U.S. Department of Transportation
FEDERAL HIGHWAY ADMINISTRATION

FINDING OF NO SIGNIFICANT IMPACT

for

I-15, MP 0 TO MP 16

Washington County, Utah
Project No.: F-I15-1(86)0 PIN: 7843

1.0 STUDY AREA

The Federal Highway Administration (FHWA) and the Utah Department of Transportation (UDOT) propose to make transportation improvements to meet the 2040 travel demand on Interstate 15 (I-15) between mileposts (MP) 0 and 16, a distance of approximately 16 miles. The study area is located within Washington County, Utah and runs through the cities of St. George, Washington, and Hurricane.

2.0 PURPOSE AND NEED (Chapter 1 of the EA)

The purpose of the Proposed Action is to address the projected 2040 travel demand on the I-15 corridor between MP 0 and MP 16.

The project is needed because the I-15 corridor between MP 0 and MP 16 lacks the capacity for 2040 future travel demand. The projected travel demand will increase congestion on I-15 between MP 0 and MP 16. The increasing congestion will be a result of:

- **Population growth:** According to the U.S. Census Bureau, Washington County was the fastest growing county in Utah between 2000 and 2009, and was 26th in the nation between 2000 and 2009. Washington County grew from 90,354 residents in 2000 (U.S. Census) to an estimated 162,544 in 2010 (Five County Association of Governments). Projections forecast that by 2040, Washington County will have 472,355 residents (Five County Association of Governments).
- **Traffic volume growth:** In 2040, if no roadway improvements (other than routine maintenance) are constructed, traffic volumes will range from 41,000 vehicles per day (vpd) to 123,000 vpd. The majority of the I-15 corridor between MP 0 and MP 16 will be severely congested and operate at Level-of-Service (LOS) F.
- **High volumes of freight traffic:** The volume of trucks on a freeway affects the capacity of the roadway because trucks take up more available capacity than an equivalent number of cars. Large percentages of truck volumes on a freeway can cause congestion. By 2040, PM peak truck volumes will range between 510 and 870 vehicles/hour.

3.0 SELECTED ALTERNATIVE

The Selected Alternative (selected by FHWA and UDOT) consists of the following improvements:

- Constructing one additional general purpose lane on I-15 in both the northbound and southbound directions between Southern Parkway and SR-9

- Constructing auxiliary lanes between the Port-of-Entry and Southern Parkway, between Brigham Road and Dixie Drive, and between Washington Parkway and SR-9
- Removing the existing roundabouts and constructing a Single Point Interchange (SPI) at the Brigham Road Interchange
- Replacing the I-15 bridges over the Virgin River
- Converting the existing diamond interchange to a diverging diamond interchange (DDI) at the St. George Boulevard Interchange
- Constructing an I-15 overpass at Mall Drive
- Re-configuring the Red Hills Parkway/Green Springs Drive intersection to a thru-turn configuration
- Improving the SR-9 Interchange by improving the southbound exit deceleration coming into the loop ramp, upgrading the loop ramp geometry, creating a three lane exit ramp northbound, creating a two lane entrance ramp southbound, and creating additional lanes on SR-9 between the I-15 Interchange and the Coral Canyon Interchange.

4.0 ALTERNATIVES CONSIDERED (Chapter 2 of the EA)

The lead agencies developed and evaluated a wide range of alternatives. During preliminary alternatives development, several alternatives were considered but eliminated for a failure to meet the project's Purpose and Need. These alternatives included:

- **Transportation System Management/Transportation Demand Management (TSM/TDM) Alternative:** The TSM/TDM Alternative includes activities that are intended to improve traffic flow and provide limited capacity improvement without building new travel lanes. The TSM/TDM Alternative would only provide modest improvements to the operation of the overall system. The TSM/TDM Alternative would not meet the Purpose and Need of the project because it would not provide LOS D or better for the I-15 mainline corridor between MP 0 and MP 16 in 2040.
- **Transit Alternative:** The Dixie Metropolitan Planning Organization (DMPO) regional travel demand model shows that transit only accounts for about two percent of the total travel within the study area. Therefore, any improvements that could be made, beyond what is already planned, would have very little effect on overall traffic volumes and congestion in the area. The Transit Alternative would not meet the Purpose and Need of the project because it would not provide LOS D or better for the I-15 mainline corridor between MP 0 and MP 16 in 2040.

4.1 Description of Alternatives

Each alternative developed assumes that all other planned regional and local transportation improvements included in approved regional and local plans would be completed by the year 2040. These include all planned improvements, regardless of transportation mode.

- **No-action Alternative:** Under the No-action Alternative, no general roadway capacity improvements would be implemented in the study area.
- **I-15 Mainline Widening Alternative:** The I-15 Mainline Widening Alternative would include improving I-15 between MP 0 and MP 16 to the degree necessary to meet LOS D or better for 2040 travel demand. This would include: constructing one additional general purpose lane on I-15 in both the northbound and southbound directions between Southern Parkway and SR-9; constructing auxiliary lanes between the Port-of-Entry and Southern Parkway, between Brigham

Road and Dixie Drive, and between Washington Parkway and SR-9; and improvements to interchanges within the study area. The interchange options are described below:

- **Brigham Road Interchange Options**
  - **Fly-Over with Existing Roundabouts:** This option would leave the existing roundabouts in place and construct a new flyover for the southbound to eastbound movement.
  - **Single Point Interchange (SPI):** This option would remove the roundabouts and construct a SPI with a new intersection at Pioneer Road and Brigham Road.
  - **Cross-Over:** This option would remove the roundabouts and construct cross-over ramps to the east side of I-15, forming a single intersection for all ramp movements.
- **St. George Boulevard Options**
  - **Diverging Diamond Interchange (DDI):** This option would convert the existing diamond interchange to a DDI.
  - **Single Point Interchange (SPI):** This option would convert the existing diamond interchange to a SPI.
  - **Tight Diamond Interchange:** This option would upgrade the existing diamond interchange to a tight diamond interchange.
- **SR-9 Interchange**
  - **Trumpet Layout:** This option would maintain the existing trumpet layout but would improve the southbound exit deceleration coming into the loop ramp, increase the size of the loop ramp, and add additional lanes to the ramps.
  - **Half Diverging Diamond:** This option would eliminate the loop ramp and convert the existing interchange to a half diverging diamond interchange.
  - **Directional Diamond:** This option would convert the existing layout to a directional diamond interchange.

