action Alternative, UDOT will work with West Valley City to identify mitigation measures that maintain or enhance the recreational amenities of these recreation resources.

3.3.10 Health, Safety, Air Quality, and Noise

The interchanges associated with the Proposed Action Alternative would be located in a developed urban area. Because the existing Jordan Aqueduct is in a buried pipe, the current operations of the aqueduct have no effect on health, safety, air quality, or noise in the surrounding communities.

Information from the Utah Division of Environmental Response and Remediation and Environmental Protection Agency identified the following potential hazardous material sites that could be affected by the Proposed Action Alternative (Table 6).

Table 6. Hazardous Material Sites

| Location | Site | Site Type |
|--------------------------------|---|--------------------------|
| 9800 South | Walmart Neighborhood Market | Used oil facility |
| 4700 South | 4700 South and Bangerter Plume | CERCLA site |
| 4700 South | Smith's Food and Drug | Underground storage tank |
| 4100 South | Verizon Wireless | Tier II facility |
| 3500 South | Miniature Market Express | Underground storage tank |
| 3500 South | Harmons | Underground storage tank |
| 3100 South | Granger Hunter Improvement | Underground storage tank |
| Parkway Boulevard (2700 South) | L-3 Communications | Tier II facility |
| Parkway Boulevard (2700 South) | John Evans Company | Used oil facility |
| Parkway Boulevard (2700 South) | USANA, Inc. | Used oil facility |
| S.R. 201 (2100 South) | GTE Business Communications Systems, Inc. | CERCLA site |
| S.R. 201 (2100 South) | Norco Salt Lake City | Tier II facility |
| S.R. 201 (2100 South) | Wind River Petroleum | Underground storage tank |
| S.R. 201 (2100 South) | BFI of Utah, Inc. | Used oil facility |
| S.R. 201 (2100 South) | Laundry Supply Company | Used oil facility |
| S.R. 201 (2100 South) | Naranjo Brothers Trucking | Used oil facility |
| S.R. 201 (2100 South) | Pilkington Metal Finishing, LLC | Toxic Release Inventory |

3.3.10.1 No Action Alternative

The No Action Alternative would not affect health, safety, air quality, or noise.

3.3.10.2 Proposed Action Alternative

The Proposed Action Alternative could have short-term effects on noise and air quality during construction. Heavy equipment and truck traffic could temporarily increase noise levels at 4700 South, 4100 South, 3500 South, and 3100 South while the new pipelines are being installed.

Air quality could temporarily be reduced during relocation and installation of the pipeline. Fugitive dust could increase during pipeline relocation and installation at 4700 South, 4100 South, 3500 South, and 3100 South; however, dust-suppressing measures would be used to help reduce any short-term impacts. The selected contractor will prepare and follow a fugitive dust emission control plan in accordance with the Air Quality Permit from the Utah Division of Air Quality. Management of hazardous substances such as fuels or oils will be described in the stormwater pollution prevention plan (SWPPP) required for the UPDES permit.

The Proposed Action Alternative could affect sites with hazardous materials at 9800 South, 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South). If these sites are affected by the Proposed Action Alternative, UDOT will work with the Utah Division of Environmental Response and Remediation and the property owners to identify mitigation or remediation measures. If hazardous materials are discovered during construction, UDOT or the construction contractor will contact the Utah Division of Environmental Response and Remediation.

3.3.11 Access and Transportation

The major existing arterial roads that could be affected by the Proposed Action Alternative are Bangerter Highway and the cross streets planned for new interchanges (2700 West [Riverton], 9800 South, 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard [2700 South], and S.R. 201 [2100 South]). After the Proposed Action Alternative is implemented, the planned UDOT Bangerter Highway interchanges would be freeway facilities. UDOT owns the underlying property for Bangerter Highway, 4700 South, 3500 South, and S.R. 201 and is responsible for operations and maintenance on those facilities. The Cities own the right of way for 2700 West, 9800 South, 4100 South, 3100 South, and Parkway Boulevard (2700 South) and are responsible for operations and maintenance on those facilities.

