Chapter 2: Alternatives

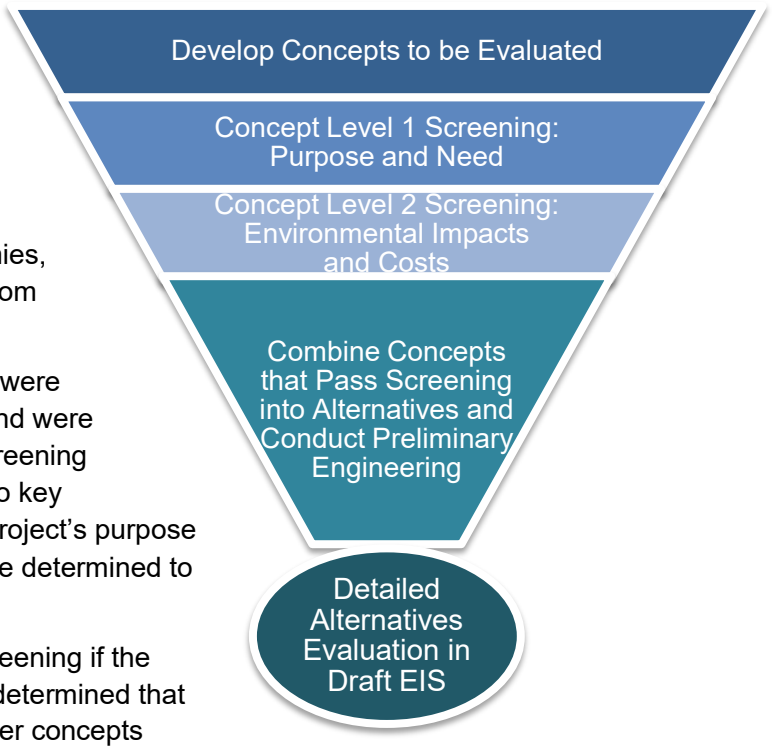
2.1 Introduction

This chapter describes the alternatives that were considered for meeting the purpose of the Interstate 15 (I-15): Farmington to Salt Lake City Project as described in Chapter 1, *Purpose and Need*. This chapter describes the alternatives that were developed during the scoping process, reviews the alternatives that were eliminated from further study through the alternatives screening process, describes the No-action Alternative and the Action Alternative (with options) that were carried forward for further study in this Environmental Impact Statement (EIS), and summarizes the advantages and disadvantages of the No-action and Action Alternatives.

2.2 Alternatives Development and Screening Process

Figure 2.2-1 presents an overview of the alternatives development and screening process. The project's purpose and need are the foundation of the alternatives screening process. Level 1 screening was based on the project's purpose. The project purpose is to improve safety, replace aging infrastructure, provide better mobility for all users, strengthen the state and local economies, and better connect communities along I-15 from Farmington to Salt Lake City.

Figure 2.2-1. Screening Process Overview



The concepts that passed Level 1 screening were determined to satisfy the project's purpose and were further refined and evaluated with Level 2 screening criteria to determine their expected impacts to key resources. Concepts that do not satisfy the project's purpose or that have identifiable adverse impacts were determined to be not reasonable.

Concepts were also eliminated in Level 2 screening if the Utah Department of Transportation (UDOT) determined that the concept would substantially duplicate other concepts advanced through Level 2 screening, would have impacts substantially similar to those of other concepts that are advanced through Level 2 screening, or would substantially duplicate other less harmful or less expensive concepts that were advanced through Level 2 screening. More details about the alternatives development and screening process are provided in Appendix 2A, *Alternatives Screening Report*.

The alternatives development and screening process is designed to be dynamic throughout the EIS process. If a new alternative or refinement of an alternative is developed or arises later in the EIS process, it will be considered using the same screening considerations and criteria as the other alternatives, as described in this chapter.

2.2.1 Range of Alternatives to be Evaluated in This EIS

The first phase in the alternatives development and screening process was identifying a list of initial concepts. To be considered an initial concept, a concept needed to be applicable to the study area defined in Section 1.1.3, *Description of the Needs Assessment Study Area and Logical Termini*, in Chapter 1, *Purpose and Need*, and needed to present a type of solution that could meet the project's purpose and identified transportation needs. The initial concepts were developed with input from existing transportation plans, the public, local municipal governments, stakeholders, and resource agencies.

UDOT developed the initial concepts based on previous planning studies and through input collected during the EIS public scoping period (April 11 to May 13, 2022) and from the input and responses provided during the draft alternatives public comment period (November 10, 2022, to January 13, 2023). These initial concepts were further developed based on input during the EIS public scoping period and draft alternatives public comment period.

Initial concepts related to bicyclist and pedestrian improvements were identified from existing plans and from the input gathered during the Smart Growth America workshops held in the spring of 2022. The Smart Growth America workshop attendees included local government officials and other community stakeholders and were focused on identifying bicyclist and pedestrian needs and concepts that could address these needs along the I-15 corridor.

UDOT identified potential concepts from the following previous transportation plans and studies (listed in chronological order):

- *I-15 North Corridor Downtown Salt Lake City to Kaysville – Draft Environmental Impact Statement* (UDOT 1998)
- *I-15 North and Commuter Rail Collaborative Design Planning Study* (UDOT and UTA 2009)
- *Salt Lake City Pedestrian and Bicycle Master Plan* (Salt Lake City 2015)
- *Wasatch Front Central Corridor Study* (UDOT and others 2015)
- *I-15 and Parrish Lane Single-point Urban Interchange (SPUI) Concept Report* (UDOT 2016)
- *I-15; 400 South, SLC and 2600 South, Woods Cross Traffic Study* (UDOT 2018)
- *Future of FrontRunner Final Report* (UTA 2018)
- *I-15 Northbound; I-215 South Interchange, Murray and 600 North, Salt Lake City; Traffic Study* (UDOT 2019)
- Wasatch Front Regional Council's *2019–2050 Regional Transportation Plan* (WFRC 2019)
- *Davis County I-15 Study* (UDOT 2020)
- *South Davis County Active Transportation Plan* (APD and TR 2020)
- *600/700 North Mobility, Safety, and Transit Improvements Study* (Salt Lake City 2021)

A summary of prior studies and recommendations is included in Section A.2, *Summary of Prior Studies and Recommendations*, of Appendix 1A, *Purpose and Need Chapter Supplemental Information*.

2.2.1.1 Consideration of Transit, Travel Demand Management, and Transportation System Management Alternatives

No standalone transit, travel demand management (TDM), or transportation system management (TSM) concepts were identified for the I-15 project because these concepts would not meet the purpose of the project. As standalone options, transit, TDM, or TSM concepts would not address aging infrastructure on I-15, improve safety on I-15, or meet the projected travel demand in 2050.

UDOT received many comments during the scoping period and alternatives development process requesting consideration of standalone (meaning no roadway improvement) transit concepts such as the double-tracking of FrontRunner commuter rail.

As described in Chapter 1, *Purpose and Need*, the 2050 no-action conditions for the project assume that all funded transit and roadway projects in the Wasatch Front Regional Council's (WFRC) 2019–2050 regional transportation plan (RTP) (including the planned Utah Transit Authority [UTA] FrontRunner Double Track projects and a new Davis–Salt Lake City Community Connector bus service project) would be constructed and operational.

Including these transit and roadway projects, including the FrontRunner Double Track projects, in the no-action conditions means that UDOT's analysis takes into account the benefits and impacts of these projects. In other words, the projected increased congestion and travel times under the 2050 no-action conditions will occur even assuming that all funded transit and roadway projects are completed.

Because the planned UTA FrontRunner Double Track projects are already part of the 2050 no-action conditions, a double-tracking project was not considered as a separate transit concept for the I-15 project. The projected ridership assumptions of future funded transit projects are included in WFRC's travel demand model and were reviewed to develop alternatives for the I-15 project that can support the 2050 travel demand in addition to the projected transit ridership. Additional evaluation of the transit concepts identified during the alternatives development process is included in Section 2.3.3, *Consideration of Transit, Travel Demand Management, and Transportation System Management Alternatives*, of Appendix 2A, *Alternatives Screening Report*.

The alternatives for the I-15 project considered by UDOT will accommodate all current and proposed transit projects identified in WFRC's 2019–2050 RTP (including the planned UTA FrontRunner

What is travel demand management (TDM)?

Travel demand management includes the application of strategies and policies to reduce travel demand, or to redistribute travel demand at different times or on other transportation facilities. Examples of TDM strategies could include but are not limited to tolling, congestion pricing, and encouragement of alternative work arrangements.

What is transportation system management (TSM)?

Transportation system management includes strategies or systems to optimize the operation and performance of a transportation system. Examples of TSM strategies could include but are not limited to ramp metering, signal optimizations, or improvements to transit system connections.

What is a travel demand model?

A travel demand model is a computer model that predicts the number of transportation trips (travel demand) in an area at a given time. The travel demand model used for the I-15 project is maintained by WFRC.

Double Track projects and a new Davis–Salt Lake City Community Connector bus service project). To ensure that the I-15 project's alternatives support all planned transit projects, UDOT's Level 1 screening criteria for this project include the criterion to "support the planned FrontRunner Double Track projects and enhance access and connectivity to FrontRunner and regional transit." UDOT is supporting the existing and planned transit network by working closely with UTA to provide adequate space for the planned double-tracking of FrontRunner, improving multimodal connections to the Woods Cross FrontRunner Station, and supporting all existing and planned bus routes that use I-15 or other roads in the I-15 study area. TDM is also included in the 2050 no-action conditions as part of the planned I-15 managed motorways project.

2.2.2 Alternatives Screening Phase

The initial concepts identified during the process described in Section 2.2.1, *Range of Alternatives to be Evaluated in This EIS*, were evaluated using a two-step screening process to determine which alternatives were reasonable and practicable and should be considered for further study in this EIS.

Level 1 screening quantitatively evaluated the range of preliminary concepts to determine which concepts would meet the project's purpose. Concepts that passed Level 1 screening were then evaluated using the Level 2 screening process.

Level 2 screening involved a primarily quantitative analysis to identify the reasonable conflicts to be studied further in the EIS. In part, Level 2 screening considered a concept's impacts to the natural and human environment.

Review of the Alternatives Screening Methodology Report. On April 11, 2022, the *Alternatives Development and Screening Methodology Report* describing the screening process that would be used in this EIS was placed on the project website and sent to cooperating and participating agencies for a 30-day public comment period that ended on May 13, 2022 (UDOT 2022a).

UDOT received 900 comments from agencies and the public on the draft version of the report. The majority of the comments were related to access to Glovers Lane from I-15 or West Davis Corridor, bicycle and pedestrian accommodations across I-15, new interchanges or interchange modifications, pavement quality, noise impacts, grade-separating railroads and local streets, and other alternative ideas relating to transit, TSM, TDM, tolling, and lane restrictions. UDOT reviewed all comments received and revised the *Alternatives Development and Screening Methodology Report* based on the public and agency input.

2.2.2.1 Level 1 Screening

What is the purpose of Level 1 screening?

Level 1 screening eliminates concepts that do not meet the purpose of the project.

Level 1 screening was based on the project purpose. Each of the initial concepts was evaluated using criteria that identified whether the concept would meet the purpose of the project. Concepts were screened out from further consideration by UDOT if they were determined to not meet the purpose of the project and/or would also not satisfy the standards under the National Environmental Policy Act (NEPA), the Clean Water Act, Section 4(f) of the Department of Transportation Act, and Section 6(f) of the Land and Water Conservation Fund Act. As a result, these concepts were not carried forward for further analysis.

The initial concepts were screened against criteria pertaining to travel demand, safety, and bicyclist and pedestrian access and connectivity (Table 2.2-1). To accommodate Level 1 screening, UDOT developed the initial concepts in sufficient detail to allow them to use the WFRC travel demand model to forecast the future traffic volumes and associated congestion for I-15. Not all measures apply to all project elements considered in the EIS. For example, delay and congestion measures do not apply to bicyclist and pedestrian crossing improvements.

Table 2.2-1. Level 1 Screening Criteria and Measures

Quality of Life Category	Criterion	Measure(s)
Improve Safety	Improve the safety and operations of the I-15 mainline, I-15 interchanges, bicyclist and pedestrian crossings, and connected roadway network.	• Does the concept meet UDOT's safety standards (such as curvature, lane and shoulder widths, access, and sight distance)? (Yes/No) • Does the concept meet UDOT's operational standards (such as traffic weaving, ramp operations, and queuing)? (Yes/No) • Can the concept be designed to reduce conflicts between motorized and bicyclist and pedestrian modes? (Yes/No) • Does the concept improve bicyclist and pedestrian accommodations at cross streets or interchanges? (Yes/No)
Better Connect Communities	Be consistent with planned land use, growth objectives, and transportation plans.	• Is the concept consistent with land use and transportation plans? (Yes/No)
	Support the planned FrontRunner Double Track projects and enhance access and connectivity to FrontRunner, to regional transit and trails, and across I-15.	• Does the concept provide sufficient space for the UTA to construct the planned FrontRunner Double Track projects? (Yes/No) • Can the concept be designed to improve connectivity to FrontRunner stations? (Yes/No) • Can the concept be designed to enhance bicyclist and pedestrian access across I-15 and connectivity to regional trails? (Yes/No)
Strengthen the Economy	Replace aging infrastructure on I-15.	• Does the concept address I-15 aging infrastructure needs? (Yes/No)
	Enhance the economy by reducing travel delay on I-15.	• Does the concept reduce daily hours of delay on I-15, interchanges, and cross streets in 2050? [a]
Improve Mobility for All Users [b]	Improve mobility and operations on the I-15 mainline, I-15 interchanges, connected roadway network, transit connections, and bicyclist and pedestrian facilities to help accommodate projected travel demand in 2050.	• Does the concept decrease through-traffic travel time on I-15 during the morning and evening peak periods? [a,c] • Does the concept improve average speed on I-15 during the morning and evening peak periods? [a,c]

[a] UDOT determined whether concepts met these measures when comparing the concepts' modeled metrics versus the no-action conditions in 2050.

[b] Measures for improving the mobility of transit and bicyclist and pedestrian modes are included in the "Improve Safety" and "Better Connect Communities" categories. These measures would improve mobility for transit and bicyclist and pedestrian modes. To avoid duplication, they are not repeated in the "Improve Mobility for All Users" category.

[c] Both of these metrics compare traffic conditions with the concepts versus the no-action conditions during the morning and evening peak 4-hour periods in 2050. Peak periods are the periods of the day with the greatest amounts of traffic. For the I-15 project, the morning peak period is from 6 AM to 10 AM, and the evening peak period is from 3 PM to 7 PM.

2.2.2.1.1 Public and Agency Review of the Preliminary Alternatives that Passed Initial Level 1 Screening

The results of the draft alternatives Level 1 screening process were published for agency and public review on November 10, 2022. The review and comment period was from November 10, 2022, through January 13, 2023. The process included an online public meeting on November 14, 2022; two in-person public meetings on November 15 and 16, 2022; meetings with three local area working group meetings; and 34 presentations or meetings with agencies or stakeholders. The concepts that passed Level 1 screening and were included in the November 2022 draft version of the *Alternatives Development and Screening Report: November 2022 Preliminary Results* are described in Table 2.2-2.