4.2 Alternatives Analysis Criteria

Purpose and Need

The alternatives identified as possible solutions for the transportation needs of the area were evaluated for their ability to meet the Purpose and Need for the study area: i.e., to address the projected 2040 travel demand by providing LOS D or better on the I-15 corridor between MP 0 and MP 16. These criteria included:

- Provide LOS D or better for the I-15 mainline corridor between MP 0 and MP 16
- Provide LOS D or better for all movements on ramp intersections for interchanges on I-15 between MP 0 and MP 16

Interchange Design Analysis

Interchange options were measured against the following measures of effectiveness:

- Meet American Association of State Highway and Transportation Officials (AASHTO) and UDOT standards
- Meet FHWA 13 critical design criteria
- Meet driver expectancy

Interchange Environmental Analysis

Potential effects on existing environmental resources were used to measure the comparative impacts of the proposed interchange options. Interchange options were measured against the following criteria:

- **Threatened and Endangered Species**
  - Plants (Holmgren Milk-vetch and Dwarf Bear Claw Poppy): Measure acres of impacts to suitable habitat and designated critical habitat and number of individual plant impacts
  - Desert Tortoise: Measure acres of impacts to designated critical habitat
- **Cultural Resources**
  - Identify number of "adverse" effects
- **Section 4(f)**
  - Quantify number of non-*de minimis* uses
- **Wetlands and Waters of the U.S.**
  - Measure acreage and linear impacts

Interchange Phasing Analysis

The ability to deliver the proposed project in multiple phases may be necessary in some instances to satisfy a funding or logistical constraint. For example, constructing a diamond interchange may be done through widening the existing bridge; whereas, constructing a SPI interchange would require a total reconstruction at a much higher cost. Additionally, interchange improvements may be needed before a mainline widening is necessary and, therefore, a project that allows for the separate construction of the two elements would be beneficial.

Cost

The cost of an alternative was not used as a specific screening criterion, but it was taken into consideration during the development of alternatives and options. One of the goals of the project, as described in Chapter 1, is to provide a transportation facility on I-15 between MP 0 and MP 16 that will meet current design standards set by UDOT and AASHTO, using as much of the existing infrastructure as practicable. This goal was implemented as the project team developed alternatives. By implementing this goal, cost savings were built into alternatives and options. A preliminary cost estimate for each interchange option was prepared and includes costs for construction, engineering, right-of-way, utility relocations, and mitigation.

4.3 Alternatives Analysis

I-15 Mainline Widening Alternative

The I-15 Mainline Widening Alternative provides LOS D or better for the I-15 mainline corridor between MP 0 and MP 16; therefore, this alternative meets the Purpose and Need and moved forward for further study.

Several interchange design options were developed as part of the I-15 Mainline Widening Alternative for Brigham Road, St. George Boulevard, and SR-9. The interchange options were evaluated based on the criteria discussed in the previous section.

Brigham Road Interchange

At Brigham Road, the alternatives analysis indicated that all interchange options were essentially equal in terms of the alternatives analysis criteria. The SPI Option was selected for the following reasons:

- The SPI Option provided for slightly better interchange driver expectancy than all other options. In addition, the SPI Option would also provide for better I-15 corridor driver expectancy because it would be similar to all other interchanges along the I-15 corridor.
- The current Brigham Road Interchange provides for roundabouts at the ramp intersections. UDOT has received several complaints about this interchange configuration from the public about the roundabouts being confusing. The SPI Option would eliminate the roundabouts and alleviate these public concerns.
- The SPI Option would accommodate heavy truck movements better than all other options.

The Fly-Over Option and the Cross-Over Option were eliminated because they did not provide the advantages as described for the SPI Option.

St. George Boulevard Interchange
At St. George Boulevard, the alternatives analysis indicated that all interchange options were essentially equal in terms of the alternatives analysis criteria. The Diverging Diamond Option was selected for the following reasons:

- The Diverging Diamond Option can be constructed in phases.
- The Diverging Diamond Option meets the goal of the project to use as much of the existing infrastructure as practicable by utilizing the existing structure (see Chapter 1 for goals). Also, the Diverging Diamond Option can be constructed with the existing bridge size.
- The Diverging Diamond Option provides better traffic operations and performance than the Tight Diamond Option, and is comparable in that regard to the Single Point Option.

The Single Point Option and the Tight Diamond Option were eliminated because they did not provide the advantages as described for the Diverging Diamond Option.

SR-9 Interchange
At SR-9, the alternatives analysis indicated that all interchange options were essentially equal in terms of the alternatives analysis criteria. The Trumpet Option was selected for the following reasons:

- The Trumpet Option can be constructed in phases.
- The Trumpet Option meets the goal of the project to use as much of the existing infrastructure as practicable by closely matching the existing design layout/footprint.
- The Trumpet Option provides for free-flowing movements in all directions, which results in better traffic operations and performance as compared to all other options.
- The Trumpet Option provides for better safety since all traffic conflicts are removed.

The Half Diverging Diamond Option and the Directional Diamond Option were eliminated because they did not provide the advantages as described for the Trumpet Option.

4.4 Alternatives Selected for Detailed Study

The No-action Alternative and the I-15 Mainline Widening Alternative with the SPI Option at Brigham Road, the Diverging Diamond Option at St. George Boulevard, and the Trumpet Option at SR-9 were selected for further study.

5.0 PROJECT IMPACTS AND MITIGATION (Chapter 3 of the EA)

During the NEPA process, the alternatives were evaluated and adjusted to minimize harm. Alignments and designs were selected to reduce impacts, where possible, while still meeting the project Purpose and Need. All practical measures to minimize environmental harm by the Selected Alternative have been considered and incorporated into the project. The following table summarizes the Selected Alternative impacts and the mitigation measures that will minimize harm and/or reduce the effects of the project.

Table 1. Summary of Environmental Impacts of the Selected Alternative

Resource	Impact	Mitigation
Land Use	The following would be converted to detention basin and roadway use: • 1.3-acres of commercial property • 4-acres of open space • 0.7-acres of planned development • 0.4-acres of residential property	No mitigation required.
Farmland	No impact.	No mitigation required.
Social Impacts and Environmental Justice	• Would be unlikely to cause substantial adverse impacts on community social conditions. • No disproportionately high and adverse effects on minority and low-income populations.	No mitigation required.

Resource	Impact	Mitigation
Economics	• Would not displace commercial and industrial businesses. • Current market forces and trends would continue to influence the local economy. Access to local businesses from the I-15 corridor would be easier. • Some local businesses may lose some patronage during construction. • Would benefit the local economy in the long term by reducing congestion, improving safety, and making businesses more accessible.	No mitigation required.
Relocations	Approximately 6.4-acres of property would be acquired.	No mitigation required.
Pedestrian and Bicyclist Issues	• Would construct new pedestrian facilities that would cross I-15 at the Brigham Road and the St. George Boulevard Interchanges. • Would maintain existing facilities as presently constituted and would not preclude the implementation of any additional planned pedestrian and bicycle facilities. • Any and all trails and/or bicycle routes that cross I-15 would not be permanently impaired and the connection would be maintained.	No mitigation required.