3.3.11.1 No Action Alternative

The No Action Alternative could have an adverse effect on access and transportation. Without mitigation measures, Reclamation would not approve UDOT's impacts to the Jordan Aqueduct, and UDOT would be required to modify the Bangerter Highway interchanges to avoid impacts to the aqueduct. If the Bangerter Highway interchanges were not constructed, the access and transportation benefits from the Bangerter Highway interchange projects would not occur.

3.3.11.2 Proposed Action Alternative

The Proposed Action Alternative could cause short-term impacts to access and transportation during the relocation of the Jordan Aqueduct anticipated at 4700 South, 4100 South, 3500 South, and 3100 South. Short-term impacts could include lane closures and travel delays on both these cross streets and Bangerter Highway in the areas where the new pipeline would be installed underneath the roads.

The Proposed Action Alternative could have long-term benefits to access and transportation by allowing the construction of the Bangerter Highway interchanges. After the planned interchanges are built, Bangerter Highway would be a freeway facility and would provide improved capacity for the traveling public. The Bangerter Highway interchange projects would also improve transportation capacity on the cross streets at each of the interchange locations.

For the Proposed Action Alternative, UDOT would coordinate with and obtain permits from the local municipalities for any lane closures needed on City-owned roads during construction.

3.3.12 Visual Resources

This section evaluates the extent to which the Proposed Action Alternative could change the visual character and quality of the environment. The interchanges associated with the Proposed Action Alternative would be located in an area that includes primarily residential and commercial land uses. Bangerter Highway in these areas is currently an at-grade arterial.

3.3.12.1 No Action Alternative

The No Action Alternative would not affect visual resources.

3.3.12.2 Proposed Action Alternative

The Proposed Action Alternative could have short-term visual impacts during construction in areas where the Jordan Aqueduct is relocated if the new pipeline is installed using an open-trench technique. Once construction is complete, there would be no permanent adverse impacts to visual resources because UDOT would install a buried pipe and the overburden would be revegetated.

3.3.13 Combined Effects

In addition to Proposed Action-specific impacts, Reclamation analyzed the potential for significant combined impacts to resources that could be affected by the Proposed Action and by other past, present, and reasonably foreseeable activities in the Bangerter Highway corridor.

This section focuses on whether the Proposed Action, considered together with any known or reasonably foreseeable actions by Reclamation, other federal or state agencies, or some other entity, could combine to cause an effect. There is no defined area for analyzing cumulative effects.

Once the Proposed Action Alternative is implemented, UDOT does not have any additional planned projects on Bangerter Highway in the Wasatch Front Regional Council's 2050 Long-Range Transportation Plan. There are no other foreseeable future actions that could affect the Jordan Aqueduct near the planned Bangerter Highway interchanges. The Bangerter Highway corridor is already developed. Some existing land uses might redevelop in the future, but this would depend on the actions of private property owners, which are unknown at this time.

Once the Proposed Action Alternative is implemented, the combined effects of the maintenance and repair activities on the Jordan Aqueduct system, including the pipeline, turnouts, and appurtenances, would be infrequent and short-term. Any maintenance activities would occur in previously disturbed areas. Reclamation does not anticipate that the impacts of the Proposed Action, when combined with the impacts of other reasonably foreseeable future actions, would increase or decrease the potential for prospective land redevelopment.

Therefore, based on the resource specialists' review of the Proposed Action, Reclamation has determined that the Proposed Action would not have a significant effect on any resource when considered together with other past, present, or reasonably foreseeable projects.

3.4 Summary of Environmental Effects

Table 7 summarizes the environmental effects of the No Action and Proposed Action Alternatives.