Table 2.2-2. I-15 Mainline and Interchange Concepts That Passed Level 1 Screening in the November Draft Alternatives Screening Report

Concept	Description
I-15 Mainline Concepts	
Widen I-15 to 3 Express Lanes and 3 to 4 General-purpose (GP) Lanes	Widen I-15 to 3 express lanes and 3 to 4 GP lanes in each direction. I-15 in Salt Lake County would have 3 GP lanes, and I-15 in Davis County would have 4 GP lanes.
I-15 5 GP Lanes Each Direction and 2 Reversible Lanes	Widen I-15 to 5 GP lanes in each direction. Widening includes 2 reversible lanes from 400 South in Salt Lake City to just north of Parrish Lane in Centerville (no intermediate access to the reversible lanes in between). The reversible lanes would allow southbound (SB) travel in the morning and northbound (NB) travel in the afternoon.
Widen I-15 to 5 GP Lanes and 1 High-occupancy/Toll (HOT) Lane	Widen I-15 to a roadway cross section of 5 GP lanes and 1 HOT lane (5+1) in each direction. This is consistent with the project proposed in UTA's long-range plan.
Widen I-15 to 5 GP Lanes and 2 HOT Lanes	Widen I-15 to a roadway cross section of 5 GP lanes and 2 HOT lanes (5+2) in each direction.
Widen I-15 to 6 GP Lanes and 1 HOT Lane	Widen I-15 to a roadway cross section of 6 GP lanes and 1 HOT lane (6+1) in each direction.
200 West/Glovers Lane/500 South Interchange Concepts (Farmington)	
Rebuild Existing Half Diamond Interchange at 200 West	Existing interchange configuration rebuilt to support a wider I-15 mainline. Includes safety improvements to bring the interchange up to current UDOT design standards.
New Full-access Interchange at 200 West	Full-access interchange at 200 West. Interchange would add a NB on-ramp and a SB off-ramp to 200 West near the current alignment.
SPUI at Glovers Lane	New SPUI with full access to I-15 at Glovers Lane. Includes 200 West NB off-ramp and SB on-ramp.
Centerville and Parrish Lane Interchange Concepts	
Tight Diamond Interchange at Parrish Lane and Frontage Road Connection	Tight diamond interchange at Parrish Lane with NB off-ramp that connects directly to frontage road on north side of Parrish Lane. East-side Frontage Road connection for north-south travel.
SPUI at Parrish Lane and Frontage Road Connection	SPUI with NB off-ramp that connects directly to frontage road on north side of Parrish Lane. Includes grade-separated bicyclist and pedestrian crossing at 200 North. East-side Frontage Road connection for north-south travel.

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Table 2.2-2. I-15 Mainline and Interchange Concepts That Passed Level 1 Screening in the November Draft Alternatives Screening Report

Concept	Description
400 North/500 West Interchange Concepts (Bountiful/West Bountiful)	
3/4 Partial Diamond Interchange at 400 North	Partial diamond interchange at 400 North. The interchange at 400 North would accommodate SB on- and off-ramps and the NB off-ramp. The NB on-ramp would be at 500 West.
Split Diamond Interchange at 400 North and 500 West	A split diamond interchange divides access to I-15 between 400 North and 500 West. The NB off-ramp and SB on-ramp would be at 400 North, and the SB off-ramp and NB on-ramp at 500 West. SB off-ramp would exit on right side instead of left side.
Collector-distributor (CD) between 500 South and 400 North	CD concept combined with a full diamond interchange at 500 South, full diamond interchange at 400 North, and NB on-ramp at 500 West.
Bountiful/West Bountiful 500 South Interchange Concepts	
Tight Diamond Interchange at 500 South	Tight diamond interchange at 500 South.
2600 South/1100 North Interchange Concepts (Woods Cross/North Salt Lake/Bountiful)	
Tight Diamond Interchange at 2600 South	Tight diamond interchange at 2600 South.
Two-lane SPUI at 2600 South and 800 West Connection	SPUI at 2600 South with a new SPUI at I-215 and a grade-separated bicyclist and pedestrian crossing parallel to the interchange. Adding a new SPUI at I-215 allows for a two-lane SPUI (instead of a three-lane SPUI) at 2600 South.
Center Street Interchange Concepts	
I-15 Overpass (no access)	I-15 would go over Center Street with no access. SB I-15 access to North Salt Lake would be provided with the new I-215 interchange or 2600 South interchange.
North Salt Lake/Woods Cross Interchange Concepts	
Full SPUI at Interstate 215 (I-215)	New, full SPUI with access to I-15 and I-215 from U.S. 89. This option has a T intersection on U.S. 89 and no Center Street SB off-ramp.
Salt Lake Area Interchange Concepts	
CD Interchange at 600 North and 1000 North	A CD interchange divides access to I-15 between 600 North and 1000 North and connects the access points with a CD road system. This interchange design is paired with a new full-access interchange at Warm Springs Road (2100 North) to provide the best traffic operations.
Two-lane SPUI at 600 North and West Side Frontage Road Connection to 1800 North	SPUI at 600 North with west side frontage road connecting the new Warm Springs Road full interchange at 1800 North. Adding a full interchange at Warm Springs Road allows a two-lane SPUI (instead of a three-lane SPUI) at 600 North.
Tight Diamond Interchange at 600 North	Tight diamond interchange with full access at 600 North. This concept does not include additional connections to 1000 North.
Tight Diamond Interchange at 1800 North	New tight diamond interchange at 1800 North. This interchange is paired with the two-lane SPUI at 600 North. This interchange does not pair with the 600 North and 1000 North CD interchange. This concept reduces truck traffic at 600 North.
Tight Diamond Interchange at 2100 North	New tight diamond interchange at 2100 North. This concept reduces truck traffic at 600 North.

In addition to the bicyclist and pedestrian crossings evaluated at interchange locations in Table 2.2-2 above, there were also 11 bicyclist and pedestrian crossing concepts in the study area that would reduce conflicts between travel modes and improve bicyclist and pedestrian accommodation. These 11 bicyclist and pedestrian concepts would work with any of the interchange concepts in each geographic area, would better connect communities, and would improve mobility and safety. The combined interchange and bicyclist and pedestrian crossing concepts in Table 2.2-2 above that passed Level 1 screening, and the 11 bicyclist and pedestrian improvements, were further analyzed in 2023 after the *Alternatives Development and Screening Report: November 2022 Preliminary Results* was published.

During the draft alternatives public comment period, 2,890 comments were received from the public and agencies. A summary of the public and agency comments is included in Attachment D, *Draft Alternatives Comment Summary*, of Appendix 2A. Full copies of all public and agency comments are provided in *I-15 EIS: Draft Alternatives Comments January 2023* (UDOT 2023b). The majority of the comments received were about community impacts, property impacts, impacts to environmental justice communities, air quality impacts, noise impacts, the need for the project, future travel demand, requests for transit, and comments on actions that are outside the jurisdiction of UDOT, such as requests for changes to zoning and land use. To a lesser degree, included among those comments were some new concepts, variations on existing concepts, and comments about the screening process and screening criteria.

Some commentors requested that UDOT work with other agencies such as UTA. UTA and several other State agencies are participating agencies on this EIS as documented in the *Coordination Plan for the I-15 Environmental Impact Statement from Farmington to Salt Lake City* (UDOT 2022b). Many agencies provided comments during the draft alternatives screening process. Those comments are also included in *I-15 EIS: Draft Alternatives Comments January 2023* (UDOT 2023b).

2.2.2.1.2 Evaluation of New Concepts Identified during the Public Comment Period

Table 2-4, *Preliminary Evaluation of Concepts Suggested during the Draft Alternatives Public Comment Period,* in Appendix 2A, *Alternatives Screening Report*, describes the new concepts or variations on existing concepts that were identified during the draft alternatives public comment period from November 10, 2022, to January 13, 2023. These public concepts were developed and evaluated to determine whether they would be considered mainline, interchange, or bicyclist and pedestrian concepts and then were evaluated to determine whether they would pass Level 1 and Level 2 screenings. This evaluation determined that one of the public concepts to tunnel or bury I-15 in Salt Lake City would meet the purpose of the project and was therefore reviewed in Level 2 screening.

Several other public and agency concepts requested grade-separated railroad crossing improvements at Center Street in North Salt Lake, 2600 South/1100 North in North Salt Lake, and 500 South in Woods Cross. These railroad crossings are separate projects in WFRC's 2019–2050 RTP. The I-15 Farmington to Salt Lake City EIS will be forward-compatible with the planned future projects to grade-separate the Center Street, 2600 South/1100 North, and 500 South railroad crossings.

Several other public and agency comments focused on final design–related items such as turn lanes (number, locations, start/end points, etc.), intersection types (signalized, stop, roundabouts, etc.), bicycle and pedestrian lanes (separation, location, priority, etc.), and landscaping and aesthetics. UDOT will consider these comments as part of higher-level design for the concepts that are advanced through Level 2 screening to the Draft EIS. UDOT will evaluate these comments along with roadway needs, bicyclist and pedestrian needs, and safety needs for all users while trying to minimize impacts to adjacent properties and other resources.

2.2.2.1.3 Final Level 1 Screening Results

After the comment period, review of new alternative suggestions, and additional review of traffic model performance, the following mainline and interchange concepts were determined to pass Level 1 screening and advanced to Level 2 screening (Table 2.2-3).

All bicycle and pedestrian options were advanced to Level 2 screening except for the underpass at 500 North in Salt Lake City. After a design review, UDOT determined that it was technically infeasible.

Table 2.2-3. Final I-15 Mainline and Interchange Concepts That Passed Level 1 Screening

Concept	Description	New Based on Public Comment
I-15 Mainline Concepts		
Widen I-15 to 3 Express Lanes and 3 to 4 GP Lanes	Widen I-15 to 3 express lanes and 3 to 4 GP lanes in each direction. I-15 in Salt Lake County would have 3 GP lanes, and I-15 in Davis County would have 4 GP lanes.	No
I-15 5 GP Lanes Each Direction and 2 Reversible Lanes	Widen I-15 to 5 GP lanes in each direction. Widening includes 2 reversible lanes from 400 South in Salt Lake City to just north of Parrish Lane in Centerville (no intermediate access to the reversible lanes in between). The reversible lanes would allow SB travel in the morning and NB travel in the afternoon.	No
Widen I-15 to 5 GP Lanes and 1 HOT Lane	Widen I-15 to a roadway cross section of 5 GP lanes and 1 HOT lane (5+1) in each direction. This is consistent with the project proposed in Utah's long-range plan.	No
Widen I-15 to 5 GP Lanes and 2 HOT Lanes	Widen I-15 to a roadway cross section of 5 GP lanes and 2 HOT lanes (5+2) in each direction.	No
Widen I-15 to 6 GP Lanes and 1 HOT Lane	Widen I-15 to a roadway cross section of 6 GP lanes and 1 HOT lane (6+1) in each direction.	No
Salt Lake Area Interchange Concepts		
CD Interchange at 600 North and 1000 North	A CD interchange divides access to I-15 between 600 North and 1000 North and connects the access points with a CD road system. This interchange design is paired with a new full-access interchange at Warm Springs Road (2100 North) to provide the best traffic operations.	No
Tight Diamond Interchange at 2100 North	New tight diamond interchange at 2100 North. This concept reduces truck traffic at 600 North.	No
Bury, cap and cover, or tunnel I-15 in Salt Lake City	Four tunnel options were evaluated for the segment of I 15 in Salt Lake City between North Temple and 600 North.	Yes
North Salt Lake/Woods Cross Interchange Concepts		
Full SPUI at I-215	New, full SPUI with access to I-15 and I-215 from U.S. 89. This option has a T intersection on U.S. 89 and no Center Street SB off-ramp.	No
Center Street Interchange Concepts		
I-15 Overpass (no access)	I-15 would go over Center Street with no access. SB I-15 access to North Salt Lake would be provided with the new I-215 interchange or 2600 South interchange.	No

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Table 2.2-3. Final I-15 Mainline and Interchange Concepts That Passed Level 1 Screening

Concept	Description	New Based on Public Comment
2600 South/1100 North Interchange Concepts (Woods Cross/North Salt Lake/Bountiful)		
Tight Diamond Interchange at 2600 South	Tight diamond interchange at 2600 South.	No
Two-lane SPUI at 2600 South and 800 West Connection	SPUI at 2600 South with a new SPUI at I-215 and a grade-separated bicyclist and pedestrian crossing parallel to the interchange. Adding a new SPUI at I-215 allows for a two-lane SPUI (instead of a three-lane SPUI) at 2600 South.	No
Bountiful/West Bountiful 500 South Interchange Concepts		
Tight Diamond Interchange at 500 South	Tight diamond interchange at 500 South.	No
400 North/500 West Interchange Concepts (Bountiful/West Bountiful)		
3/4 Partial Diamond Interchange at 400 North	Partial diamond interchange at 400 North. The interchange at 400 North would accommodate SB on- and off-ramps and the NB off-ramp. The NB on-ramp would be at 500 West.	No
Split Diamond Interchange at 400 North and 500 West	A split diamond interchange divides access to I-15 between 400 North and 500 West. The NB off-ramp and SB on-ramp would be at 400 North, and the SB off-ramp and NB on-ramp at 500 West. SB off-ramp would exit on right side instead of left side.	No
CD between 500 South and 400 North	CD concept combined with a full diamond interchange at 500 South, full diamond interchange at 400 North, and NB on-ramp at 500 West.	No
Centerville and Parrish Lane Interchange Concepts		
Tight Diamond Interchange at Parrish Lane and Frontage Road Connection	Tight diamond interchange at Parrish Lane with NB off-ramp that connects directly to frontage road on north side of Parrish Lane. East-side Frontage Road connection for north-south travel.	No
SPUI at Parrish Lane and Frontage Road Connection	SPUI with NB off-ramp that connects directly to frontage road on north side of Parrish Lane. Includes grade-separated bicyclist and pedestrian crossing at 200 North. East-side Frontage Road connection for north-south travel.	No
200 West/Glovers Lane/500 South Interchange Concepts (Farmington)		
Rebuild Existing Half Diamond Interchange at 200 West	Existing interchange configuration rebuilt to support a wider I-15 mainline. Includes safety improvements to bring the interchange up to current UDOT design standards.	No
New Full-access Interchange at 200 West	Full-access interchange at 200 West. Interchange would add a NB on-ramp and a SB off-ramp to 200 West near the current alignment.	No
SPUI at Glovers Lane	New SPUI with full access to I-15 at Glovers Lane. Includes 200 West NB off-ramp and SB on-ramp.	No

2.2.2.2 Level 2 Screening

Level 2 screening identifies and then eliminates concepts that are not practicable, feasible, and reasonable. During Level 2 screening, UDOT collectively evaluated the concepts that passed Level 1 screening against criteria that focus on the concepts' impacts to the natural and built environment, estimated project costs, logistical considerations, and technological feasibility. These Level 2 screening criteria also support UDOT's Quality of Life Framework categories of Good Health, Connected Communities, Strong Economy, and Better Mobility.

2.2.2.2.1 Level 2 Screening Methodology and Process

Public and agency comments received during the formal scoping comment period and the draft alternatives public comment period were particularly relevant during Level 2 screening because several of the Level 2 screening criteria focus on local and community elements and regulated resources such as housing and equity concerns. Table 2.2-4 lists the Level 2 screening criteria.

Table 2.2-4. Level 2 Screening Criteria and Measures

Criterion	Measure
Impacts to the natural environment	• Acres and types of aquatic resources (wetlands, streams, and springs) [a] • Linear feet of ditches and creeks affected • Acres of floodplains affected
Access to transit, bicyclist, and pedestrian facilities	• Number and relative quality of connections to regional transit facilities and regional trails
Impacts to Section 4(f) and Section 6(f) resources	• Number and types of Section 4(f) uses [b] • Number and types of Section 6(f) conversions [b]
Impacts to the built environment	• Number and area of parks, trails, and other recreation resources affected • Number of community facilities affected • Number of potential property acquisitions, including residential and business relocations • Number of cultural resources (for example, historic and archaeological resources) affected • Potential impacts and benefits to low-income or minority populations (environmental justice populations) [c]
Cost, technology, and logistics	• Estimated project cost (general) • Constructability given available technology • Logistical considerations

[a] Consistent with the avoidance and minimization concepts of the Clean Water Act, a concept with the potential to impact a substantially greater number of delineated aquatic features could be eliminated from detailed study in the EIS. However, UDOT will not eliminate a concept from detailed study in the EIS unless it is clear that the concept would not comply with the Clean Water Act Section 404(b)(1) Guidelines. For more information, see Section 1.3.2, *Clean Water Act Requirements*, in Appendix 2A, *Alternatives Screening Report*.

[b] Based on the requirements of Section 4(f) of the Department of Transportation Act of 1966 and Section 6(f) of the Land and Water Conservation Fund Act of 1965, a concept with substantially greater Section 4(f) or Section 6(f) impacts could be eliminated from detailed study in the EIS. For more information, see Section 1.3.3, *Section 4(f) and Section 6(f) Requirements*, in Appendix 2A, *Alternatives Screening Report*.

[c] Areas with higher percentages of low-income or minority populations are identified using U.S. Census data.

The criteria listed above in Table 2.2-4 were selected based on applicable federal laws—such as Section 4(f) of the U.S. Department of Transportation Act of 1966 and Section 404 of the Clean Water Act—and comments received during agency and public outreach. Waters of the United States and Section 4(f) properties were given special consideration during screening because federal laws require UDOT to consider and analyze alternatives that avoid or minimize impacts to these resources. See Section 1.3, *Reasons Why a Concept Might Be Eliminated during the Screening Process*, in Appendix 2A, *Alternatives Screening Report*, for more information regarding Section 4(f) of the of the Department of Transportation Act and Section 404 of the Clean Water Act.