Resource	Impact	Mitigation
Air Quality	Not expected to cause air quality impacts.	No mitigation required.
Noise	• Noise levels would generally increase over the existing and No-action noise levels. • Noise levels would range from 58 dBA to 81 dBA, with an average noise level of about 68 dBA.	The following noise walls meet all the criteria outlined in UDOT's Noise Abatement Policy (revised January 10, 2012), and are therefore recommended for inclusion in the proposed project, pending balloting efforts (see Figures in Volume 2 of the EA): • **Southern Parkway to Brigham Road West Wall 1:** West side of I-15 from about Sugar Leo Road to Rocket Bar Road in St. George • **Brigham Road to Dixie Drive West Wall 1:** West side of I-15 from north of the Virgin River to Dixie Drive in St. George • **Bluff Street to St. George Boulevard West Wall 1:** West side of I-15 from 1160 South to 700 East in St. George • **Bluff Street to St. George Boulevard East Wall 1:** East side of I-15 from 400 East to 770 East in St. George • **Bluff Street to St. George Boulevard West Wall 2:** West side of I-15 from about 700 South to 100 South in St. George • **Bluff Street to St. George Boulevard East Wall 2:** East side of I-15 from 600 South to 200 South in St. George. • **St. George Boulevard to Green Springs Drive East Wall 1:** East side of I-15 from about Mall Drive to 850 North in St. George • **Green Springs Drive to Washington Parkway East Wall 1:** East side of I-15 from about 500 West to 300 East in Washington
Cultural (Archaeological and Architectural) Resources	The Selected Alternative would have an overall adverse effect on historic properties.	A Programmatic Agreement (PA) to resolve adverse effect to historic properties has been prepared and agreed upon and will be executed by FHWA, SHPO, and UDOT (see Chapter 4 of the EA).
Paleontological Resources	Unless fossils are discovered as a result of construction activities, the Selected Alternative should have no impact on paleontological resources.	If the Mesozoic bedrock units would be disturbed as a result of the Selected Alternative, a paleontologist will evaluate the project.

Resource	Impact	Mitigation
Section 4(f) and Section 6(f) Resources	• The Selected Alternative would have a *de minimis* impact to the Red Cliffs Desert Reserve • No impact to Section 6(f) properties	To minimize habitat loss in desert tortoise Critical Habitat (Red Cliffs Desert Reserve), the Selected Alternative will install measures such as concrete barriers, block walls, or similar materials in order to reduce the area where cut/fill will be required. Mitigation for effects to desert tortoise Critical Habitat will be implemented at a 5.5:1 ratio for direct impacts resulting in habitat loss. All mitigation for the desert tortoise will be applied to protection of the species within the Red Cliffs Desert Reserve via purchase of habitat within the Red Cliffs Desert Reserve. Mitigation shall be approved by U.S. Fish and Wildlife Service (USFWS), the Desert Tortoise Habitat Conservation Plan Technical Committee, and the Red Cliffs Desert Reserve, and will be purchased prior to project impacts in desert tortoise Critical Habitat.
Wetlands	• No impacts to wetlands • Minor impacts to four drainages	**Project Commitments** This EA does not address the jurisdictional status of the wetlands or water features. Therefore, an approved jurisdictional determination will be conducted for the wetlands and water features identified in the wetland delineation. A Section 404 Permit will be obtained from the USACE for all work to be conducted within the Virgin River, Atkinville Wash, and any other waters of the U.S. and wetlands that are determined to be jurisdictional. **Mitigation** No mitigation required.