Table 7. Summary of Environmental Effects

| Resource | No Action Alternative | Proposed Action Alternative |
|---------------------------------------|-----------------------|--|
| Hydrology | No effect | No effect |
| Floodplains | No effect | No effect |
| Geology and soils | No effect | No effect |
| Paleontological resources | No effect | No effect |
| Threatened or endangered species | No effect | No effect |
| Wildlife resources | No effect | No effect |
| Riparian areas | No effect | No effect |
| Wilderness and wild and scenic rivers | No effect | No effect |
| Prime and unique farmland | No effect | No effect |
| Water rights | No effect | No effect |
| System operations | No effect | The Proposed Action Alternative would construct the new Jordan Aqueduct protection measures or relocate the sections of the Jordan Aqueduct before construction of the planned Bangerter Highway interchanges. With these proposed mitigation measures, there would be no effect on system operations. The Proposed Action Alternative would maintain the existing operations of the Jordan Aqueduct in equal or better condition compared to existing conditions. |
| Waters of the United States | No effect | The Proposed Action Alternative could affect waters of the United States at 2700 West (Riverton), 4700 South, 4100 South, 3500 South, 3100 South, Parkway Boulevard (2700 South), and S.R. 201 (2100 South). UDOT would obtain a Section 404 (Clean Water Act) permit, stream alteration permit, and other applicable permits from local officials and irrigation districts as needed. |

| Resource | No Action Alternative | Proposed Action Alternative |
|---------------------------------------|-----------------------|--|
| Water quality | No effect | The Proposed Action Alternative could affect Rose Creek, an impaired water, at 2700 West (Riverton). UDOT will work with the Utah Division of Water Quality to determine the status of impairment and to develop approaches to control <i>E. coli</i> pursuant to UDOT's Municipal Separate Storm Sewer System permit. |
| Existing vegetation and noxious weeds | No effect | The Proposed Action Alternative could have temporary impacts to existing vegetation in areas where excavation, grading, or staging would occur. |
| Cultural resources | No effect | The Proposed Action Alternative could have either no adverse effect or an adverse effect on individual cultural resources at 2700 West (Riverton), 4700 South, 4100 South, 3500 South, 3100 South, and S.R. 201. UDOT will consult with the Utah SHPO regarding the determinations of eligibility, findings of effect, and mitigation measures for cultural resources that would experience an adverse effect. |
| Indian Trust Assets | No effect | There are no known ITAs in the project areas. No foreseeable negative effects are anticipated. |
| Socioeconomics and private properties | No effect | Reclamation anticipates that the Proposed Action Alternative could require UDOT to purchase privately owned residential, commercial, and institutional properties. |
| Environmental Justice | No effect | No disproportionate effects on low-income or minority populations are anticipated. |
| Recreation resources | No effect | The Proposed Action Alternative could affect the West Valley Neighborhood Park and Stonebridge Golf Course. If these resources are affected, UDOT will work with West Valley City to identify mitigation measures that maintain or enhance these recreation resources. |

| Resource | No Action Alternative | Proposed Action Alternative |
|--|--|---|
| Health, safety, air quality, and noise | No effect | <p>The Proposed Action Alternative could cause short-term effects on air quality and noise during construction.</p> <p>The Proposed Action Alternative could affect sites with hazardous materials. If these sites are affected by the Proposed Action Alternative, UDOT will work with the Utah Division of Environmental Response and Remediation and the property owners to identify mitigation or remediation measures.</p> |
| Access and transportation | An adverse effect could occur because Reclamation would not approve UDOT's impacts to the Jordan Aqueduct, and UDOT would be required to modify the Bangerter Highway interchange projects to avoid impacts to the aqueduct. | <p>The Proposed Action Alternative could cause short-term impacts to access and transportation during the relocation of the Jordan Aqueduct anticipated at 4700 South, 4100 South, 3500 South, and 3100 South.</p> <p>The Proposed Action Alternative could have long-term benefits to access and transportation by allowing the construction of the Bangerter Highway interchanges.</p> |
| Visual resources | No effect | The Proposed Action Alternative could have short-term visual impacts during construction in areas where the Jordan Aqueduct is relocated if the new pipeline is installed using an open-trench technique. |

4 Environmental Commitments

This section of the EA presents the environmental commitments applicable to implementing either the Proposed Action or the No Action Alternative. The environmental commitments are designed to minimize or avoid adverse effects of the Proposed Action on a resource area, and to implement environmental plans and best management practices (BMPs). Reclamation is committed to ensuring that the following environmental commitments are integrated into the Proposed Action.