The overall process for Level 2 screening includes the following steps:

1. Develop basic alignments and footprints, including rights-of-way, for the concepts carried forward from Level 1 screening. The concept design will try to minimize impacts to natural resources and the built environment while meeting design standards. Concepts that pass Level 2 screening will be further refined during the engineering process.
2. Review the concepts to make sure they continue to meet basic requirements for roadway design and safety.
3. Evaluate the concepts for costs, logistical considerations, and technological feasibility and determine whether any of the concepts would have substantially greater impacts or costs without having substantially greater benefits. Additionally, a concept may also be eliminated in Level 2 screening if it is determined that the concept would substantially duplicate or overlap other concepts advanced through Level 2 screening, would have impacts substantially similar to those of other concepts that are advanced through Level 2 screening, or would substantially duplicate other less harmful or less expensive concepts that are advanced through Level 2 screening.
4. Convert the concepts' footprints to geographic information systems (GIS) format and perform GIS analysis to determine the extent of resource impacts for each concept.
5. Compare the concepts' effects on the resources listed above in Table 2.2-4 to determine the practicable, feasible, and reasonable concepts that will be advanced for detailed analysis in the Draft EIS.

Using the information gathered from Level 2 screening, UDOT determined which concepts should be combined into corridor-wide alternatives to study in detail in the EIS. More information about each of these steps are provided in Appendix 2A, *Alternatives Screening Report*.

2.2.2.2.2 Alternatives Evaluated in Level 2 Screening

The mainline and interchange concepts evaluated in Level 2 screening are summarized above in Table 2.2-3.

The mainline Level 2 screening evaluation is described in Section 3.1.2, *Level 2 Screening for Mainline Concepts*, in Appendix 2A, *Alternatives Screening Report*. The Level 2 screening evaluation for the interchange and bicycle and pedestrian facilities are detailed in Section 3.2.3, *Level 2 Screening for Interchange and Bicyclist and Pedestrian Crossing Concepts*, in Appendix 2A.

2.2.2.2.3 Level 2 Evaluation and Results

Several mainline and interchange concepts were eliminated in Level 2 screening for additional impacts to resources or because the concept would substantially duplicate and have impacts similar to those of other concepts advanced through Level 2 screening.

Four I-15 mainline concepts were eliminated during Level 2 screening. The eliminated mainline concepts are summarized in Table 2.2-5. For more detail on these eliminated concepts, see Section 3.1.2, *Level 2 Screening for Mainline Concepts*, in Appendix 2A, *Alternatives Screening Report*.

Table 2.2-5. Initial Mainline Concepts Eliminated in Screening

Concept Name and Description	Reason for Elimination
I-15 Mainline General Widening Concepts	
Widen I-15 to 5 GP Lanes and 2 HOT Lanes	This concept was screened out in Level 2 screening because it would have additional resource impacts that were substantially more than those of the 5 GP and 1 HOT lane concept. The additional lanes proposed in these concepts were also not consistent with the WFRC 2019–2050 RTP's assumptions for I-15.
Widen I-15 to 6 GP Lanes and 1 HOT Lane	This concept was screened out in Level 2 screening because it would have additional resource impacts that were substantially more than those of the 5 GP and 1 HOT lane concept. The additional lanes proposed in these concepts were also not consistent with the WFRC 2019–2050 RTP's assumptions for I-15.
I-15 Mainline Express Lane and Reversible Express Lane Concepts	
Widen I-15 to 3 Express Lanes and 3 to 4 GP Lanes	This concept was screened out in Level 2 screening because it would have additional resource impacts that were substantially more than those of the 5 GP and 1 HOT lane concept. The additional lanes proposed in these concepts were also not consistent with the WFRC 2019–2050 RTP's assumptions for I-15.
I-15 5 GP Lanes Each Direction and 2 Reversible Lanes	This concept was screened out in Level 2 screening for the additional resource impacts; for the additional operational, maintenance, and emergency response considerations for the reversible lanes; and for the inconsistency with the HOT lanes on I-15 north and south of the project area.

Eleven interchange concepts were eliminated during Level 2 screening. The options and reasons for elimination are summarized in Table 2.2-6. More details about this process are available in Section 3.2.3, *Level 2 Screening for Interchange and Bicyclist and Pedestrian Crossing Concepts*, in Appendix 2A, *Alternatives Screening Report*.

Table 2.2-6. Initial Interchange Concepts Eliminated in Level 2 Screening

Concept Name and Description	Reason for Elimination
Farmington Interchange Concepts	
Option B	UDOT eliminated Farmington Option B in Level 2 screening due to the substantially higher impacts to residential properties and the change in traffic patterns that would result in higher traffic volumes on residential roads that have not been planned to accommodate traffic accessing an I-15 interchange.
Option C	UDOT eliminated Farmington Option C because it would substantially duplicate Farmington Option A and would result in impacts substantially similar to but slightly higher than those of Farmington Option A.
Centerville Interchange Concepts	
Option A	UDOT eliminated Centerville Option A because it would substantially duplicate Option B and would result in impacts similar to but slightly higher than those of Option B.
Bountiful/West Bountiful Interchange Concepts	
Option B	UDOT eliminated Bountiful/West Bountiful Option B because it would substantially duplicate Bountiful/West Bountiful Option A and would result in impacts substantially similar to but slightly greater than those of Bountiful/West Bountiful Option A.
Option C	UDOT eliminated Bountiful/West Bountiful Option C because it would substantially duplicate Bountiful/West Bountiful Option A and would result in impacts substantially similar to but slightly greater than those of Bountiful/West Bountiful Option A.
North Salt Lake/Woods Cross Interchange Concepts	
Option A	UDOT eliminated North Salt Lake/Woods Cross Option A because it would substantially duplicate Option B and would result in impacts substantially similar to those of Option B.
Salt Lake Area Interchange Concepts	
600 North 800 West Roundabout	The roundabout at 600 North and 800 West was eliminated because it would result in four relocations of residential properties and one historic property/Section 4(f) resource that would be avoided with Salt Lake Option A.
Tunnel Option A	All tunnel options were eliminated for the same reasons. All four of the tunnel options were screened out due to the substantially higher impacts to the community and higher costs compared to the original Salt Lake Option A.
Tunnel Option B	
Tunnel Option C	
Tunnel Option D	

2.2.2.2.4 Summary of the Results of the Alternatives Development and Screening Process

Based on the results of the alternatives development and screening process, UDOT advanced the following alternatives for further study in the EIS:

- No-action Alternative
- Action Alternative

The Action Alternative includes the 5 general-purpose (GP) + 1 high-occupancy/toll (HOT) lane mainline concept combined with the concepts for each of the five geographic areas that passed Level 1 and Level 2 screening.

The Action Alternative also includes the following subarea options:

- Farmington
  - 400 West Option
  - State Street Option
- Bountiful 400 North
  - Northern Option
  - Southern Option
- Bountiful 500 South
  - Northern Option
  - Southern Option
- Salt Lake City 1000 North
  - Northern Option
  - Southern Option

A summary of the interchange and bicyclist and pedestrian concepts that were advanced past Level 2 screening as part of the Action Alternative are listed in Table 2.2-7. Figures, graphics, and more detailed information about the features of the Action Alternative are included in Section 2.4.2, *Action Alternative*.

Table 2.2-7. I-15 Interchange and Bicyclist and Pedestrian Concepts That Passed Level 2 Screening by Location

Geographic Area Selected Concept	Limits	Interchange and Bicyclist and Pedestrian Crossing Features	Subarea Options for Location
Farmington Option A	Centerville boundary to U.S. 89	**Existing 200 West SB on-ramp and NB off-ramp (Figure 2.4-1, Figure 2.4-2, Figure 2.4-3, Figure 2.4-4, and Figure 2.4-5)** • No free right-hand turns for vehicles and better sight lines, thereby enhancing safety for bicyclists and pedestrians. • Glovers Lane bridge over I-15 and the railroad tracks is widened to include a 10-foot-wide sidewalk on the north side, a 6-foot-wide sidewalk on the south side, and buffered or barrier-separated bike lanes on both sides to match the facilities going over Legacy Parkway (Figure 2.4-3). • State Street/Clark Lane bridge over I-15 and the railroad tracks is widened to include buffered or barrier-separated bike lanes and sidewalks on both sides that match the facilities going over Legacy Parkway (Figure 2.4-5).	**Existing 200 West SB on-ramp and NB off-ramp (Figure 2.4-2)** • Farmington 400 West Option • Farmington State Street Option
Centerville Option B	Pages Lane/ 1600 North to Farmington boundary	**Parrish Lane SPUI with NB connection to east frontage road (Figure 2.4-6 , Figure 2.4-7, Figure 2.4-8, and Figure 2.4-9)** • No free right-hand turns for vehicles and better sight lines, thereby enhancing safety for bicyclists and pedestrians. • 12-foot-wide SUPs on the north and south sides of Parrish Lane (Figure 2.4-8). • Grade-separated 14-foot-wide SUP crossing of I-15 and railroad tracks at 200 North (Figure 2.4-7). • New grade-separated 14-foot-wide SUP crossing at Centerville Park over I-15/railroad tracks/Legacy Parkway (Figure 2.4-9).	• Not applicable
Bountiful/ West Bountiful Option A	1500 South to Pages Lane/ 1600 North	**500 South diamond interchange and 400 North/500 West half-diamond interchange (Figure 2.4-10, Figure 2.4-11, Figure 2.4-12, Figure 2.4-13, and Figure 2.4-14)** • No free right-hand turns for vehicles and better sight lines, thereby enhancing safety for bicyclists and pedestrians. • 12-foot-wide SUP on both sides of 500 South (Figure 2.4-13). • Buffered or barrier-separated bike lanes on both sides of 400 North (Figure 2.4-14). • 12-foot-wide SUP on the north side of 400 North (Figure 2.4-14). • 6-foot-wide sidewalk on the south side of 400 North (Figure 2.4-14). • New SUP connection from 500 South to Woods Cross FrontRunner Station west of I-15. • Wider bridge over 1600 North/Pages Lane to accommodate future bicyclist and pedestrian improvements (Figure 2.4-15).	**500 South diamond interchange (**Figure 2.4-12**)** • Bountiful 500 South – Northern Option • Bountiful 500 South – Southern Option **400 North/500 West half diamond interchange (**Figure 2.4-11**)** • Bountiful 400 North – Northern Option • Bountiful 400 North - Southern Option

(*continued on next page*)

Table 2.2-7. I-15 Interchange and Bicyclist and Pedestrian Concepts That Passed Level 2 Screening by Location

Geographic Area Selected Concept	Limits	Interchange and Bicyclist and Pedestrian Crossing Features	Subarea Options for Location
North Salt Lake/Woods Cross Option B	County boundary to 1500 South	**New I-215/U.S. 89 local interchange and 2600 South SPUI (Figure 2.4-16, Figure 2.4-17, Figure 2.4-18, Figure 2.4-19, Figure 2.4-20, Figure 2.4-21, and Figure 2.4-22)** • New U.S. 89 12-foot-wide SUP between Eagle Ridge Drive in North Salt Lake and Wall Street/200 West in Salt Lake City (Figure 2.4-27). • Center Street buffered or barrier-separated bike lanes on both sides, 6-foot-wide sidewalk on north side, and 12-foot-wide SUP improvements on south side of Center Street between I-15 and 400 West (Figure 2.4-17). • Wider bridge over Main Street to accommodate future bicyclist and pedestrian improvements (Figure 2.4-18). • At 2600 South, no free right-hand turns for vehicles and better sight lines, thereby enhancing safety for bicyclists and pedestrians. • Buffered or barrier-separated bike lanes on both sides of 2600 South (Figure 2.4-19). • 8-foot-wide sidewalk on north side of 2600 South (Figure 2.4-19). • 14-foot-wide grade-separated SUP on south side of 2600 South (Figure 2.4-20). • 800 West: new underpass of I-15 with new 12-foot-wide SUP. 12-foot-wide SUP connection between 800 West and 2600 South on west side of I-15 (Figure 2.4-21). • Wider bridge over 1500 South to accommodate future bicyclist and pedestrian improvements (Figure 2.4-22).	• Not applicable
Salt Lake County Option A	400 South to county boundary	**600 North CD and 2100 North full diamond interchange (Figure 2.4-23, Figure 2.4-24, Figure 2.4-25, Figure 2.4-26, and Figure 2.4-27)** • No free right-hand turns and better sight lines for vehicles, thereby enhancing safety for bicyclists and pedestrians. • Buffered or barrier-separated bike lanes and 8-foot-wide sidewalks on both sides of 600 North (Figure 2.4-25). • 12-foot-wide shared-use path (SUP) on 1000 North that crosses under I-15 and connects to Warm Springs Road east of I-15 (Figure 2.4-26). • 400 North: new sidewalks and roadway crossing under I-15 . • New U.S. 89 12-foot-wide SUP between Eagle Ridge Drive in North Salt Lake and Wall Street/200 West in Salt Lake City (Figure 2.4-27).	**1000 North (Figure 2.4-24)** • Salt Lake City 1000 North – Northern Option • Salt Lake City 1000 North – Southern Option

2.3 Alternatives Refinement Process

The purposes of the alternatives refinement process were to further refine and develop the Action Alternative and to develop a construction footprint for evaluating the impacts of the Action Alternative in the Draft EIS. The alternatives refinement process was conducted to address:

- Nonmotorized transportation components (bicycle and pedestrian accommodations)
- Drainage design and stormwater management
- Access and connectivity to local road networks
- Access to businesses
- Conflicts with major infrastructure and utilities
- Avoidance or minimization of impacts to key resources
- Avoidance or minimization of private property impacts
- Avoidance or minimization of recreation areas and trails
- Areas potentially impacted temporarily during construction

When refining the alternative alignments, UDOT used input from stakeholders during the scoping process, public and agency comments on the initial alternatives, and stakeholder interviews. These activities and input included the following:

- Meetings with Cities and Counties to review alternatives and identify:
  - Bicycle and pedestrian facility types and locations
  - Business accesses
  - Planned local road projects
  - Planned development in the study area
  - Stormwater treatment approach
- Meetings with major utility providers
- City council meetings
- Meetings with local and regional stakeholders such as neighborhood representatives, owners of large properties, industry groups, and local elected officials

2.3.1 Roadway Design Standards

When developing projects through the NEPA process, UDOT follows established design standards. UDOT's standards are in place to ensure the safety of the traveling public by providing curvature, grade, and dimensional standards; separation from roadside obstructions; space for vehicles to pull out of traffic in an emergency; adequate distance to see intersections; and a safe place for cyclists and pedestrians. Standards are also important for roadway operations such as providing an area for storing plowed snow and conducting routine maintenance safely.

Following screening, engineers revised the alternatives in accordance with the UDOT adopted standards described in Table 2.3-1 through Table 2.3-3. The right-of-way dimensions used for the design of the Action Alternative are based on the roadway geometric standards in *A Policy on Geometric Design of Highways and Streets*, 7th Edition (AASHTO 2018); in *Roadside Design Guide*, 4th Edition (AASHTO 2011); and on UDOT's standards, including UDOT's *Roadway Design Manual* (UDOT 2021) and UDOT's *2024 Standard Specifications and Standard Drawing Books* (UDOT 2023a). UDOT uses these standards in planning roadway projects to ensure that safety standards are met.

Table 2.3-1. Cross-section Components and Dimensions for I-15

Component	Dimension	Standard or Reference	Notes
Clear zone	30 feet	AASHTO 2011 [a]	• Clear zone is measured from the edge of travel lane • Based on design speed and average daily traffic
Inside shoulder	12 feet	UDOT 2021 [b]	• Includes a 2-foot shy distance to the concrete barrier
Outside shoulder	12 feet	UDOT 2021 [b]	• Includes a 2-foot shy distance to the concrete barrier
Travel lane	12 feet	UDOT 2021 [b]	• Lane width for general purpose lanes. • 11 feet for HOT lanes

[a] AASHTO 2011: *Roadside Design Guide*
[b] UDOT 2021: *UDOT Roadway Design Manual*

Table 2.3-2. Cross-section Components and Dimensions for Ramps

Component	Dimension	Standard or Reference	Notes
Clear zone	16 to 22 feet	AASHTO 2011 [a]	• Clear zone is measured from the edge of travel lane • Based on design speed and average daily traffic
Inside shoulder	4 feet	UDOT 2021 [b]	• Where barrier is present, a 2-foot shy distance would be added
Outside shoulder	8 feet	UDOT 2021 [b]	• Where barrier is present, a 2-foot shy distance would be added
Travel lane	12 feet	UDOT 2021 [b]	• Lane width for through and turn lanes on-ramps.