Resource	Impact	Mitigation
Threatened and Endangered Species	• **Desert Tortoise:** may affect and is likely to adversely affect the desert tortoise and desert tortoise Critical Habitat.	**Desert Tortoise** <u>Project Commitments</u> • A pre-construction desert tortoise survey, and potential relocation activities, would be conducted by a qualified tortoise biologist prior to ground-disturbing activities. All surveys, handling, and burrow excavation and construction will be conducted in accordance with the protocol described in *Guidelines for Handling Desert Tortoises During Construction Projects*. Desert tortoise survey and relocation activities shall be coordinated with U.S. Fish and Wildlife Service (USFWS). • To minimize habitat loss in desert tortoise Critical Habitat, the Selected Alternative will install measures such as concrete barriers, block walls, or similar materials in order to reduce the area where cut/fill will be required. • The new right-of-way fence installed adjacent to desert tortoise Critical Habitat will be built to meet the standards of the USFWS-approved exclusionary desert tortoise fencing, and will be installed prior to construction activities. • No drainage basins will be located in desert tortoise Critical Habitat. <u>Mitigation</u> • Mitigation for effects to desert tortoise critical habitat will be implemented at a 5.5:1 ratio for direct impacts resulting in habitat loss. All mitigation for the desert tortoise would be applied to protection of the species within the Red Cliffs Desert Reserve. Mitigation shall be approved by us, the Desert Tortoise Habitat Conservation Plan Technical Committee, and the Red Cliffs Desert Reserve, and would be purchased prior to project impacts in desert tortoise Critical Habitat. • Mitigation for effects to desert tortoise Critical Habitat will be implemented prior to construction activities in Critical Habitat, and no later than five years from receiving the BO, or consultation with the USFWS must be reinitiated.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Dwarf Bear-Poppy:** may affect and is likely to adversely affect the dwarf bear-poppy.	**Dwarf Bear-Poppy** Project Commitments • A pre-construction botanical survey will be conducted in order to identify dwarf bear-poppy occupied habitat within the existing right-of-way. • Disturbance of natural vegetation within the right-of-way will be limited in order to maintain native plant species composition and minimize impacts to pollinators. Disturbed areas within the right-of-way will be revegetated with native grasses, forbs, shrubs, and certified weed-free native seed as appropriate. • Environmental fencing will be installed around all areas (including newly discovered areas) of dwarf bear-poppy occupied habitat that are found during preconstruction botanical surveys. • To avoid impacts to individual dwarf bear-poppy species and minimize habitat loss in dwarf bear-poppy suitable habitat, the proposed project will install measures such as concrete barrier, block walls, or similar materials to reduce the area where cut/fill will be required. • Broadcast applications of herbicides will be prohibited in dwarf bear-poppy suitable habitat (Shnabkaib/Middle Red/Upper Red members of the Moenkopi Formation) that occurs in the existing right-of-way; spot treatments of herbicides will be used to treat noxious weeds in these right-of-way areas during maintenance activities. Mitigation Mitigation for effects to dwarf bear-poppy occupied habitat will be implemented at a 3:1 ratio for direct impacts. Mitigation for effects to dwarf bear-poppy suitable habitat will be implemented at a 3:1 ratio for direct impacts resulting in habitat loss. The total mitigation will be 27.21 acres of habitat purchased for the dwarf bear-poppy for 9.07 acres of impacts. Mitigation shall be approved by the USFWS prior to a commitment of resources, and will be conducted concurrent with or prior to project impacts in dwarf bear-poppy occupied and/or suitable habitat. A mitigation plan must be initiated prior to the aforementioned impacts.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Holmgren Milk-Vetch:** may affect and is likely to adversely affect the holmgren milk-vetch and holmgren milk-vetch Critical Habitat.	**Holmgren Milk-Vetch** <u>Project Commitments</u> • A pre-construction botanical survey will be conducted in order to identify Holmgren milk-vetch occupied habitat within the existing right-of-way. • Disturbance of natural vegetation within the right-of-way will be limited in order to maintain native plant species composition and minimize impacts to pollinators. Disturbed areas within the right-of-way will be revegetated with native grasses, forbs, shrubs, and certified weed-free native seed as appropriate. • Construction activities will be restricted in Holmgren milk-vetch Critical Habitat to the limits identified in the BA (see Appendix A). In areas of the right-of-way that are not within Holmgren milk-vetch Critical Habitat, environmental fencing will be installed around Holmgren milk-vetch occupied habitat (see BA in Appendix A) in order to create exclusionary zones where construction activities will be prohibited. The exclusionary zones will also include any new areas of Holmgren milk-vetch occupied habitat that are discovered during pre-construction botanical surveys. • To avoid impacts to individual Holmgren milk-vetch species and minimize habitat loss in Holmgren milk-vetch Critical Habitat, the proposed project will install measures such as concrete barrier, block walls, or similar materials in order to reduce the area where cut/fill will be required. • Broadcast applications of herbicides will be prohibited in Holmgren milk-vetch Critical Habitat that occurs in the existing right-of-way; spot treatments of herbicides will be used to treat noxious weeds in these right-of-way areas during maintenance activities.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Holmgren Milk-Vetch:** may affect and is likely to adversely affect the holmgren milk-vetch and holmgren milk-vetch Critical Habitat.	**Holmgren Milk-Vetch (continued)** Mitigation Mitigation for effects to Holmgren milk-vetch Critical Habitat will be implemented at a 3:1 ratio for direct impacts resulting in habitat loss or disturbance--total mitigation will be 1.17 acres of mitigation for 0.39 acres of impacts. All mitigation for the Holmgren milkvetch will be applied to protection of the species within the Utah-Arizona Border Unit of designated Holmgren milk-vetch Critical Habitat via purchase of habitat. Mitigation shall be approved by the USFWS prior to a commitment of resources, and will be conducted concurrent with or prior to project impacts in Holmgren milk-vetch occupied and/or Critical Habitat. A mitigation plan must be initiated prior to the aforementioned impacts.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Southwestern Willow Flycatcher:** may affect but is not likely to adversely affect the southwestern willow flycatcher and may affect and is likely to adversely affect southwestern willow flycatcher Critical Habitat. • **Yellow-Billed Cuckoo:** may affect but is not likely to adversely affect the yellow-billed cuckoo and would not affect yellow-billed cuckoo Critical Habitat.	**Avian Species (Southwestern Willow Flycatcher and Yellow-Billed Cuckoo)** The Southwestern willow flycatcher occurs in the same area as the Virgin River chub and woundfin. Many of the conservation measures developed for those species are applicable for reducing impacts to the flycatcher and are incorporated here by reference and/or located the Virgtin River chub/woundfin section below. <u>Project Commitments</u> • To minimize the potential for impacts to spawning fish (spawning period is April 1 – July 31) and the breeding season for the Southwestern willow flycatcher (breeding period is April 15 – August 15), Project actions within the Virgin River channel or within the 100-year floodplain will not occur between April 1 and August 15. During this timeframe, Project actions are permitted to occur above the Virgin River's 100-year floodplain for bridge construction activities including above-ground structural work on the bridges. • All revegetation work will be implemented as described in the Virgin River chub/woundfin section below and in coordination with the Virgin River Program Local Coordinator. Furthermore, this work will be consistent with the Virgin River Master Plan (VRMP). Appropriate specifications can also be obtained from the UDOT Pole Planting / Willow Cuttings Standard Specification 02931 and/or the Utah Pollutant Discharge Elimination System (UPDES) Permit as long as this information does not conflict with the revegetation specifications below, in the Virgin River chub/woundfin section below, or with the Virgin River Program recommendations. • Revegetation will occur in all areas disturbed by Project activities including but not limited to staging/stockpile areas, active construction sites, access corridors, and burrow/disposal sites. The planting success criteria and monitoring will be coordinated with the Virgin River Program and the USFWS. UDOT will follow-up on future revegetation needs if the planting is not successful. • Native grasses, forbs, shrubs, and certified weed-free native seed will be used to reseed disturbed soils as appropriate. • Provide erosion control on all cut-and-fill slopes by applying compost or mulch to the slope or through other means. Establish native vegetation on the slope where possible.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Southwestern Willow Flycatcher:** may affect but is not likely to adversely affect the southwestern willow flycatcher and may affect and is likely to adversely affect southwestern willow flycatcher Critical Habitat. • **Yellow-Billed Cuckoo:** may affect but is not likely to adversely affect the yellow-billed cuckoo and would not affect yellow-billed cuckoo Critical Habitat.	**Southwestern Willow Flycatcher and Yellow-Billed Cuckoo** Project Commitments (Continued) • Stockpile areas will be approved by UDOT or a qualified biologist prior to construction. Stockpile areas will avoid the riparian vegetation. • Sort excavated soils into mineral soils and top soils. When backfilling a disturbed site, place top soils on top to provide a seed bed for native plants. • The contractor will follow noxious weed mitigation and control measures identified in the most recent version of UDOT's Special Provision Section 02924S, Invasive Weed Control. Furthermore, broadcast application of herbicides will be prohibited within the Virgin River's 100-year floodplain; if necessary, spot treatments will be applied by hand using herbicides approved for aquatic habitats by the U.S. Environmental Protection Agency in order to treat noxious weeds within the floodplain. Mitigation Mitigation for effects to Southwestern willow flycatcher Critical Habitat, Virgin River chub (including Critical Habitat), and woundfin (including Critical Habitat) will be achieved through completion of a riparian restoration project implemented at a 3:1 ratio for permanent impacts and a 2:1 ratio for temporary impacts in the Virgin River's 100- year floodplain. All mitigation will be developed, implemented, and monitored in coordination with the Virgin River Program,UDWR, and the USFWS and will follow USFWS Best Management Practices (BMPs). In total 7.55 acres of riparian habitat will be restored (0.43 acres of permanent impacts (3:1 ratio) and 3.13 acres of temporary impacts (2:1 ratio)). The mitigation restoration project will be implemented prior to or concurrent with the start of project impacts in Critical Habitat for the Southwestern willow flycatcher, Virgin River chub, or woundfin. A USFWS-approved mitigation plan will need to be in place prior to the start of the aforementioned impacts.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Virgin River Chub:** may affect and is likely to adversely affect the Virgin River chub and Virgin River chub Critical Habitat. • **Woundfin:** may affect and is likely to adversely affect the woundfin and woundfin Critical Habitat.	**Aquatic Species (Virgin River Chub and Woundfin)** <u>Project Commitments</u> • The impact-minimization measures included in the Selected Alternative are intended to minimize impacts to listed species and their habitat. The actions and protective measures listed in Appendix C of the BA *Memorandum on Aquatic Habitat and Sensitive Fish Species* either have been considered in the design or will be implemented by contractors and crews to minimize impacts to riparian and riverine habitat during construction. A complete list of these measures are in section 6.0 (pages 35-38) of the BA *Memorandum on Aquatic Habitat and Sensitive Fish Species*. • To minimize the potential for impacts to spawning fish (spawning period is April 1 – July 31) and the breeding season for the Southwestern willow flycatcher (breeding period is April 15 – August 15), Project actions within the Virgin River channel or within the 100- year floodplain will not occur between April 1 and August 15. During this timeframe, Project actions are permitted to occur above the Virgin River's 100-year floodplain for bridge construction activities including above-ground structural work on the bridges. • Dewatering and Fish Clearances – To minimize adverse effects to the aquatic environment in the vicinity of the in-water construction, the area behind cofferdams will be dewatered prior to construction. The in-water work plan described in Section 5.1.1 of the project BA, Direct Effects (or a plan determined by USFWS or UDWR) will be used to remove fish from the construction area. Biologists will prepare a report for USFWS and UDWR that summarizes the number of fish handled, species, and individual lengths. After construction, cofferdams will be removed incrementally to minimize pulses of sediment downstream. • The qualifications of any organization conducting fish clearances, with the exception of the UDWR, must be approved and permitted by USFWS prior to any activities associated with the fish clearances.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Virgin River Chub:** may affect and is likely to adversely affect the Virgin River chub and Virgin River chub Critical Habitat. • **Woundfin:** may affect and is likely to adversely affect the woundfin and woundfin Critical Habitat.	**Aquatic Species (Virgin River Chub and Woundfin)** Project Commitments (Continued) *Stream and Floodplain Disturbance* • Construction activities in designated Critical Habitat for woundfin and Virgin River chub will not occur during active flooding events (when the water level rises more than 6 inches above the normal wetted channel). • All new bridge piers located below the Ordinary High Water Mark (OHWM) will be positioned parallel to flow to reduce scouring. • Erosion control will be provided on all cut-and-fill slopes by applying compost or mulch to the slope or through other means. Native vegetation will be established on the slope where possible. Where possible, vegetated filter strips will be provided. Vegetation in filter strips slows the velocity of the stormwater enough that larger suspended particles settle out, metals can be taken up by the organic material in the soil, and the dissolved metal cations can be exchanged in the clay minerals in the soils or removed by the vegetation. The reduction in velocity also allows more time for oil and grease to volatilize, photodegrade, biodegrade, or be taken up by organic components in the vegetation or soils. • Large equipment will be used in floodplains only when necessary. • All staging areas will be located outside of the Virgin River's 100-year floodplain in previously disturbed sites.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Virgin River Chub:** may affect and is likely to adversely affect the Virgin River chub and Virgin River chub Critical Habitat. • **Woundfin:** may affect and is likely to adversely affect the woundfin and woundfin Critical Habitat.	**Aquatic Species (Virgin River Chub and Woundfin)** Project Commitments (Continued) *Chemical Pollution Prevention Measures* • UDOT will identify and minimize the potential for accidental spills of hazardous materials by implementing BMPs and measures specified in the storm water pollution prevention plan (SWPPP). UDOT will develop a spill prevention, control, and countermeasures (SPCC) plan and will follow it during construction. This plan will identify riparian zones and drainages and describe measures to ensure protection. UDOT will implement a plan to identify and protect sensitive resources through applicable BMPs. The SPCC and SWPPP will address the following issues: o Provide the contractor with a list of specific requirements for refueling construction equipment near riparian zones and water bodies, which could include washing equipment, not refueling within 100 feet of water bodies, and steps to control, contain, and clean up any spill that occurs. o Designate riparian zones and drainages by staking and flagging them. o Ensure that equipment operating near aquatic habitat contains a hazardous materials response kit to prevent impacts to aquatic habitat. Use equipment mats to prevent leakages from entering the river.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Virgin River Chub:** may affect and is likely to adversely affect the Virgin River chub and Virgin River chub Critical Habitat. • **Woundfin:** may affect and is likely to adversely affect the woundfin and woundfin Critical Habitat.	**Aquatic Species (Virgin River Chub and Woundfin)** • Concrete, grout, cement mortar, and solid and source site materials will be stored in the staging area. The contractor or responsible representative shall provide watertight tanks or barrels for the storage and disposal of chemical pollutants, including those that are produced as byproducts of the construction activities, such as drained lubricating or transmission fluids, grease, soaps, or concrete. Upon completion of construction work, these containers will be removed. Fueling machinery will occur off site or in a confined, designated area to prevent spillage into the Virgin River. In case of emergency, a hazardous materials spill kit will be kept on site during construction that is appropriate for the solvents involved in operation and maintenance of vehicles and machinery used during the Project. Sanitary facilities, such as chemical toilets, will be located at a sufficient distance from the wetted channel to prevent water contamination. At the completion of construction activities, facilities will be disposed of without causing pollution to the river or soils. • A UPDES permit will be required for all stormwater runoff generated by the project. The project will abide by all applicable permit requirements and state laws for stormwater discharge. Water quality requirements could include the use of the city stormwater system, detention ponds, or basins. Detention basins will be designed according to the standards of the Utah Division of Water Quality by incorporating oil-skimming devices and grease traps and by providing 30 minutes of detention time to adequately capture sediment and pollutants before discharging stormwater. Detention basins or ponds will be designed to store runoff and discharge it within about 6 hours to minimize solar heating of the ponded water. • Storm water from the Virgin River Bridge and interstate roadway will be collected and treated to meet discharge standards as required by the Utah Department of Water Quality. The treatment method(s) near the Virgin River will be determined in coordination with USFWS during preliminary and final design. • Broadcast applications of herbicides will be prohibited within the Virgin River's 100-year floodplain; if necessary, spot treatments will be applied by hand using herbicides approved for aquatic habitats by the EPA in order to treat noxious weeds within the floodplain.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Virgin River Chub:** may affect and is likely to adversely affect the Virgin River chub and Virgin River chub Critical Habitat. • **Woundfin:** may affect and is likely to adversely affect the woundfin and woundfin Critical Habitat.	**Aquatic Species (Virgin River Chub and Woundfin)** Project Commitments (Continued) *Revegetation* • All revegetation work will be implemented as described below and in coordination with the Virgin River Program Local Coordinator. Furthermore, this work will be consistent with the Virgin River Master Plan (VRMP). • Appropriate specifications can also be obtained from the UDOT Pole Planting / Willow Cuttings Standard Specification 02931 and/or the Utah Pollutant Discharge Elimination System (UPDES) Permit as long as this information does not conflict with the revegetation specifications below or with the Virgin River Program recommendations. • Revegetation will occur in all areas disturbed by Project activities including but not limited to staging/stockpile areas, active construction sites, access corridors, and burrow/disposal sites. The planting success criteria and monitoring will be coordinated with the Virgin River Program and the USFWS. UDOT will follow-up on future revegetation needs if the planting is not successful. • Native grasses, forbs, shrubs, and certified weed-free native seed will be used to reseed disturbed soils as appropriate. • Riparian vegetation, consisting of vegetation dormant season pole plantings of coyote willow (*Salix exigua*), Fremont cottonwood (*Populus fremontii*), Goodings willow (*Salix gooddingii*), and/or seepwillow (*Baccharis salicifolia*), will be planted using the methods described below.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Virgin River Chub:** may affect and is likely to adversely affect the Virgin River chub and Virgin River chub Critical Habitat. • **Woundfin:** may affect and is likely to adversely affect the woundfin and woundfin Critical Habitat.	**Aquatic Species (Virgin River Chub and Woundfin)** Project Commitments (Continued) • All pole plantings will use dormant cuttings from all species listed above and will be planted in the bank and lower overbank zones. Pole plantings utilize multiple stems that are planted into holes excavated by an auger (chainsaw or equipment mounted). Pole plantings for coyote willow and seepwillow will have 3 cuttings of the same species per hole and will be spaced 12 feet on center. Multiple rows will be staggered. Cuttings will be buried no less than 4 feet into the ground, to reach the lowest water table of the year. With stems placed into the open hole, good soil-to-stem contact will be achieved by filling the hole with mud-water slurry. Good soil-to-stem contact promotes root development. Once buried, stems will be cut to leave approximately 6-8 inches of stem above ground surface. Goodings willow and cottonwood cuttings will be planted immediately adjacent to the toe of the bank stabilization, with willows closer to the stream. These species may be planted as single poles with 1-2 coyote willow stems in the hole as well. Longer cottonwood poles (3-4 feet longer than the depth to water surface) can be planted behind bank stabilization and within gabion blankets and baskets. *Additional Environmental Protection Measures* • If construction materials are displaced by high flow the applicant will contact the USFWS, Utah Field Office or the Virgin River Program as soon as possible to coordinate the least intrusive retrieval methods. • Confine construction activities and equipment to the designated construction work areas. These areas will be designated by lathes and flagging. Construction activities will be contained in these areas. New areas will need approval. • A UDOT Environmental Control Supervisor (ECS) will monitor all environmentally sensitive areas, BMPs, and erosion-control devices. • Pile driving will be accomplished using a vibratory driver or by drilled shafts. Impact drivers will be used only to proof piles, or if geologic conditions make vibratory installation infeasible. Piles will be driven “in the dry” behind cofferdams. • All concrete forms associated with overwater supports will be properly cured “in the dry” prior to contact with surface waters.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Virgin River Chub:** may affect and is likely to adversely affect the Virgin River chub and Virgin River chub Critical Habitat. • **Woundfin:** may affect and is likely to adversely affect the woundfin and woundfin Critical Habitat.	**Aquatic Species (Virgin River Chub and Woundfin)** Project Commitments (Continued) • Netting will be used to ensure that removed bridge sections and associated debris do not enter surface waters below. Alternatively, floating containment booms could be positioned under the bridge to prevent material from entering the water. Collected material will be removed from the containment booms on a daily basis. • Cast-in-place concrete for new bridge infrastructure not contained within a dewatered cofferdam will be secured using a watertight "diaphragm" or plate below the structure. Concrete will be poured atop it, with tarping or other appropriate measures to prevent the spill of wet concrete into waters below. Once poured, the concrete will be covered with protective Visqueen for several days to allow sufficient curing and protection from the elements. Concrete for overwater infrastructure use will be provided by one of two methods: (1) through a pipe attached to a pumper truck positioned near the shoreline or (2) from buckets lifted by crane from the bank. Either method will require the use of spill prevention and control measures, including tarps under buckets, positioning the pumper truck a sufficient distance from the shoreline, and ensuring a tight connection of the delivery pipe to the pumper truck. In addition, the following BMPs will be implemented: • Best management construction practices will be used to limit the release of fine sediment into the Virgin River during construction in areas adjacent to the river. BMPs include the use of silt-free fill, riprap (if used for rock slope protection), and silt barriers.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Virgin River Chub:** may affect and is likely to adversely affect the Virgin River chub and Virgin River chub Critical Habitat. • **Woundfin:** may affect and is likely to adversely affect the woundfin and woundfin Critical Habitat.	Project Commitments (Continued) • If project activities include the construction of riprap walls or if activities will alter any previously constructed riprap walls, riprap sections must be built or reconstructed such that: 1) all potential interstitial spaces are filled with sediment up to the corresponding water level for a 5-year flood event; 2) cutoff walls are installed in riprap sections to limit fresh water flow; and 3) as appropriate, rocks in gabion baskets are covered with geotextile fabric to prevent entry by nonnative fish. These measures will be specified in any Project related construction plans and any deviation from use of these measures will be approved by the USFWS. Riparian vegetation will also be installed at the foot or toe of newly placed riprap structures. • A construction SWPPP and operational stormwater control plan will be developed to prevent pollutants from being introduced into the river due to construction or the use of the bridge and associated roads. • If bank stabilization and erosion-control structures are necessary, they will be designed to maintain or enhance natural stream function (sinuosity, gradient, hydrology, and sediment transport). Stabilization structures will be defined during the Clean Water Act Section 404 permitting process with the U.S. Army Corps of Engineers. • Equipment will be cleaned to remove noxious weeds and seeds and petroleum products before being moved onsite. • Materials will not be stockpiled immediately adjacent to the river channel. • Fill materials will be free of fines, waste, pollutants, and noxious weeds. • Sort excavated soils into mineral soils and top soils. When backfilling a disturbed site, place top soils on top to provide a seed bed for native plants. • Disturbed areas will be monitored for noxious and undesirable plant species, and control actions will be implemented if necessary. Disturbed areas will be revegetated when appropriate after construction with native plants or certified weed-free native seed. Planting success will be monitored, and, if the planting fails, it will be reseeded or replanted. • All piers and associated concrete will be removed to six feet below ground surface during the demolition of the existing bridge structures.