4.1 System Operations

Impacts to system operations are considered significant if operations of the Jordan Aqueduct could not be maintained in an equal or higher manner compared to existing operations. To ensure that the Proposed Action produces less-than-significant system operation impacts, Reclamation shall ensure that:

- Either protection-in-place measures are provided for the Jordan Aqueduct or the Jordan Aqueduct is relocated prior to constructing the Bangerter Highway interchanges.
- The Jordan Aqueduct is protected or relocated, and operational, before UDOT's Bangerter Highway interchange projects could have any impacts to the existing Jordan Aqueduct.
- The relocated Jordan Aqueduct will carry the same hydraulic capacity and will continue to deliver water to all existing laterals and turnouts. The relocated Jordan Aqueduct will be designed to carry a similar or higher capacity of water as the existing aqueduct. All turnouts from the Jordan Aqueduct will be relocated and would continue to function.
- Protective measures are installed or other impacted Reclamation facilities (for example, gates, valves, and turnouts) are relocated before the Bangerter Highway interchanges are constructed.
- Reclamation, UDOT, and JWCD will complete Project Agreements to document the proposed protect-in-place and/or relocation of the Jordan Aqueduct pipeline and easement, the crossings of the other Reclamation facilities, and all applicable mitigation measures that must be followed as part of UDOT's proposed project. UDOT and JWCD and their contractors will follow all of the mitigation measures described in the final Project Agreement.

4.2 Waters of the United States

Impacts to waters of the United States are considered significant if an action substantially alters the existing drainage pattern or affects normal river operations or the availability of water. Reclamation shall ensure that:

- If a Clean Water Act Section 404 permit(s) is (are) necessary, UDOT obtains the Section 404 permit, and the contractor follows all general and special permit conditions included in the Section 404 permit. Impacts to wetlands and waters would not occur outside areas included in the Section 404 permit.

4.3 Water Quality

Impacts to water quality are considered significant if an action would violate any water quality or waste discharge standards. Reclamation shall ensure that:

- UDOT and JWCD obtain a UPDES permit from the State of Utah before any discharges of water occur, if such water is to be discharged as a point source into a regulated water body. UDOT and JWCD will take appropriate measures to ensure that construction-related sediments will not enter any streams or other water bodies during or after construction. UDOT and JWCD will construct settlement ponds and intercepting ditches for capturing sediments, and UDOT and JWCD will haul the sediment and other contents collected off the site for appropriate disposal after the Proposed Action is completed.
- A Storm Water Pollution Prevention Plan (SWPPP) is completed by UDOT during design and advertisement and is provided to the project-awarded contractor.

4.4 Existing Vegetation and Noxious Weeds

Impacts to existing vegetation and noxious weeds are considered significant if the spread of noxious weeds could not be controlled. To ensure that the Proposed Action produces less-than-significant impacts to existing vegetation and noxious weeds, Reclamation shall ensure that:

- Impacted areas are treated to control weeds and are revegetated after construction.
- The contractor complies with UDOT Special Provision Section 02924S, *Noxious Weed Control*, requirements before construction by cleaning all earthmoving construction equipment before mobilizing onto the project site and avoiding unnecessary earth disturbance.