[a] AASHTO 2011: *Roadside Design Guide*
[b] UDOT 2021: *UDOT Roadway Design Manual*

Table 2.3-3. Cross-section Components and Dimensions for Cross-Streets

Component	Dimension	Standard or Reference	Notes
Clear zone	10 to 22 feet	AASHTO 2011 [a]	• Clear zone is measured from the edge of travel lane • Based on design speed and average daily traffic • Clear zone can include park strip and sidewalk
Shoulder	4 to 10 feet	UDOT 2021 [b]	• 4-foot-wide bicycle lane can be included within shoulder • Width is based on road classification, amount of truck traffic, and number of lanes
Travel lane	11 to 12 feet	UDOT 2021 [b]	• Lane width for general purpose lanes. • Width is based on road classification, amount of truck traffic, and number of lanes
Median/center turn lane	11 to 14 feet	UDOT 2021 [b]	• Width is based on road classification and design speed
Curb and gutter	2.5 feet	UDOT 2024 [c]	• Standard UDOT curb and gutter type B1 would be used for design speeds equal to or less than 50 mph • Standard UDOT curb and gutter type M1 would be used for design speeds greater than 50 mph
Park strip	4 feet	UDOT 2024 [c]	• None
Sidewalk	5 feet	UDOT 2024 [c]	• 5 feet minimum when a park strip is present • 6 feet minimum when a park strip is eliminated and sidewalk is adjacent to the curb and gutter.

[a] AASHTO 2011: *Roadside Design Guide*
[b] UDOT 2021: *UDOT Roadway Design Manual*
[c] UDOT 2024: *2024 Standard Specifications and Standard Drawing Books*

Figure 2.3-1 and Figure 2.3-2 show the typical sections for the Action Alternative mainline and ramps.

Figure 2.3-1. Action Alternative Mainline Typical Section

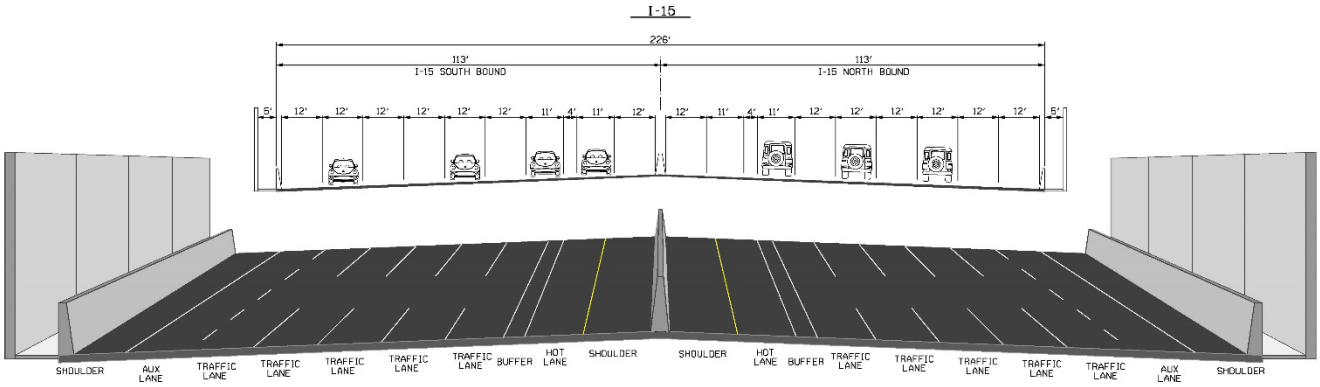
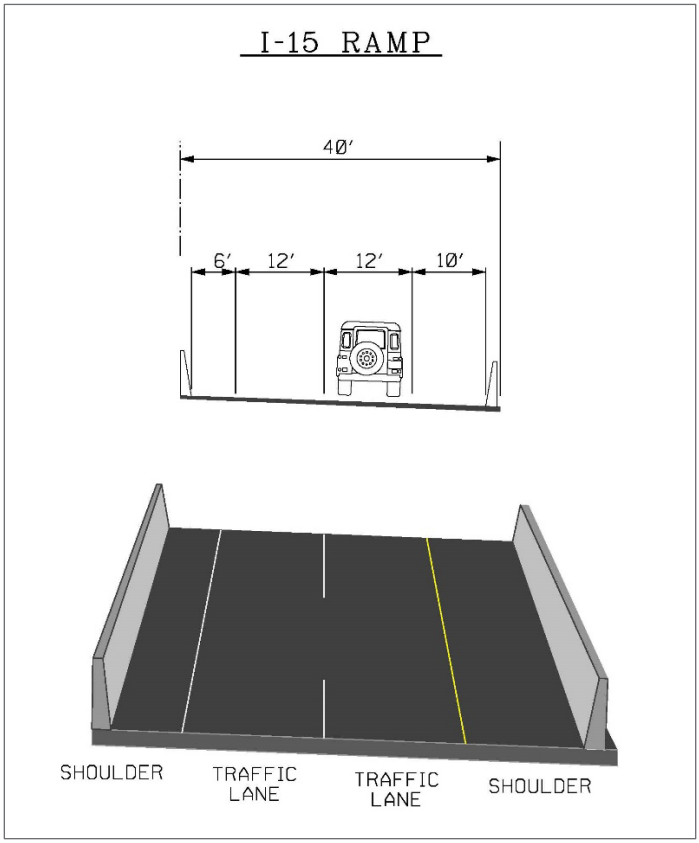


Figure 2.3-2. Action Alternative Ramp Typical Section



2.3.2 Roadway Design Changes

Two notable changes were made to roadway components of the Action Alternative after the alternatives screening process. These two changes included the following items:

- The design between 500 South and 400 North in Bountiful/West Bountiful was revised to propose braided ramps instead of auxiliary lanes for both the northbound and southbound directions. This change was made because the ramp spacing between 500 South and 400 North with the auxiliary lanes would not meet interchange spacing standards. The braided ramps would improve safety by reducing the amount of merging and weaving between 500 South and 400 North. The braided ramps are shown in Figure 2.4-10, *Action Alternative: Bountiful/West Bountiful Segment*, Figure 2.4-11, *Bountiful/West Bountiful Option A – 400 North – Northern and Southern Options*, and Figure 2.4-12, *Bountiful/West Bountiful Option A – 500 South – Northern and Southern Options*, in Section 2.4.2, *Action Alternative*.
- The design of the east side access for the Salt Lake City 1000 North – Northern Option north of 600 North was changed to provide a new northbound on-ramp and off-ramp access to Warm Springs Road on the east side of I-15 near 800 North and eliminate access to and from Warm Springs Road near 1100 North. This change was made to improve access and reduce impacts to businesses on Warm Springs Road. With this change, the Salt Lake City 1000 North – Northern Option would still provide full I-15 access to the west side of I-15 from the 1000 North interchange. The new east-side access for the Salt Lake City 1000 North – Northern Option is shown in Figure 2.4-23, *Action Alternative: Salt Lake Segment*, and Figure 2.4-24, *Salt Lake City 1000 North – Northern and Southern Options*, in Section 2.4.2, *Action Alternative*.

The roadway facilities included in the Action Alternative are described in Section 2.4.2, *Action Alternative*.

2.3.3 Pedestrian and Bicyclist Facilities

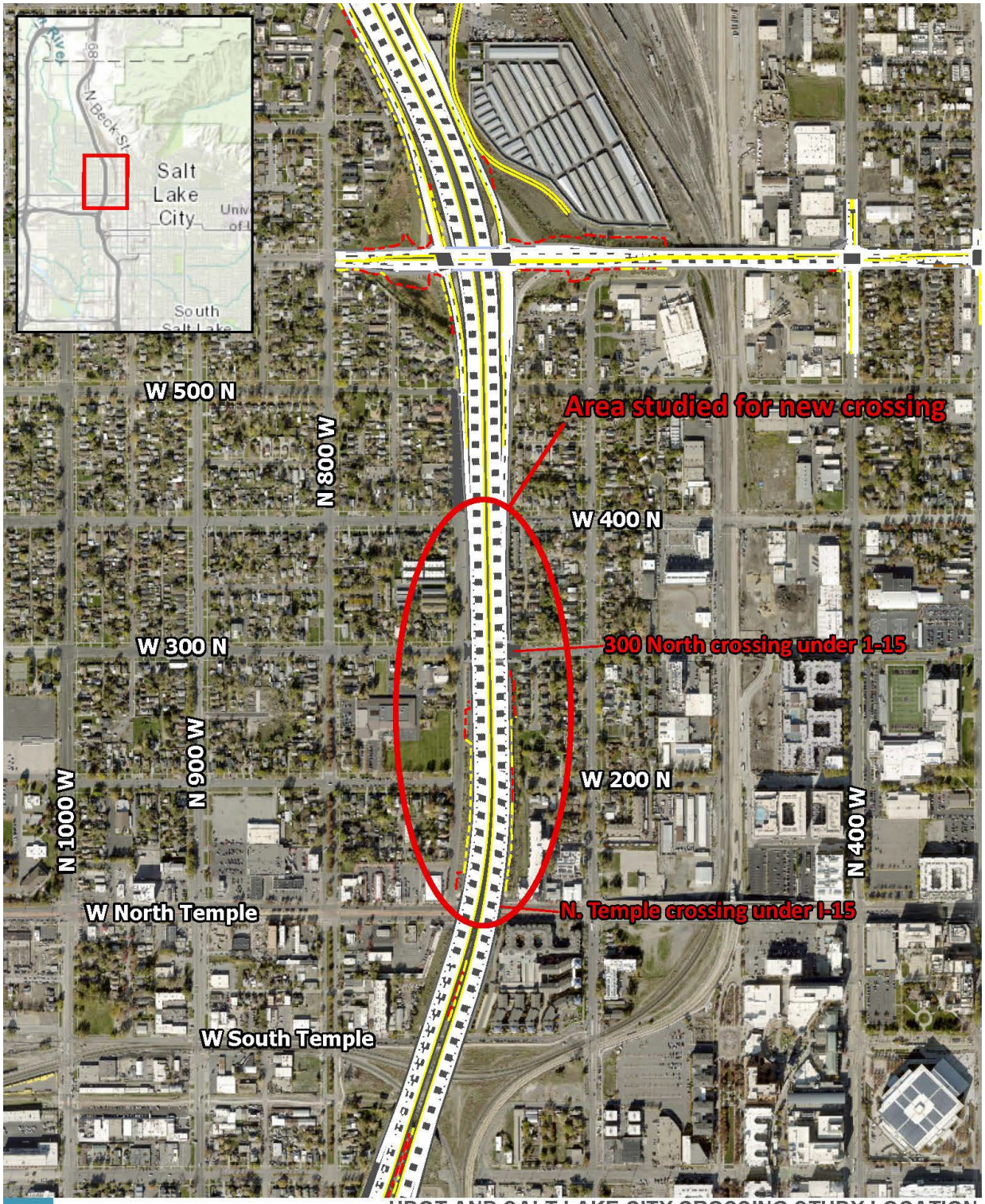
For the Action Alternative and its segment options, UDOT continued to refine the conceptual pedestrian and bicyclist facility designs in coordination with the local Cities and Counties. Some of these refinements included facility widths, decisions regarding which side of the cross streets there would be shared-use paths and/or sidewalks, and connections of the pedestrian and bicyclist facilities with the existing local pedestrian and bicyclist facilities.

2.3.3.1 UDOT and Salt Lake City Crossing Study

A new crossing under I-15 was considered at 400 North in Salt Lake City during the draft alternatives development and screening process for this EIS. In response to mixed feedback from the community for the new 400 North crossing in Salt Lake City, UDOT removed this crossing from the Action Alternative in the Draft EIS. To meet the project purpose of "better connecting communities," UDOT is working with Salt Lake City and the local community to evaluate a potential new crossing under I-15 between 400 North and North Temple (Figure 2.3-3). If a location for a new crossing is identified through this additional study, UDOT will include this location in the Action Alternative. The crossing study was ongoing when this Draft EIS was released.

The pedestrian and bicyclist facilities included in the Action Alternative are described in Table 2.4-2, *Action Alternative Pedestrian and Bicyclist Improvements by Location*, in Section 2.4.2, *Action Alternative*.

Figure 2.3-3. Extent of the UDOT and Salt Lake City Crossing Study



UDOT AND SALT LAKE CITY CROSSING STUDY LOCATION
I-15 EIS: FARMINGTON TO SALT LAKE CITY

2.3.4 Avoidance and Minimization Process

2.3.4.1 Wetlands and the Waters of the United States

During the design process, UDOT evaluated opportunities to further avoid and minimize water resource impacts. These steps included the following:

- Refined the alignment near the 2100 North interchange in Salt Lake City to minimize impacts to aquatic resources. This area has the highest amount of aquatic resources the study area. UDOT tried to use the existing right-of-way as much as possible to minimize impacts to aquatic resources in this area.
- Stormwater treatment design incorporated several best management practices designed to manage and minimize the effects of roadway stormwater discharges to surface and groundwater quality by reducing the total volume of water that runs off a roadway and reducing the concentrations of pollutants in the stormwater.

2.3.4.2 Property Impacts

During the alternatives design process, UDOT evaluated opportunities to avoid and minimize right-of-way impacts to private properties and recreation resources. These steps included the following:

- Optimize the design of I-15 mainline to include retaining walls to reduce the number of relocations.
- Optimize the design of I-15 mainline east and west to reduce property impacts.
- Explored north and south shifts at all interchange cross streets to minimize property and business impacts where feasible.
- Develop the horizontal and vertical alignments to inform potential right-of-way and easement extents.

2.4 Alternatives Considered for Detailed Study

Based on the results of the alternatives development and screening process, UDOT advanced the following alternatives for further study in this EIS:

- No-action Alternative
- Action Alternative

The Action Alternative includes the 5 GP + 1 HOT lane mainline concept combined with the concepts for each of the five geographic areas that passed Level 1 and Level 2 screening.

The Action Alternative also includes the following subarea options:

- Farmington
  - 400 West Option
  - State Street Option
- Bountiful 400 North
  - Northern Option
  - Southern Option
- Bountiful 500 South
  - Northern Option
  - Southern Option
- Salt Lake City 1000 North
  - Northern Option
  - Southern Option

This section provides a detailed description of each option. In order to conduct a detailed evaluation of the Action Alternative and the options listed above, UDOT developed preliminary engineering and cost estimates for the Action Alternative and its options.

Appendix 2B, *Action Alternative Design Figure Series*, includes figures that show the designs and roadway plans of the Action Alternative and options. The roadway plans are at a closer scale and show how the improvements for each alternative would be located relative to the existing roadway. Interactive maps are also available on the project website: https://i15eis.udot.utah.gov.

2.4.1 No-action Alternative

NEPA requires an analysis of the No-action Alternative. This alternative serves as a baseline so that decision-makers can compare the environmental effects of the Action Alternative.

If no action is taken on the I-15 Farmington to Salt Lake City EIS, UDOT would continue to make minor maintenance improvements such as rehabilitating pavement and rehabilitating or replacing structures along the corridor. Overall, with the No-action Alternative, the basic design of I-15 and the interchanges in the I-15 EIS study area would not change.

2.4.2 Action Alternative

Figure 2.4-1 through Figure 2.4-28 beginning on page 2-31 show the termini, facility type, interchanges, cross streets, pedestrian and bicyclist facilities, and alignment of the Action Alternative.

Northern Terminus. The northern terminus is the U.S. 89 interchange in Farmington (milepost 324.4). The Action Alternative would make improvements to the northbound I-15 to northbound U.S. 89 ramp and the southbound U.S. 89 to southbound I-15 ramp but would not affect any of the ramp movements between Legacy Parkway and I-15, between Legacy Parkway and U.S. 89, or any ramp movements to or from Park Lane.

Southern Terminus. The southern terminus is the 400 South interchange in Salt Lake City (milepost 308.2). The Action Alternative would make improvements to the northbound on-ramp and southbound off-ramp at 400 South. The Action Alternative would maintain the existing ramps to and from I-80 west, which is located near 200 South.

Mainline Facility Type. The Action Alternative includes the 5 GP + 1 HOT lane mainline concept which means it would have one HOT lane and five GP lanes in each direction. Most segments of the Action Alternative would also include auxiliary lanes that would begin with an on-ramp that would continue on to the next off-ramp without merging into the GP lanes. For example, at 2600 South, the northbound on-ramp would continue north without merging onto I-15 and become the northbound off-ramp at 500 South.