Resource	Impact	Mitigation
Threatened and Endangered Species (continued)	• **Virgin River Chub:** may affect and is likely to adversely affect the Virgin River chub and Virgin River chub Critical Habitat. • **Woundfin:** may affect and is likely to adversely affect the woundfin and woundfin Critical Habitat.	Mitigation Mitigation for effects to Southwestern willow flycatcher Critical Habitat, Virgin River Chub (including Critical Habitat), and woundfin (including Critical Habitat) would be a restoration project implemented at a 3:1 ratio for permanent impacts and a 2:1 ratio for temporary impacts in the Virgin River's 100-year floodplain. All mitigation would be developed, implemented, and monitored in coordination with the Virgin River Program, UDWR, and the USFWS and will follow USFWS Best Management Practices (BMPs). In total 7.55 acres would be mitigated (0.43 acres of permanent impacts (3:1 ratio) and 3.13 acres of temporary impacts (2:1 ratio). See Biological Opinion in Chapter 4 of the EA for additional information regarding the terms and conditions of the reasonable and prudent measures outlined by USFWS.
Wildlife	Would negatively affect the Virgin spinedace and the flannelmouth sucker.	See Threatened and Endangered Species Section, for mitigation and project commitments to reduce the effects of the Selected Alternative to aquatic species.
Hazardous Materials and Hazardous Waste Sites	No impact.	No mitigation required.
Visual and Aesthetic Resources	Would visually create some minor alterations as a result of additional pavement width, proposed modifications to interchanges, new cut slopes, a soil nail retaining wall, and potential noise walls.	No mitigation required.
Wild and Scenic Rivers	No impact.	No mitigation required.