4.5 Cultural Resources

Impacts to cultural resources are considered significant if a resource is physically damaged, altered, or isolated from the context considered significant. To avoid potential impacts to cultural resources, Reclamation shall ensure that:

- If any cultural resources, either on the surface or in the subsurface, are discovered during construction, UDOT and JWCD will notify Reclamation's Provo Area Office archaeologist, and construction in the area of the inadvertent discovery will stop until a professional archaeologist can assess the resource and make recommendations for further work. Reporting the discovery of cultural resources is also required by UDOT Standard Specification 01355, *Environmental Compliance*.
- If a person knows or has reason to know that she or he has inadvertently discovered possible human remains on federal land, she or he must immediately notify Reclamation's Provo Area Office archaeologist by telephone about the discovery. Work will stop until the proper authorities are able to assess the situation on site. This action will promptly be followed by written confirmation from UDOT and JWCD to the responsible federal agency official with respect to federal land. UDOT and JWCD will promptly notify the Utah SHPO and interested Native American tribal representatives. Consultation will begin

immediately. This requirement is prescribed under the Native American Graves Protection and Repatriation Act (43 CFR Part 10) and the Archaeological Resources Protection Act of 1979 (16 USC Section 470). Reporting the discovery of cultural resources is also required by UDOT Standard Specification 01355, *Environmental Compliance*.

- If vertebrate fossils are encountered by UDOT or its contractor during ground-disturbing actions, construction will be suspended until UDOT and JWCD can contact the Reclamation Provo Area Office archaeologist and a qualified paleontologist can assess the find. Reporting the discovery of paleontological resources is also required by UDOT Standard Specification 01355, *Environmental Compliance*.

4.6 Indian Trust Assets

Reclamation anticipates that the Proposed Action Alternative would have no foreseeable negative impacts on ITAs. Impacts to ITAs are considered significant if an ITA is physically damaged, altered, or isolated from the context considered significant. To avoid potential impacts to ITAs, Reclamation shall ensure that:

- UDOT will consult with tribal representatives as part of the UDOT State Environmental Study process for each interchange to identify any potential ITAs. If any ITAs, either on the surface or in the subsurface, are discovered during construction, UDOT and JWCD will notify Reclamation's Provo Area Office archaeologist, and construction in the area of the inadvertent discovery will stop until a professional archaeologist can assess the resource and make recommendations for further work. Reporting the discovery of cultural resources is also required by UDOT Standard Specification 01355, *Environmental Compliance*.

4.7 Socioeconomics and Private Properties

Impacts to socioeconomics and private properties are considered significant if there would be substantial changes in employment or population growth or if just compensation could not be provided to impacted private property owners. To ensure that the Proposed Action produces less-than-significant system operation impacts, Reclamation shall ensure that:

- For any impacted property, UDOT provides compensation to the impacted property owners pursuant to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the Utah Relocation Assistance Act (Utah Code Annotated Section 57-12-1 et seq.).

4.8 Environmental Justice

The Proposed Action would not result in adverse environmental justice impacts by disproportionately affecting the human health or environment of minority and/or low-income populations.

- Any impacts to properties owned or leased by low-income or minority residents will be mitigated by UDOT providing compensation to impacted property owners pursuant to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the Utah Relocation Assistance Act (Utah Code Annotated Section 57-12-1 et seq.). The mitigation for property impacts is the same regardless of income, race, or ethnicity status.

4.9 Recreation Resources

Impacts to recreation resources are considered significant if recreational use of the resource with the Proposed Action could not be maintained in an equal or higher manner compared to existing operations. To ensure that the Proposed Action produces less-than-significant system recreational resource impacts, Reclamation shall ensure that:

- UDOT works with the Cities or agencies with jurisdiction for the recreational resources to identify mitigation measures that maintain or enhance the recreational amenities of the affected recreation resources.

4.10 Health, Safety, Air Quality, and Noise

Impacts to health, safety, air quality, and noise are considered significant if health, safety, air quality, or noise standards are violated. To ensure that the Proposed Action produces less-than-significant health, safety, air quality, and noise impacts, Reclamation shall ensure that:

- If hazardous material sites are affected by the Proposed Action Alternative, UDOT works with the Utah Division of Environmental Response and Remediation and the property owners to identify mitigation or remediation measures. If hazardous materials are discovered during construction, UDOT or the construction contractor will contact the Utah Division of Environmental Response and Remediation and follow UDOT 2022 Standard Specification 01355 regarding the treatment and disposal of hazardous materials.
- The selected contractor prepares and follows a fugitive dust emission control plan in accordance with the Air Quality Permit from the Utah Division of Air Quality. The Utah Division of Air Quality regulates fugitive dust from construction sites and requires compliance with rules for sites disturbing greater than 0.25 acre. Utah Administrative Code Rule R307-205-5 requires that steps be taken by UDOT and JWCD to minimize fugitive dust from construction activities. Sensitive receptors include those individuals working at the site or motorists who could be affected by changes in air quality due to emissions from construction activities.
- The contractor follows the UDOT 2017 Special Provision, Section 00555M, *Prosecution and Progress*. The contractor will be required to conform to these specifications to reduce the impact of construction noise on the surrounding community.

4.11 Access and Transportation

Impacts to access and transportation are considered significant if transportation access could not be maintained for all traffic movements during construction. To ensure that the Proposed Action produces less-than-significant access and transportation impacts, Reclamation shall ensure that:

- UDOT clearly notifies the public of delays or detours during construction.
- UDOT coordinates with and obtains permits from the local municipalities for any lane closures needed on city-owned roads during construction.

4.12 Visual Resources

Impacts to visual resources are considered significant if the Proposed Action has an adverse effect on a view, substantially damages scenic resources, or degrades the existing visual quality (or character) of the site and its surroundings. To ensure that impacts to visual resources are minimized, Reclamation shall ensure that:

- All disturbed areas are reclaimed per UDOT standard specifications.

5 Consultation and Coordination

Reclamation, in collaboration with UDOT, notified owners of property near the planned interchanges, as well as interested state and federal agencies, of the Draft Programmatic EA. Reclamation provided a 30-day comment period to the public and government agencies to review and provide comment on the Draft Programmatic EA. The 30-day comment period ended on February 28, 2022. No comments were received during the comment period.

UDOT initiated agency and public involvement activities for the current phase of the Bangerter Highway interchange projects in the summer of 2021. Public involvement activities for each of the Bangerter Highway interchange projects will include public and agency scoping meetings, meetings with directly impacted property owners, meetings with Cities and other resource agencies, and formal public hearings for the Draft State Environmental Studies.

Reclamation will review and use the public and agency comments provided as part of the UDOT State Environmental Study processes as part of this Programmatic EA and when considering future work authorized under this Programmatic EA.

Native American consultation and Section 106 consultation will be conducted by UDOT during each State Environmental Study process. Reclamation will use the Native American consultation and Section 106 consultation provided as part of the UDOT State Environmental Study processes as part of this Programmatic EA and when considering future work authorized under this Programmatic EA.

6 List of Preparers

| | | |
|------------------|------------------------------------|------------------------------|
| Jared Baxter | NEPA Specialist, Provo Area Office | U.S. Bureau of Reclamation |
| Zachary Nelson | Archaeologist, UCB Regional Office | U.S. Bureau of Reclamation |
| Kevin Kilpatrick | Environmental Planner | HDR, Inc. |
| Sarah Rigard | Environmental Planner | HDR, Inc. |
| Cristina Nelson | Water Resources Engineer | Bowen Collins and Associates |
| Jason Luettinger | Water Resources Engineer | Bowen Collins and Associates |
| Bill Pope | Water Resources Engineer | HDR, Inc. |
| Haylie Ferguson | Cultural Resources Specialist | Horrocks Engineers |
| Amy Croft | Ecologist/Biologist | HDR, Inc. |
| Terry Warner | Water Quality Specialist | HDR, Inc. |
| Andrea Clayton | Environmental Planner | HDR, Inc. |
| Carrie Ulrich | Technical Editor | HDR, Inc. |
| Mark Bedke | Transportation Engineer | HDR, Inc. |
| Justin Beddoes | Transportation Engineer | Horrocks Engineers |
| Brian Allen | Project Manager | UDOT |
| Tyler Allen | Environmental Manager | UDOT |
| Naomi Kisen | Environmental Program Manager | UDOT |