Interchanges and Cross Streets. The Action Alternative would have cross numerous streets and would require various cross street configurations: interchanges, overpasses, underpasses, and cul-de-sacs. Table 2.4-1 provides an overview of the interchange and cross- street configurations for the Action Alternative. The edge of the UDOT right-of-way would include a chain link or similar type of fence.

Table 2.4-1. Action Alternative Interchanges and Crossings

Cross Street	Road Jurisdiction	Interchange	Cross Street Over	Cross Street Under	Shared-use Path
State Street	Farmington		X		
200 West	Farmington	Half interchange; southbound on-ramp and northbound off-ramp	X (southbound on-ramp only)		
Glovers Lane	Farmington		X		
West Davis Corridor	Farmington	System-to-system			
Centerville Park SUP	Centerville				X (over I-15)
Parrish Lane	Centerville	SPUI	X		
200 North SUP	Centerville				X (over I-15)
1600 North/ Pages Lane	Centerville/West Bountiful			X	
500 West	West Bountiful/Bountiful	Half interchange; southbound off-ramp and northbound on-ramp		X (southbound off-ramp only)	
400 North	West Bountiful/Bountiful	Half interchange; southbound on-ramp and northbound off-ramp	X		
500 South	West Bountiful/Bountiful/ Woods Cross	Diamond		X	
1500 South	Woods Cross			X	
800 West	Woods Cross			X	
2600 South/ 1100 North	Woods Cross/North Salt Lake	SPUI		X	
SUP at 2600 South/ 1100 North	Woods Cross/North Salt Lake				X (over I-15 ramps, but under mainline I-15)
Main Street	North Salt Lake			X	
Center Street	North Salt Lake			X	
I-215	North Salt Lake	System-to-system for SB I-15 to WB I-215 and EB I-215 to NB I-15	X		
I-215/U.S. 89	North Salt Lake	SPUI	X		

(*continued on next page*)

Table 2.4-1. Action Alternative Interchanges and Crossings

Cross Street	Road Jurisdiction	Interchange	Cross Street Over	Cross Street Under	Shared-use Path
Warm Springs Road/Union Pacific Railroad/ UTA railroads	Salt Lake City			X	
2100 North	Salt Lake City	Diamond	X		
1000 North	Salt Lake City	Diamond with collector-distributor to 600 North		X	
600 North	Salt Lake City	Diamond with collector-distributor to 1000 North	X		
300 North	Salt Lake City			X	
North Temple	Salt Lake City			X	
South Temple/ Railroad	Salt Lake City			X	
200 South	Salt Lake City			X	
I-80	Salt Lake City	System to System	X (I-80 EB to I-15 NB)	X (I-15 NB to I-80 WB)	
400 South	Salt Lake City	Diamond		X	

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Figure 2.4-1. Action Alternative: Farmington Segment

Figure 2.4-2. Farmington State Street/Frontage Road and 400 West/Frontage Road Options

Figure 2.4-3. Action Alternative: Glovers Lane Farmington

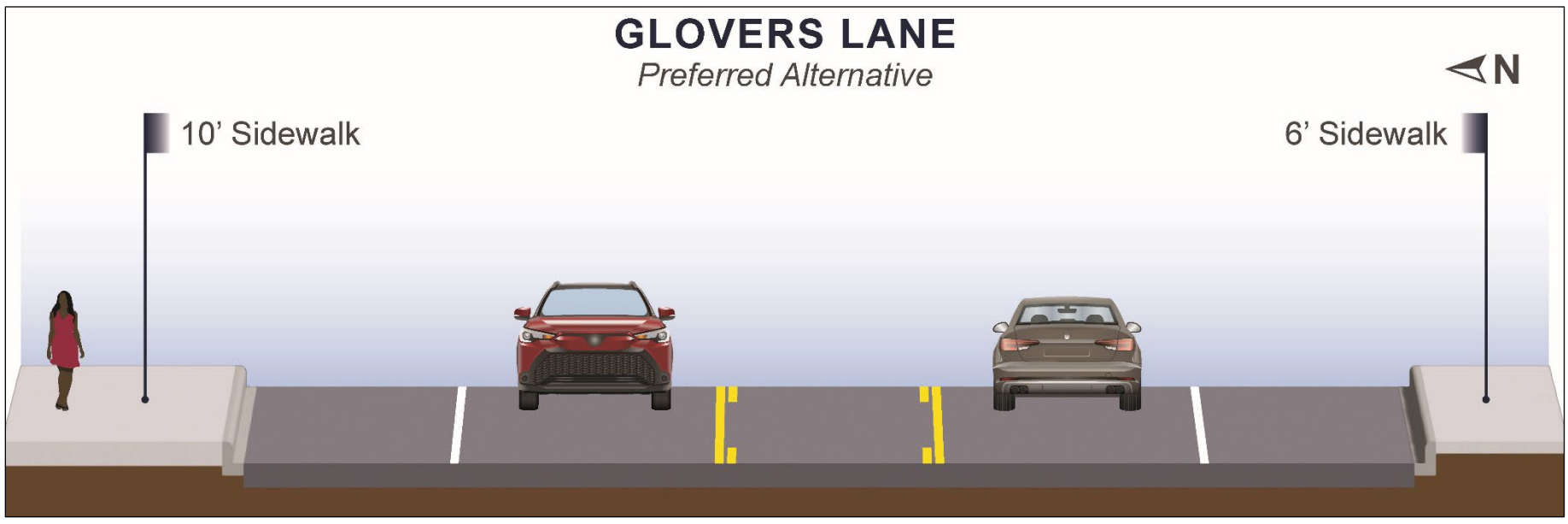


Figure 2.4-4. Action Alternative: 200 West Farmington

Figure 2.4-5. Action Alternative: State Street Farmington

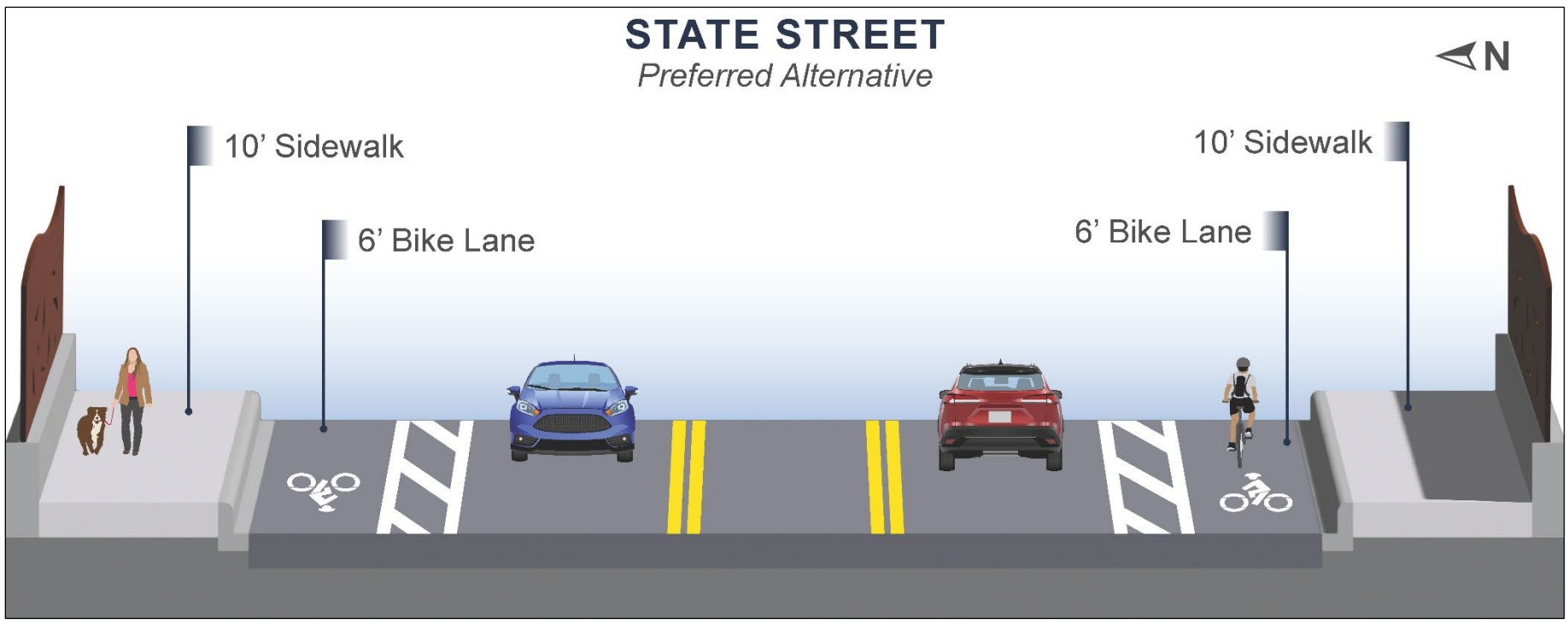


Figure 2.4-6. Action Alternative: Centerville Segment

Figure 2.4-7. Action Alternative: Parrish SUP

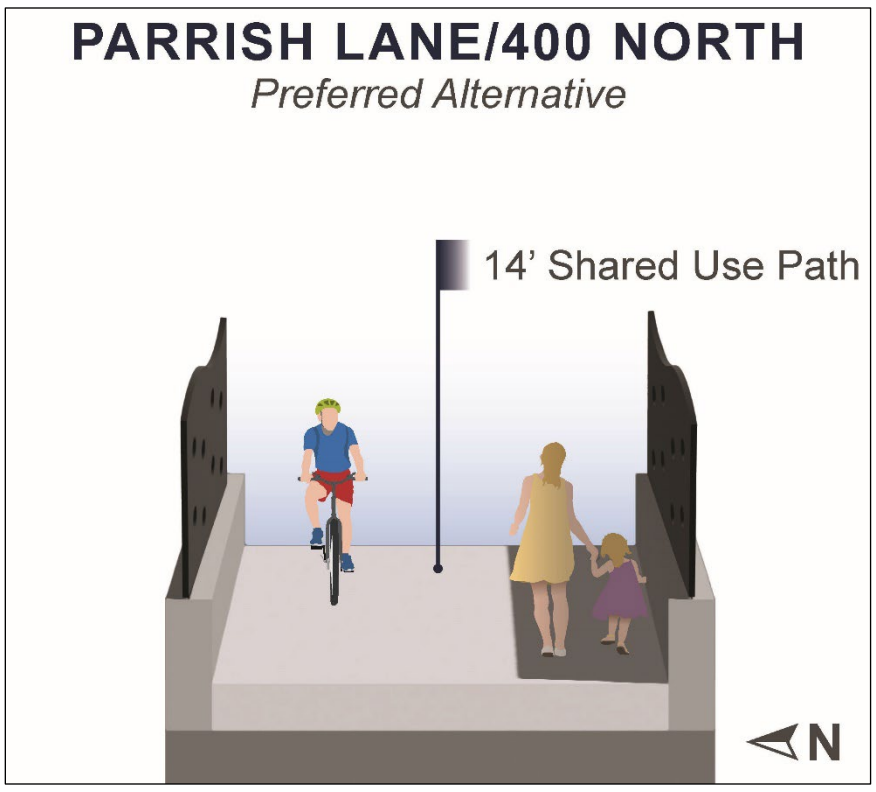


Figure 2.4-8. Action Alternative: Parrish Lane

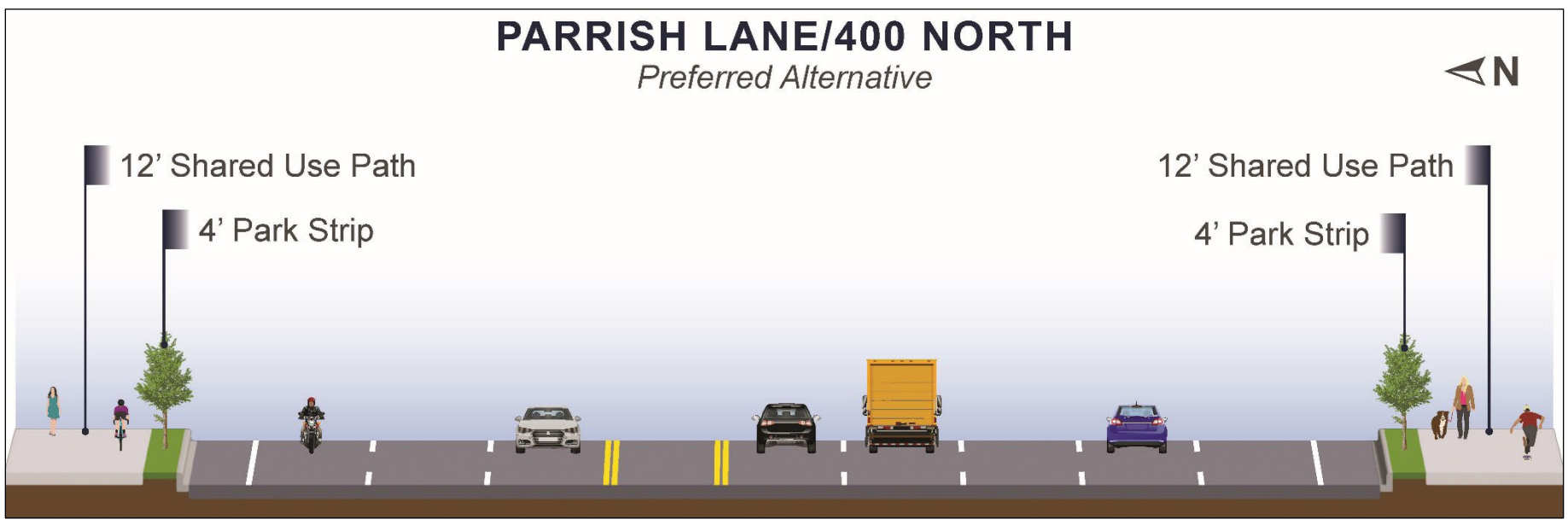


Figure 2.4-9. Action Alternative: Crossing over I-15 at Centerville Community Park

Figure 2.4-10. Action Alternative: Bountiful/West Bountiful Segment

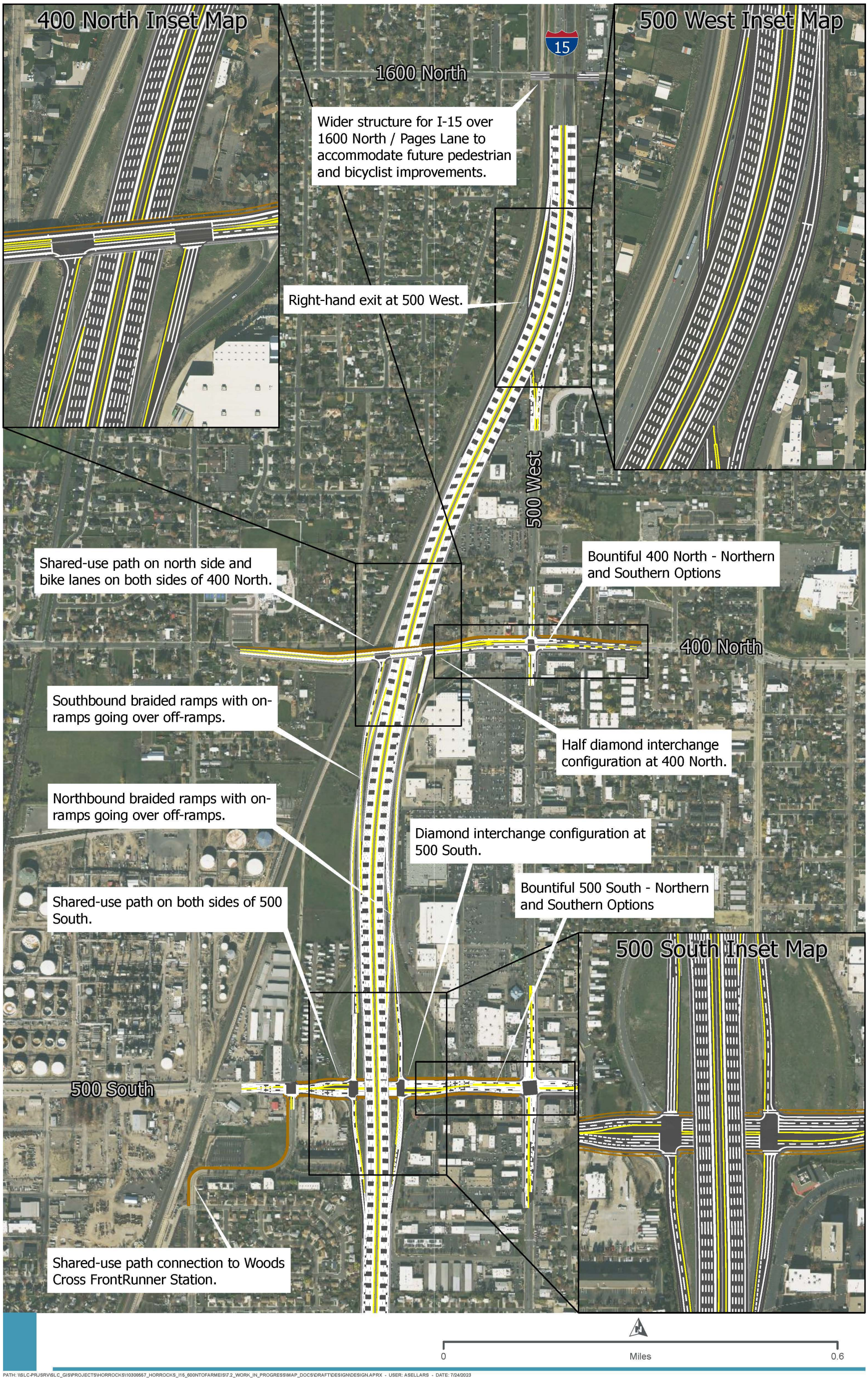


Figure 2.4-11. Bountiful/West Bountiful Option A – 400 North – Northern and Southern Options