Resource	Impact	Mitigation
Water Quality	Would increase the impervious surface by approximately 74 acres, or an increase of 41 percent over the existing I-15 and associated roadways in the project corridor. Detention basins and BMPs would be used to treat increases in stormwater runoff which would result in a minimal effect to water quality in receiving streams and the underlying aquifers.	**Project Commitments** Surface Water Quality The following measures are intended to reduce erosion and apply to all areas along the Selected Alternative that are proposed for construction. In addition to these measures, where appropriate, UDOT's UPDES Phase II manual will be used. • **Cut-and-Fill Slopes.** Provide erosion control on all cut-and-fill slopes by applying compost or mulch to the slope or through other means. Establish native vegetation on the slope where possible. Where possible, provide vegetated filter strips. Vegetated filter strips are the Utah Department of Environmental Quality's (UDEQ) preferred water quality treatment measure. • **Detention Ponds.** Detention ponds will be provided for water quality treatment where it is necessary to detain runoff to reduce its peak flow rate. Detention basins will be designed to store runoff and discharge it within about 6 hours to minimize solar heating of the ponded water. If the Total Maximum Daily Load (TMDL) analysis concludes that urban stormwater runoff is affecting temperatures in the Santa Clara River, additional stormwater mitigation measure such as infiltration basins or bioswales would also be included with detention basins to manage stormwater runoff from roadway segments that would discharge directly to impaired segments of the River. Wells and Points-of-Diversion During the final design of the project, UDOT will work with the property owner to determine the appropriate mitigation measure if a well head or other water right Point-of-Diversion (POD) is affected. Mitigation could include (1) relocating a well head or surface water diversion to continue to provide irrigation water to any land that is not acquired or (2) abandoning the well and compensating the owner for the value of the associated water right.