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8 Appendix

8.1 Jordan Aqueduct Protection Criteria

EXHIBIT "A"

ENCROACHMENT GUIDELINES FOR JORDAN AQUEDUCT, REACH 1, 2, 3 & 4

PROTECTION CRITERIA

- A. Surface structures that generally will be allowed to be constructed within United States rights-of-way include asphalt roadways, with no utilities within roadway, non reinforced parking lots, curbs, gutters and sidewalks, walkways, driveways. However, where United States system pipe has specific maximum and minimum cover designation the special requirements for roadways, parking lots and driveways crossing over the pipe shall be obtained from the United States for the maximum allowable external loading or minimum cover. **HOWEVER, IT IS UNDERSTOOD THAT ALL SURFACE STRUCTURES SHALL BE ANALYZED AND CONSIDERED ON AN INDIVIDUAL BASIS.**
- B. Structures that may not be constructed in, on, or along United States rights-of-way include but are not limited to, permanent structures such as retaining walls, block walls, buildings, garages, decks, carports, mobile homes with permanent foundations, swimming pools, block, cement, fences, or rock fences and walls as designated by the United States.
- C. No trees or vines will be allowed within the rights-of-way of the United States.
- D. All temporary or permanent changes in ground surfaces within United States rights-of-way are to be considered to be encroaching structures and must be handled as such. Earthfills and cuts on adjacent property shall not encroach onto United States rights-of-way without prior approval by the United States.
- E. Existing gravity drainage of the United States rights-of-way must be maintained. No new concentration of surface or subsurface drainage may be directed onto or under the United States rights-of-way without adequate provision for removal of drainage water or adequate protection of the United States rights-of-way.
- F. Prior to construction of any structure that encroaches within United States rights-of-way, an excavation must be made to determine the location of existing United States facilities. The excavation must be made by or in the presence of water users or the United States.
- G. Any contractor or individual constructing improvements in, on, or along United States rights-of-way must limit his construction to the encroaching structure previously approved and construct the improvements strictly in accordance with plans or specifications.
- H. The ground surfaces within United States rights-of-way must be restored to a condition equal to that which existed before the encroachment work began or as shown on the approved plans or specifications.
- I. The owner of newly constructed facilities that encroach on United States rights-of-way shall notify the United States and/or the District upon completion of construction and shall provide the

District with one copy and the United States with two copies of as-built drawings showing actual improvements in, on, or along the rights-of-way.

J. Except in case of ordinary maintenance and emergency repairs, an owner of encroaching facilities shall give the District at least 10 days notice in writing before entering upon United States rights-of-way for the purpose of reconstructing, repairing, or removing the encroaching structure or performing any work on or in connection with the operation of the encroaching structure.

K. If unusual conditions are proposed for the encroaching structure or unusual field conditions within United States rights-of-way are encountered, the United States reserves the right to impose more stringent criteria than those prescribed herein.

L. All backfill material within United States rights-of-way shall be compacted to 90 percent of maximum density unless otherwise shown. Mechanical compaction shall not be allowed within 6 inches of the projects works whenever possible. In no case will mechanical compaction using heavy equipment be allowed over the project works or within 18 inches horizontally of the projects works.

M. That the backfilling of any excavation or around any structure within the United States rights-of-way shall be compacted in layers not exceeding 6 inches thick to the following requirements: (1) cohesive soils to 90 percent maximum density specified by ASTM Part 19, D-698, method A; (2) noncohesive soils to 70 percent relative density specified by ANSI/ASTM Part 19, d-2049, par. 7.1.2, wet method.

N. Any nonmetallic encroaching structure below ground level shall be accompanied with a metallic strip within the United States rights-of-way.

O. Owners of encroaching facilities shall notify the United States at (801) 379-1000 and/or the District at (801) 565-4300 at least forty-eight (48) hours in advance of commencing construction to permit inspection by the United States and/or the District.

P. No use of United States lands or rights-of-way shall be permitted that involve the storage of hazardous material.