Figure 2.4-12. Bountiful/West Bountiful Option A – 500 South – Northern and Southern Options

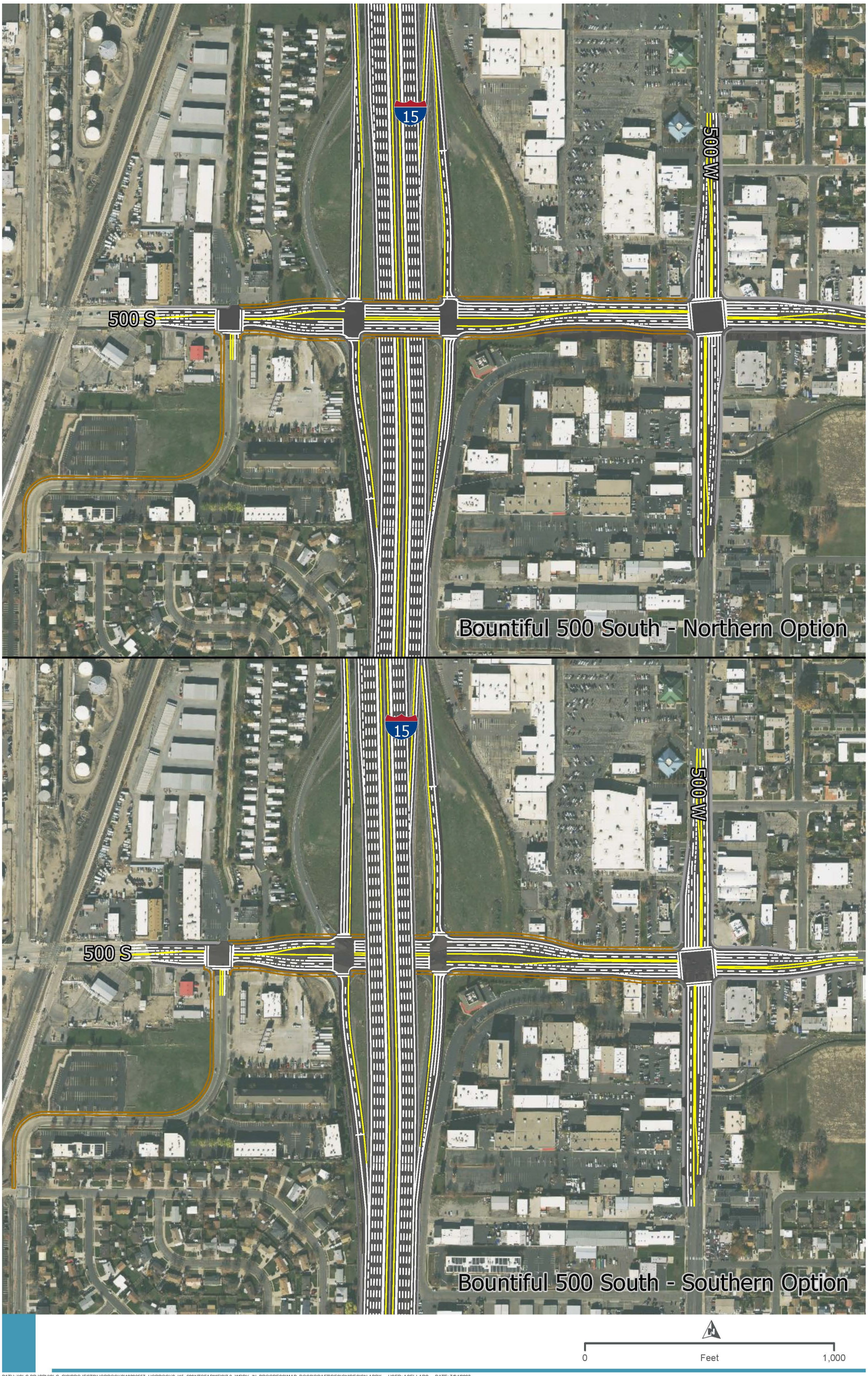


Figure 2.4-13. Action Alternative: 500 South Bountiful/West Bountiful

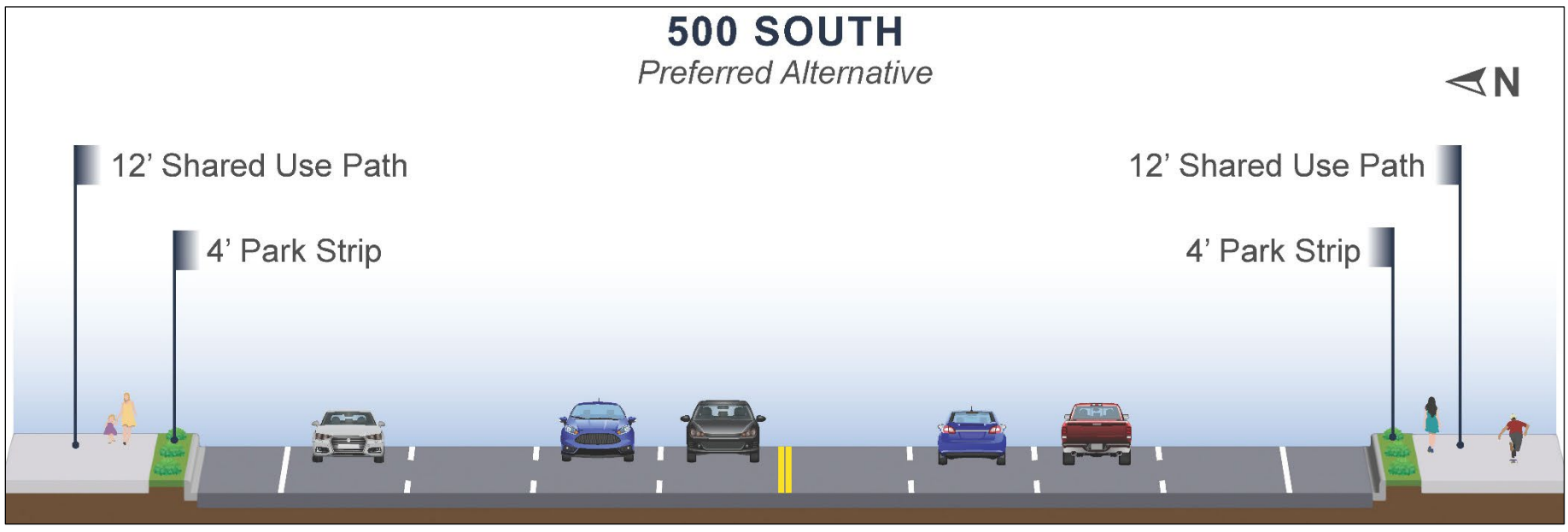


Figure 2.4-14. Action Alternative: 400 North Bountiful/West Bountiful

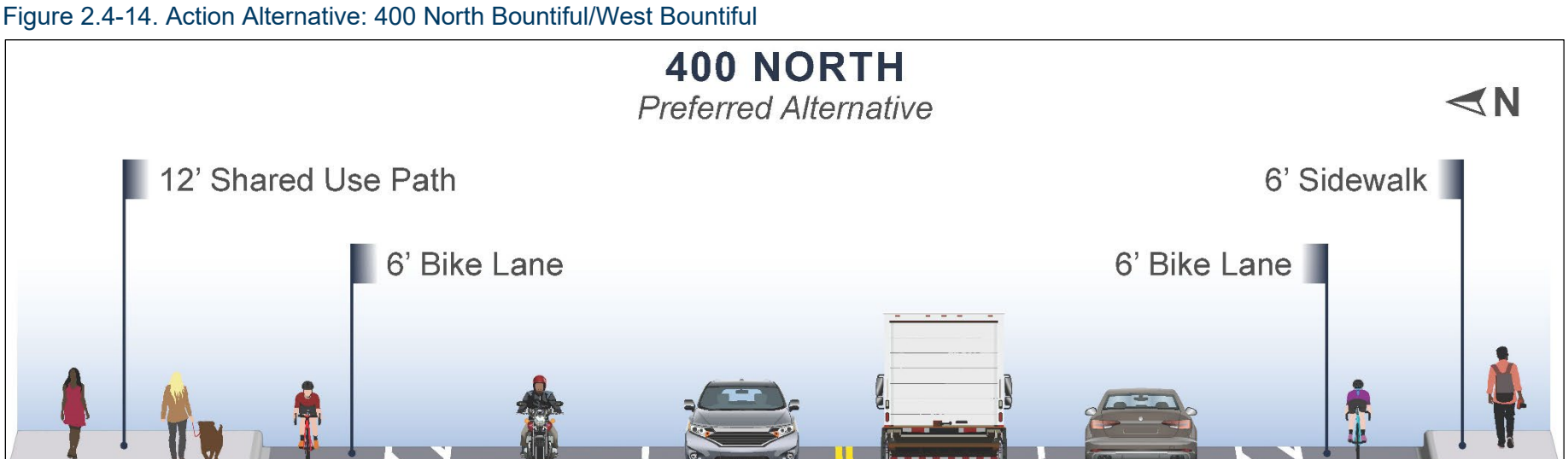


Figure 2.4-15. Action Alternative: Pages Lane/1600 North West Bountiful/Centerville