Resource	Impact	Mitigation
Floodplains	Would have impacts to several floodplains; however, impacts would not cause a 1 foot increase in the 100-year flood elevation. Therefore the impact would not constitute a "significant encroachment" as defined by FHWA regulations.	**Project Commitments** Measures will be taken to ensure that the Selected Alternative will comply with applicable local, state, and federal regulations. These measures include the following: • The design of hydraulic structures will follow the UDOT Manual of Instruction as well as the Federal Emergency Management Act (FEMA) and local floodplain requirements. Where impacts to the floodplain are unavoidable, proper steps will be taken with the local community and FEMA to obtain a Letter of Map Revision. • UDOT or its construction contractor will obtain Stream Alteration Permits from the Utah Division of Water Rights for all stream crossings. • UDOT or its construction contractor will file a General Permit with the Utah Division of Forestry, Fire, and State Lands for all new crossings to obtain an easement over and/or upon the stream bed. • UDOT or its engineer will perform detailed hydraulic modeling, scour analyses, and scour countermeasure design to properly assess flooding and scour potential and mitigate against flood and scour events. The design will take into account the established Erosion Hazard Boundary and meet the requirements of St. George City Code Section 10-23-7. • Where feasible, roadway elevations will be designed to be above the 100-year floodplain. • New structures proposed in the Selected Alternative which encroach on the 100-year floodplain and/or the erosion hazard zone will include design elements that provide protection from riverine lateral migration and erosion and will be designed to convey the 100-year event.
Energy	Under the Selected Alternative traffic would flow more smoothly and would result in a lower LOS in the study area, thereby improving fuel efficiency and decreasing fuel consumption over time.	No mitigation required.
Invasive Species	Would provide opportunities for the movement of invasive species through the landscape.	No mitigation required.

Resource	Impact	Mitigation
Construction Impacts	**Social Conditions and Environmental Justice:** Local residents as well as people traveling through the study area would experience frustrations associated with traffic congestion, delays, and detours during the construction period. In addition, some residents who live in close proximity to the study corridor may experience disturbance effects from noise and dust generated by construction activities. **Economic Conditions:** Would not limit access from existing roadways to businesses, except at a few locations. These inconveniences are expected to be of short duration. Overall, construction is not expected to substantially impact business access, operations or sales. **Pedestrians and Bicyclist Issues:** Would require the temporary closure of the Virgin River Trail where the trails cross I-15. **Air Quality:** Would result in temporary negative effects to air quality in the study area due to increased dust and particulates. **Noise:** Area residents would experience temporary inconvenience due to construction noise.	**Social Conditions and Environmental Justice** Project Commitments: Impacts during construction will be mitigated through implementation of a traffic-control plan with advance notice to those affected. **Economics** Project Commitments: Access to businesses in the construction area will be maintained during the construction and post-construction phases of this project, as this is UDOT's policy with respect to access issues on all UDOT roadway improvement projects. UDOT will coordinate with property owners and businesses to evaluate ways to maintain access while still allowing efficient construction operations. **Pedestrians and Bicyclist Issues** Project Commitments: A detour route will be provided for the Virgin River Trail. **Air Quality** Project Commitments: Construction mitigation includes strategies that reduce engine activity or reduce emissions per unit of operating time, such as reducing the numbers of trips and extended idling. Operational agreements that reduce or redirect work or shift times to avoid community exposures can have positive benefits when sites are near populated areas. Construction emissions for PM_{10} will be minimized through good construction practices such as watering exposed surfaces, minimizing the amount of exposed and disturbed surfaces, minimizing construction equipment and vehicle speeds, and properly maintaining vehicle engines. A dust-control plan will be prepared for the construction phase of the proposed project. Dust-control measures could include planting vegetative cover, providing synthetic covers, and watering and/or chemically stabilizing unpaved haul roads. **Noise** Project Commitments: Construction noise impacts are considered temporary and will be minimized through adherence to UDOT Standard Specification 01355 - Environmental Compliance, Part 3.6 - Noise and Vibration Control.

Resource	Impact	Mitigation
Construction Impacts (continued)	**Cultural (Archaeological and Architectural) Resources:** There is the possibility to impact undiscovered archaeological sites during construction. **Paleontology:** There is the possibility to impact undiscovered paleontological sites during construction. **Section 4(f) and Section 6(f) Resources:** Would require the temporary closure of the Virgin River Trail (a Section 4(f) resource) where the trail crosses I-15. There is the possibility to impact undiscovered archaeological sites, eligible for Section 4(f), during construction. **Wetlands:** Would require construction work in the channels of Atkinville Wash and in the Virgin River itself for the placement of bridge piers. **Threatened & Endangered Species:** <u>Desert Tortoise:</u> The desert tortoise is likely to be adversely affected by construction as a result of mortality, harm, and harassment from construction activities. <u>Dwarf Bear-Poppy:</u> Construction would reduce the number of ground-nesting bees and thus the number of potential pollinators of dwarf bear-poppy.	**Cultural (Archaeological and Architectural) Resources** <u>Project Commitments</u> The contractor will be required to abide by UDOT Standard Specification 01355 - Environmental Compliance, Part 3.8, Discovery of Historical, Archaeological, or Paleontological Objects, Features, Sites, or Human Remains. **Paleontology** <u>Project Commitments</u> The contractor will be required to abide by UDOT Standard Specification 01355 - Environmental Compliance, Part 3.8, Discovery of Historical, Archaeological, or Paleontological Objects, Features, Sites, or Human Remains. **Section 4(f) and Section 6(f) Resources** <u>Project Commitments</u> • A detour route will be provided for the Virgin River Trail. • The contractor will be required to abide by UDOT Standard Specification 01355 - Environmental Compliance, Part 3.8, Discovery of Historical, Archaeological, or Paleontological Objects, Features, Sites, or Human Remains. **Wetlands** <u>Project Commitments</u> A Section 404 Permit will be obtained from the USACE for all work to be conducted within the Virgin River, Atkinville Wash, and any other waters of the U.S. and wetlands that are determined to be jurisdictional. **Threatened & Endangered Species** See Threatened and Endangered Species section above for mitigation and project commitments during construction.