Figure 2.4-16. Action Alternative: North Salt Lake/Woods Cross Segment

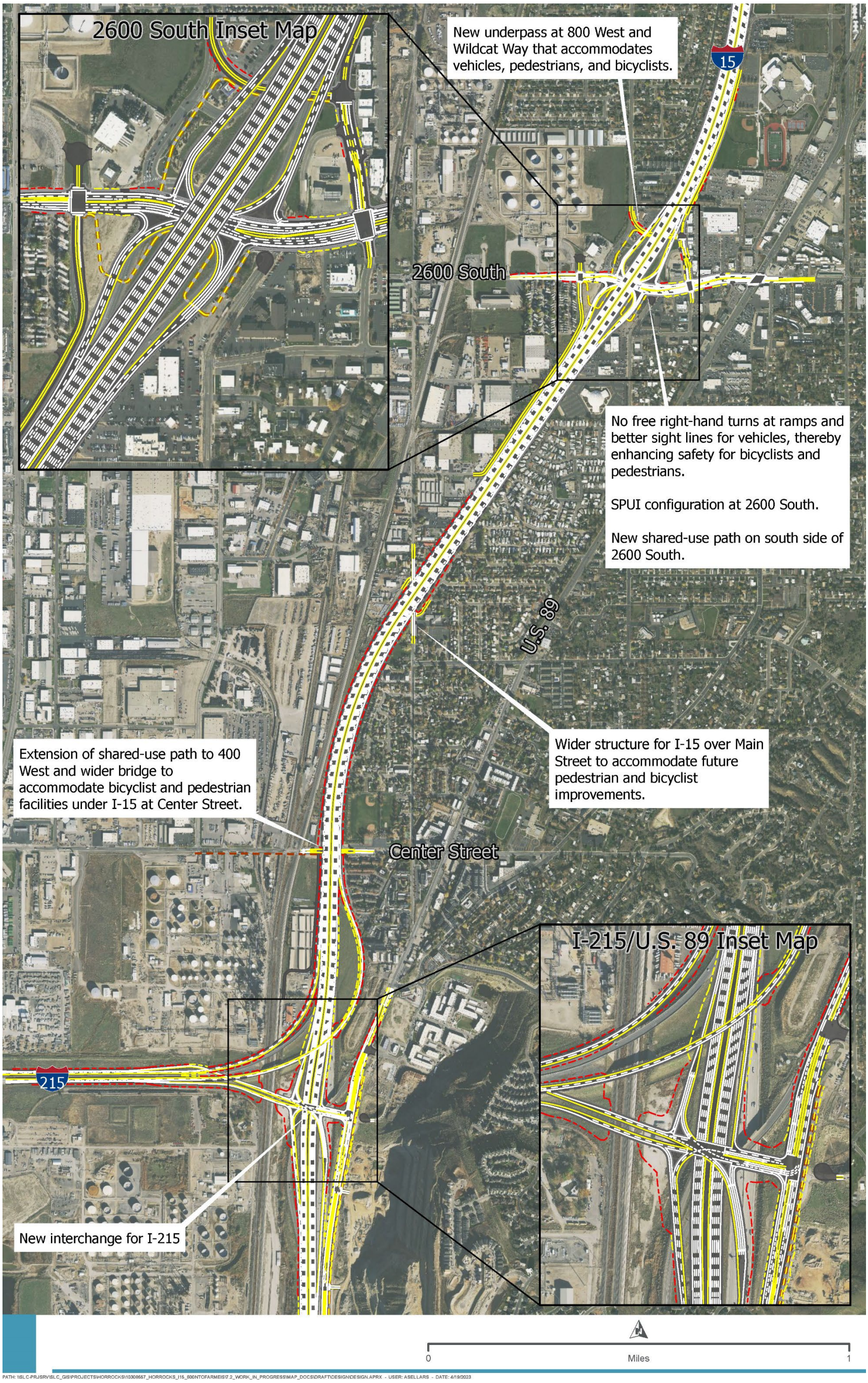


Figure 2.4-17. Action Alternative: Center Street North Salt Lake

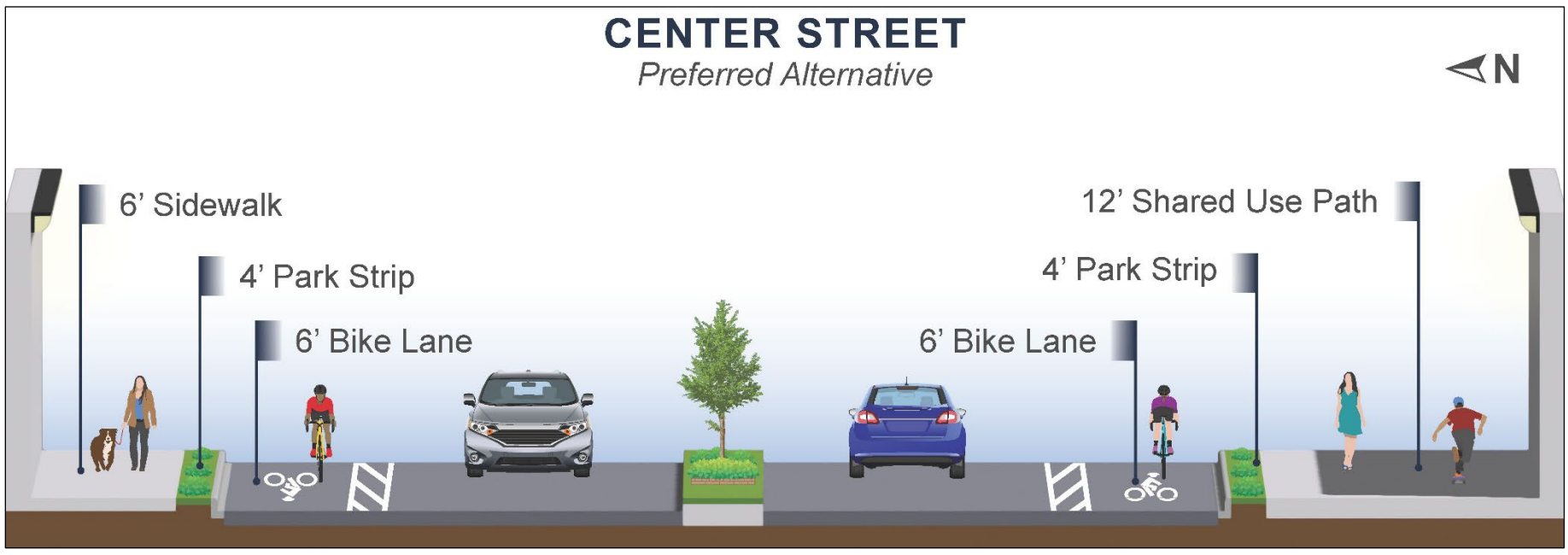


Figure 2.4-18. Action Alternative: Main Street North Salt Lake

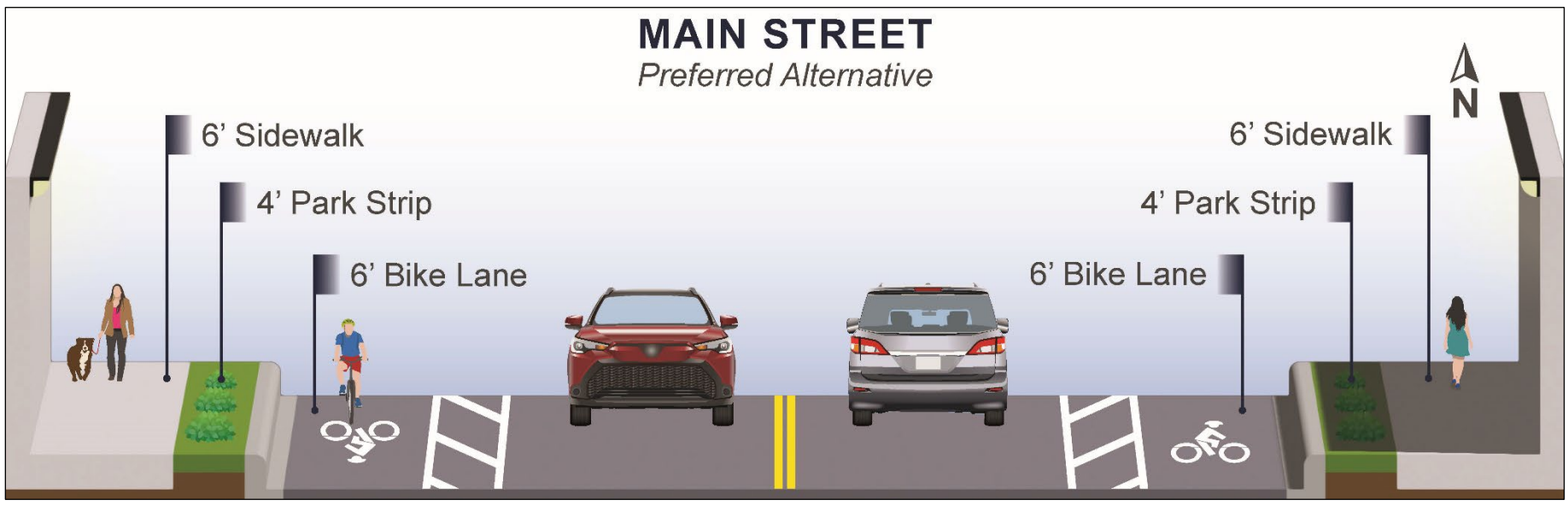


Figure 2.4-19. Action Alternative: 2600 South Woods Cross

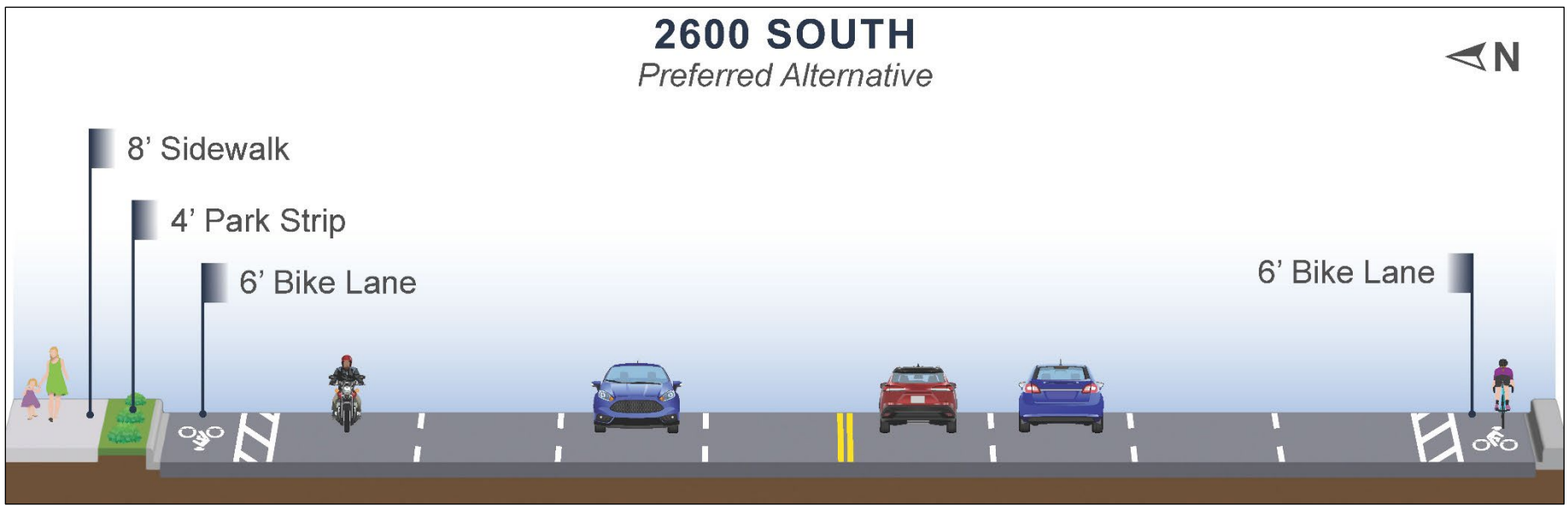


Figure 2.4-20. Action Alternative: 2600 South SUP

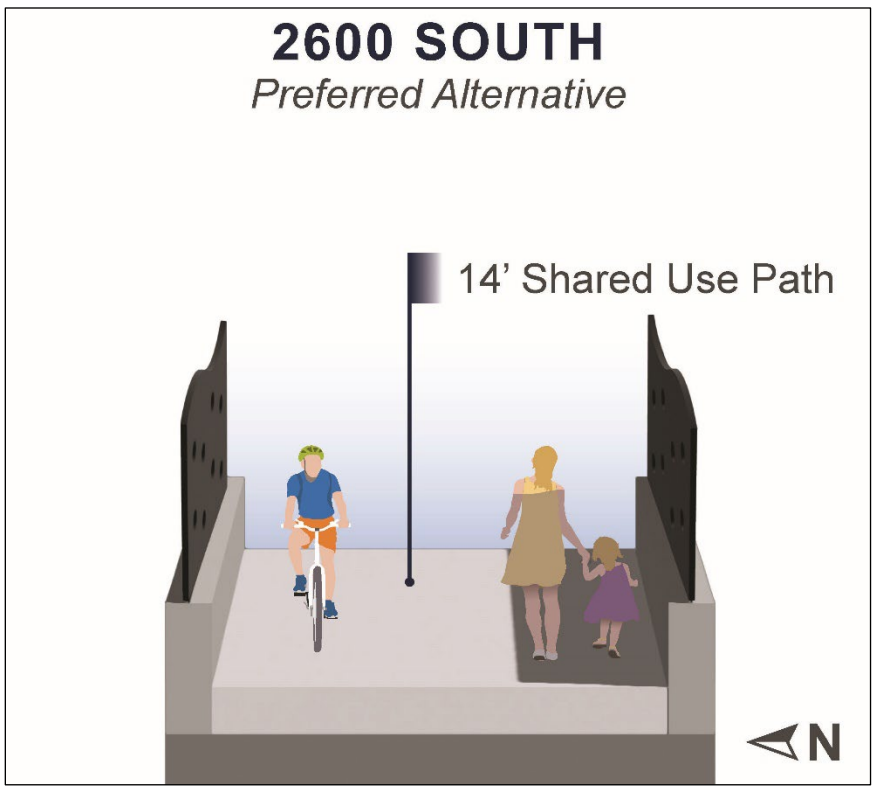


Figure 2.4-21. Action Alternative: 800 West Woods Cross

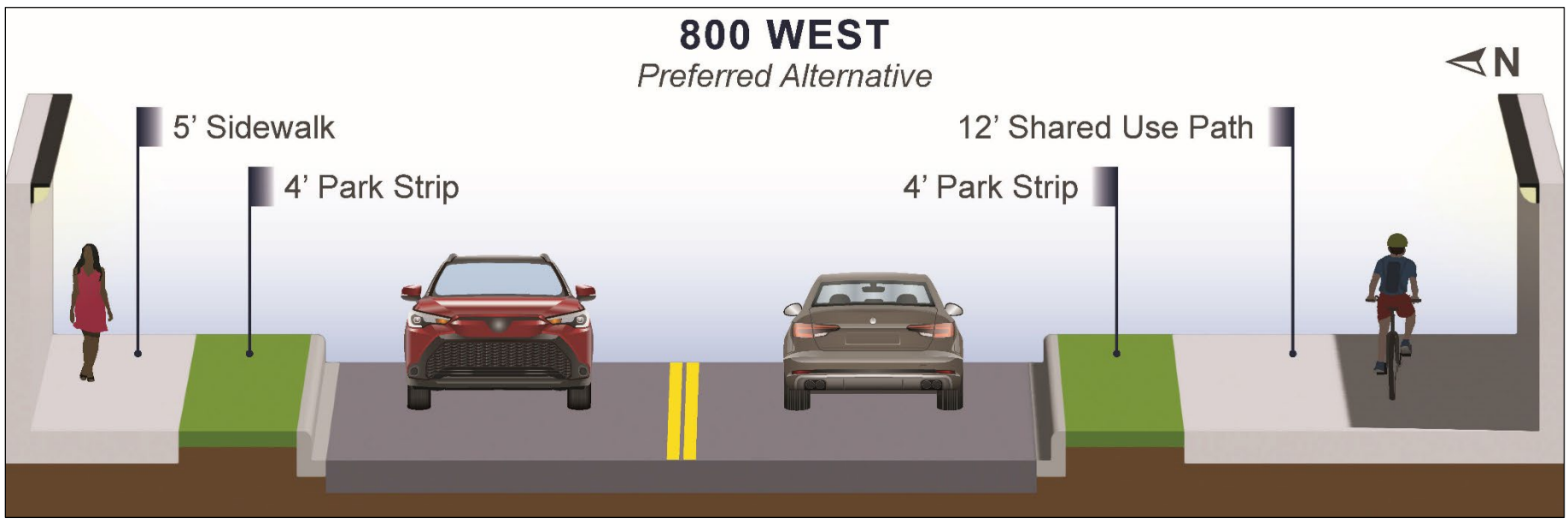


Figure 2.4-22. Action Alternative: 1500 South Woods Cross

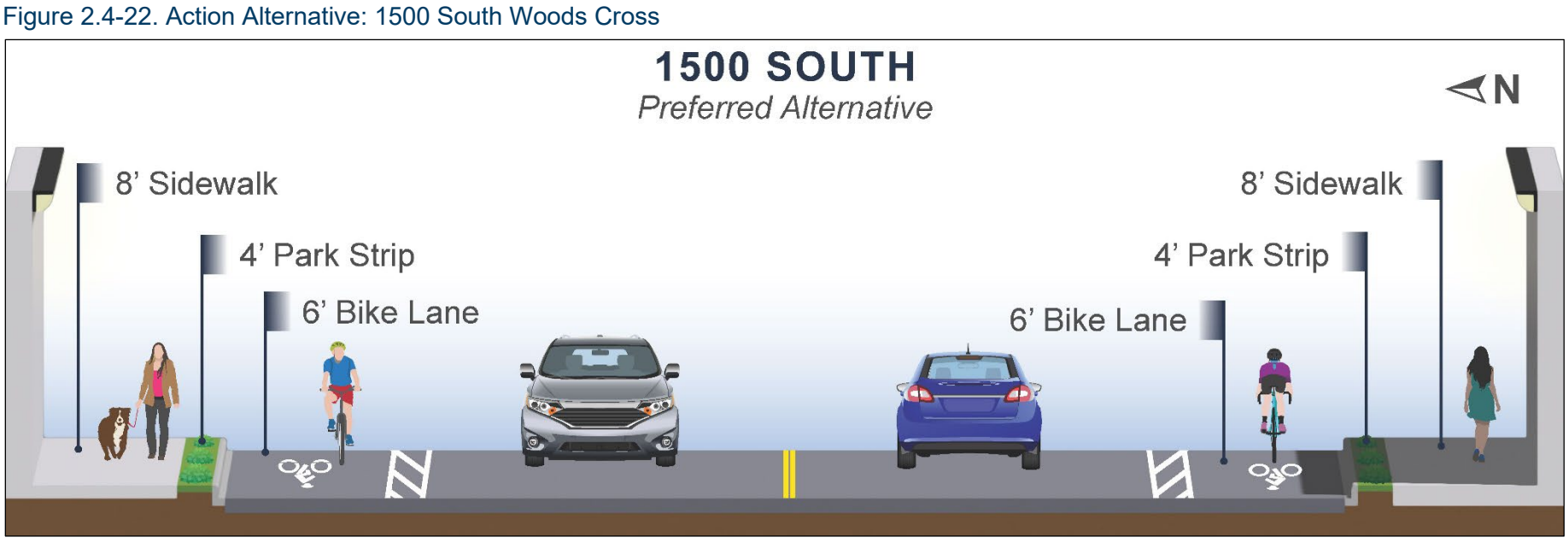


Figure 2.4-23. Action Alternative: Salt Lake Segment

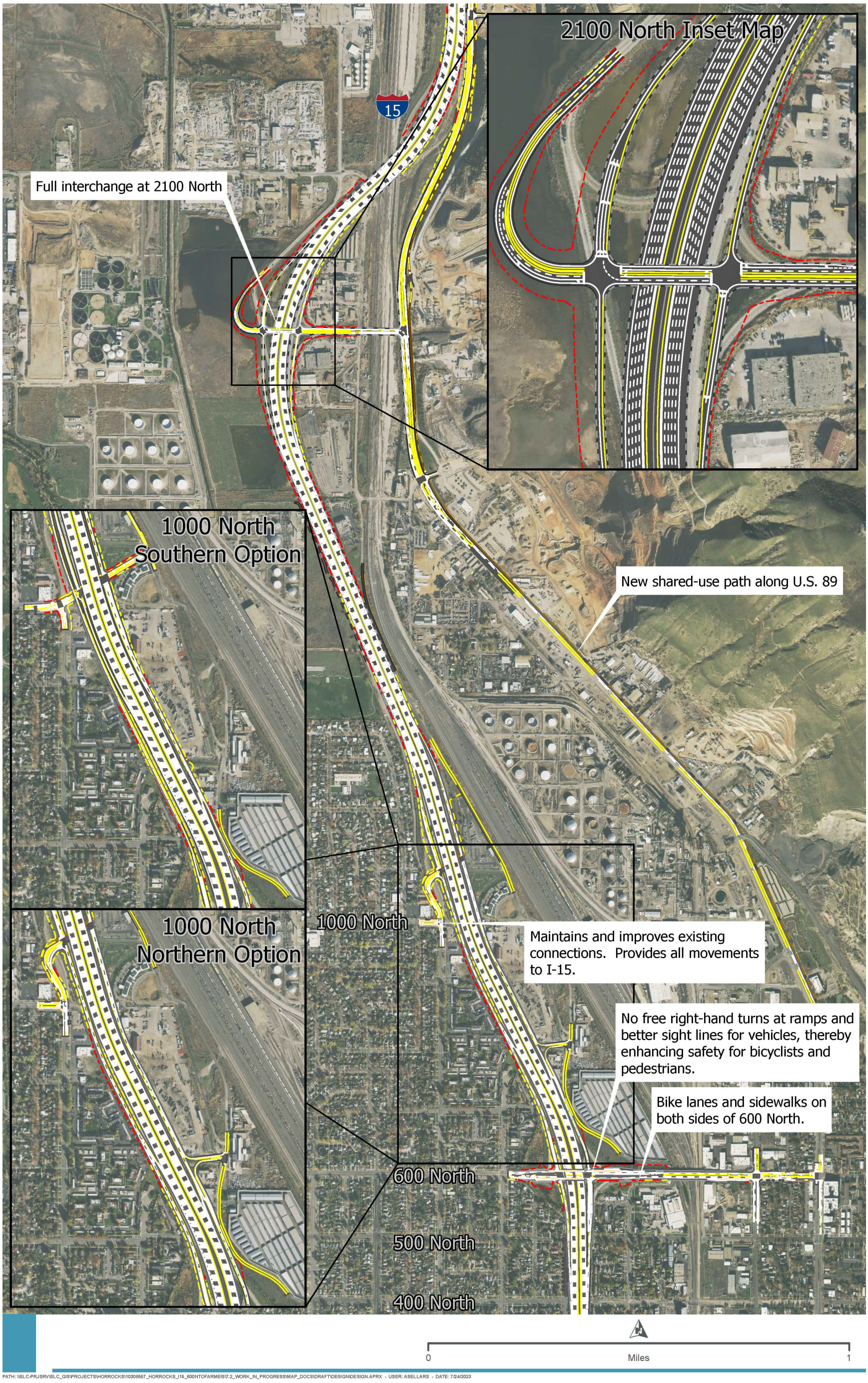


Figure 2.4-24. Salt Lake City 1000 North – Northern and Southern Options

Figure 2.4-25. Action Alternative: 600 North Salt Lake

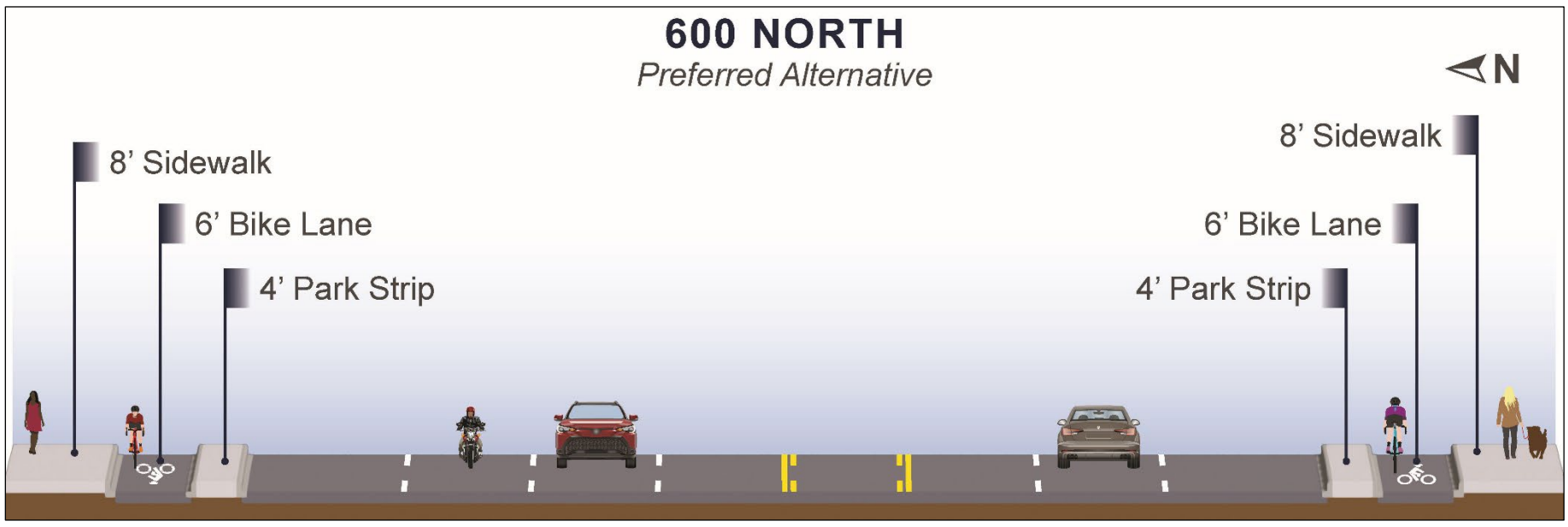


Figure 2.4-26. Action Alternative: Salt Lake 1000 North – Northern and Southern Options

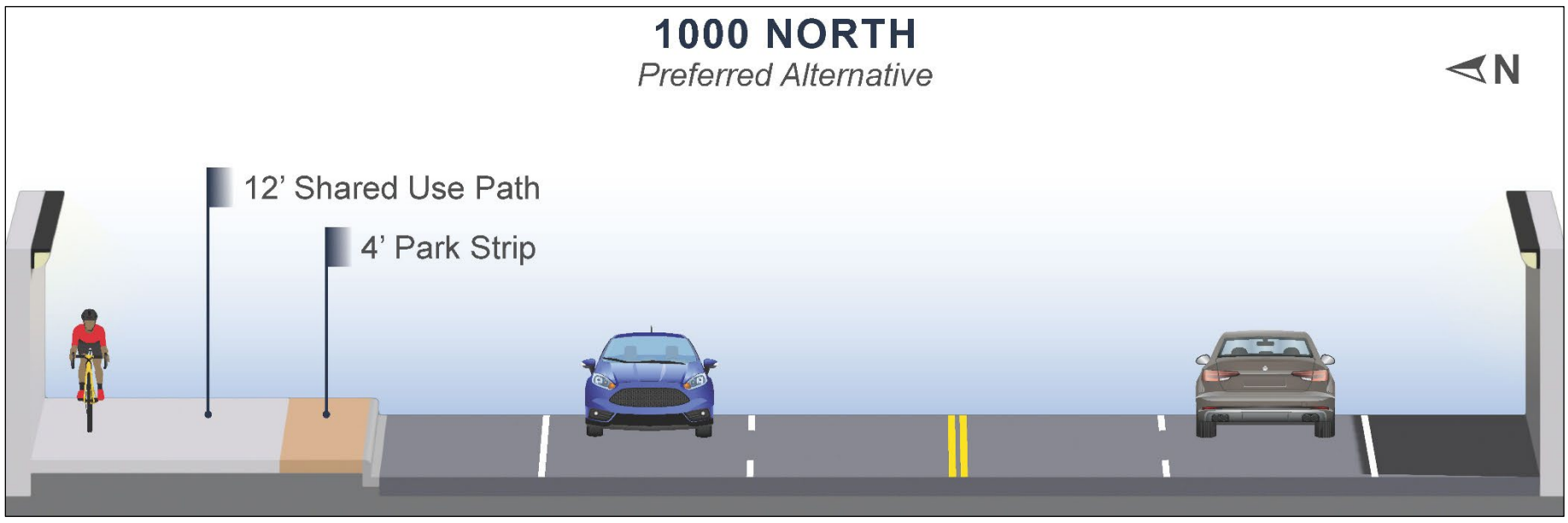
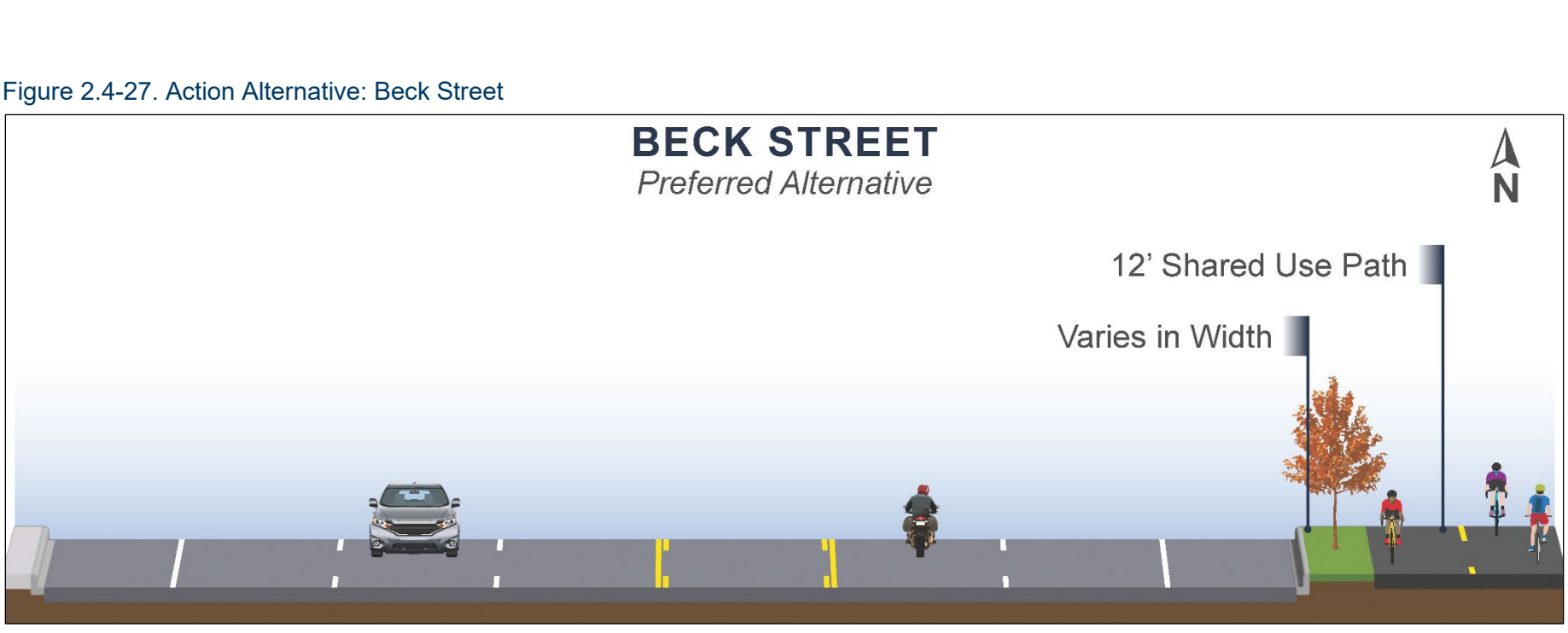


Figure 2.4-27. Action Alternative: Beck Street



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Pedestrian and Bicyclist Facilities. The Action Alternative includes new or improved pedestrian and bicyclist facilities throughout the study area. The Action Alternative pedestrian and bicyclist improvements are listed in Table 2.4-2 and shown in Figure 2.4-28.

Table 2.4-2. Action Alternative Pedestrian and Bicyclist Improvements by Location

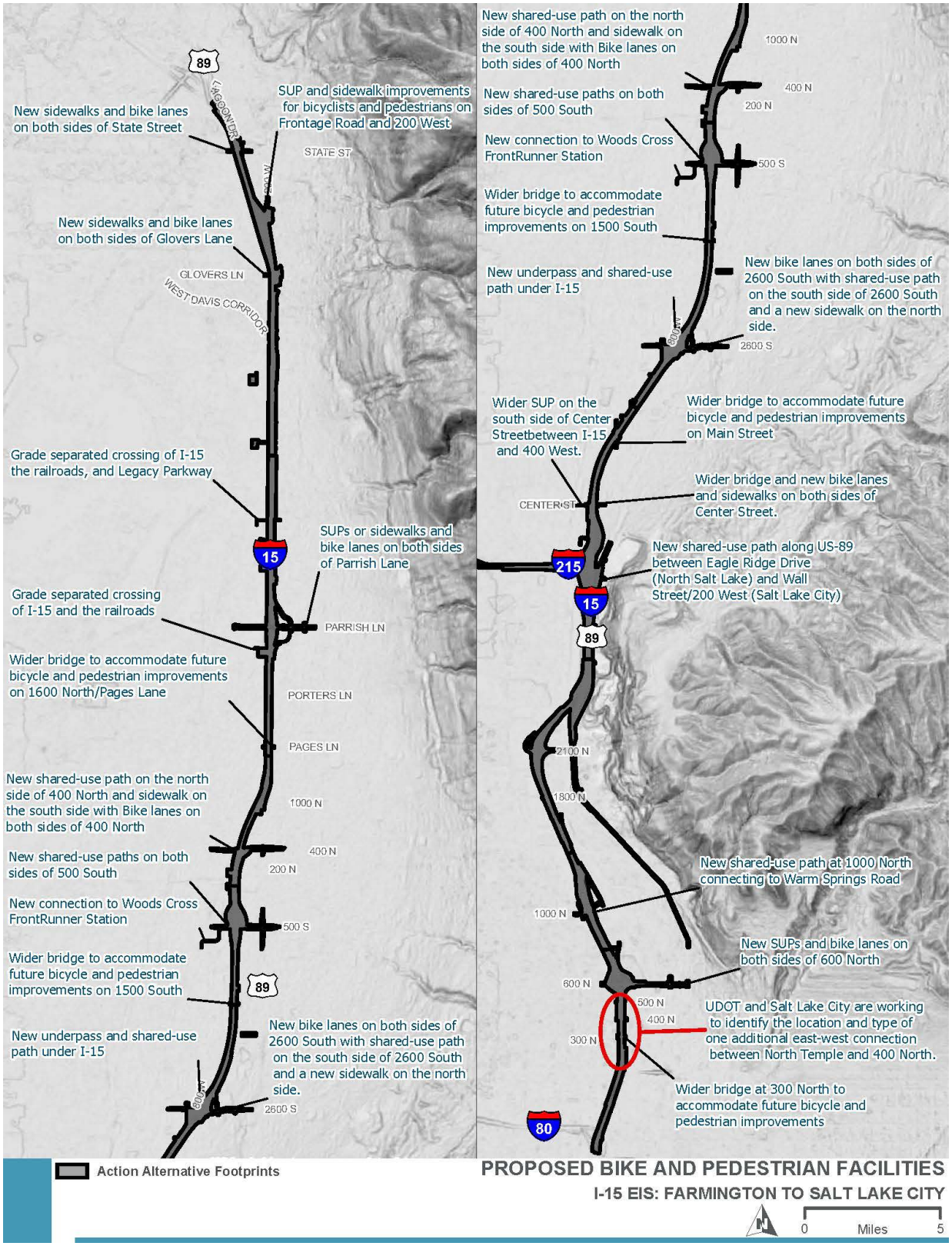
Geographic Area	Action Alternative Bicyclist and Pedestrian Crossing Features