Resource	Impact	Mitigation
Construction Impacts (continued)	Holmgren milk-vetch: Although Holmgren milk-vetch is self-compatible and not totally dependent on pollinators, it is anticipated that the construction would reduce the number of ground-nesting bees and thus the number of potential pollinators of Holmgren milk-vetch; however, the ultimate effects of highway construction and operation on the pollinators of Holmgren milk-vetch are unknown. Aquatic Species (Virgin River Chub and Woundfin): impacts to aquatic species would likely occur during the demolition and reconstruction of the bridges over the Virgin River. Avian Species (Southwestern Willow Flycatcher and Yellow-Billed Cuckoo): Temporary construction activities could deter migrating flycatchers from using the Virgin River as a travel route in the study area during the construction period. However, because this species is highly mobile, other entries into the Virgin River valley, though possibly less desirable, would still be available to the species.	**Threatened & Endangered Species** See Threatened and Endangered Species section above for mitigation and project commitments during construction.

Resource	Impact	Mitigation
Construction Impacts (continued)	**Wildlife:** Native species in the Virgin River (Virgin spinedace, desert sucker, and flannelmouth sucker) would experience similar effects as the aquatic species discussed in the threatened and endangered species section during construction. **Hazardous Materials and Hazardous Waste Sites:** There is the possibility to impact undiscovered hazardous waste sites during construction. **Visual and Aesthetic Resources:** There would be some temporary visual impacts to the study area with the addition of construction signs, barricades, exposed earth, and construction equipment during construction. **Water Quality and Water Resources:** There is the potential for temporary soil erosion and sediment/siltation impacts. In addition, construction could increase the amount of Total Dissolved Solids (TDS), Total Suspended Solids (TSS), and turbidity in receiving waters. **Energy:** Construction activities would directly consume energy in the form of energy used to operate construction machinery, provide construction lighting, and produce and transport materials used in the construction of the project, such as asphalt.	**Wildlife** See Threatened and Endangered Species section above for mitigation and project commitments during construction. **Hazardous Materials and Hazardous Waste Sites** Project Commitment Hazardous waste sites could be encountered during construction. In such a case, all work will stop in the area of the contamination according to UDOT Standard Specification, Section 01355, Part 3.1 and the contractor will consult with UDOT and UDEQ to determine the appropriate remedial measures. **Visual and Aesthetic Resources** Visual impacts due to construction activities are considered temporary and no mitigation is required. **Water Quality and Water Resources** Project Commitment The Selected Alternative would disturb more than 1 acre of land and would require coverage under the Utah Pollutant Discharge Elimination System (UPDES) stormwater permit. To obtain a UPDES permit, a notice of intent must be submitted to the Utah Division of Water Quality describing the construction activities. A SWPPP must be developed prior to submitting the notice of intent for the UPDES permit. The SWPPP identifies best management practices as well as site-specific measures to reduce erosion and prevent eroded sediment from leaving the construction zone.

Resource	Impact	Mitigation
Construction Impacts (continued)	**Invasive Species:** The potential exists for invasive species to be introduced or propagated in the study area due to construction activities that disturb the existing ground cover.	**Invasive Species** Project Commitment To minimize the movement of invasive species, the Contractor will be required to comply with UDOT's Special Provision 02926S - Invasive Weed Control.

6.0 SECTION 4(F) DETERMINATION

FHWA finds that the I-15, MP 0 to MP 16 EA project has met the requirements of Section 4(f) of the U.S. Department of Transportation Act of 1966, as found in 23 CFR 774. Through consultation with the SHPO and agencies with jurisdiction over Section 4(f) properties, FHWA finds that the Selected Alternative will not impact Section 4(f) properties, other than a *de minimis* impact to the Red Cliffs Desert Reserve.

7.0 CONSTRUCTION MONITORING

This Finding of No Significant Impact represents a commitment to monitor and enforce the measures described above to minimize harm to the surrounding environment. All of the mitigation measures listed above and identified in the EA will be incorporated in the contract plans and specifications and will be monitored by UDOT. This will include monitoring the effectiveness of the Best Management Practices outlined in UDOT's Standard Specifications. Enforcement of the contract provisions and monitoring of the project is the responsibility of the UDOT Construction Engineer, and the UDOT Region 4 Environmental Manager. A pre-construction meeting will be held with the contractor to review mitigation requirements and environmentally sensitive areas in the project corridor.

8.0 COORDINATION (Chapter 4 of the EA)

This project has included coordination with the City of St. George, Washington City, Hurricane City, the Dixie Metropolitan Planning Organization (DMPO), the general public, various resource agencies, business and property owners, and Native American Tribes. Coordination has occurred via letters, e-mail, telephone conversations, meetings, and review of the EA. A draft of the EA was made available for public review from July 24, 2012 to August 24, 2012 with a public hearing on August 7, 2012. A total of 11 comments were received during the public comment period through comment forms at the Public Hearing, verbal comments at the Public Hearing, written correspondence, e-mail, and the website and covered topics such as noise and noise abatement, air quality, traffic, design, and safety. All of the comments received on the EA have been addressed and a summary of the comments and responses is included in Chapter 4 of the EA.

9.0 FONSI REQUIREMENTS

According to Title 23 of the Code of Federal Regulations Part 771.111 (f), in order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the action evaluated in each FONSI shall:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope

- Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements

9.1 Logical Termini

The termini for the project are MP 0 and MP 16 on I-15. This area covers the portions of I-15 most affected by the projected population and traffic growth. The 16 mile I-15 study area begins at the Utah/Arizona State line on the south and terminates at the State Route 9 (SR-9) Interchange on the north, where traffic volumes reduce by about 50 percent. SR-9 is a major highway that provides access to Hurricane, Zion National Park, and to northern Arizona via SR-59.

9.2 Independent Utility

The Selected Alternative would be a usable and reasonable expenditure even if no additional transportation improvements in the area are made.

9.3 Reasonably Foreseeable Transportation Improvements

The Selected Alternative would not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

10.0 LIMITATION ON CLAIMS NOTICE (23 USC 139[I])

FHWA will publish a notice in the Federal Register, pursuant to 23 USC 139(I), indicating that one or more federal agencies has taken final action on permits, licenses, or approvals for this transportation project. After the notice is published, claims seeking judicial review of those federal agency actions will be barred unless such claims are filed within 150 days after the date of publication of the notice, or within such shorter time period as is specified in the federal laws pursuant to which judicial review of the federal agency action is allowed.

11.0 CONCLUDING STATEMENT

The project is needed because the I-15 corridor between MP 0 and MP 16 lacks the capacity for 2040 future travel demand.

FHWA has determined that there has been proper consideration of avoidance alternatives to environmentally sensitive areas. Where avoidance is not practical, property mitigation has been provided for impacts resulting from the Selected Alternative.

12.0 DETERMINATION

FHWA has determined that the Selected Alternative in the EA, as previously stated, will have no significant impact on the human and natural environment. This FONSI is based on the EA, which has been independently evaluated by FHWA and determined to adequately and accurately discuss the need, environmental issues, impacts of the proposed project, and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement (EIS) is not required. FHWA takes full responsibility for the accuracy, scope, and content of the attached EA.

James Christian, PE
Division Administrator
Federal Highway Administration

1/24/2013
Date