North segment (Farmington and Centerville)	• State Street/Clark Lane bridge over I-15 and the Union Pacific and FrontRunner railroad tracks would be widened to include buffered or barrier-separated bike lanes and sidewalks on both sides that match the facilities going over Legacy Parkway. • No free right-hand turns for vehicles and better sight lines, thereby enhancing safety for pedestrians and bicyclists at the 200 West interchange. • Glovers Lane bridge over I-15 and the Union Pacific and FrontRunner railroad tracks would be widened to include a 10-foot-wide sidewalk on the north side, a 6-foot-wide sidewalk on the south side, and buffered or barrier-separated bike lanes on both sides to match the facilities going over Legacy Parkway. • New grade-separated 14-foot-wide SUP crossing at Centerville Park over I-15/Union Pacific and FrontRunner railroad tracks/Legacy Parkway. • No free right-hand turns for vehicles and better sight lines, thereby enhancing safety for pedestrians and bicyclists at the Parrish Lane interchange. • 12-foot-wide SUP on north side of Parrish Lane. East of I-15, the SUP would narrow to a 5- to 6-foot-wide sidewalk with a park strip. 12-foot-wide SUP on the south side of Parrish Lane. • Wide shoulders on Parrish Lane to accommodate future bike lanes. • Grade-separated 14-foot-wide SUP crossing of I-15 and the Union Pacific and FrontRunner railroad tracks at 200 North.
North central and south central segments (West Bountiful, Bountiful, and Woods Cross)	• Wider bridge over 1600 North/Pages Lane to accommodate future pedestrian and bicyclist improvements. • No free right-hand turns for vehicles and better sight lines, thereby enhancing safety for pedestrians and bicyclists at the 500 South and 400 North interchanges. • Buffered or barrier-separated bike lanes on both sides of 400 North. • 12-foot-wide SUP on the north side of 400 North. • 6-foot-wide sidewalk on the south side of 400 North. • 12-foot-wide SUP on both sides of 500 South. • New SUP connection from 500 South to the Woods Cross FrontRunner Station west of I-15.

(*continued on next page*)

Table 2.4-2. Action Alternative Pedestrian and Bicyclist Improvements by Location

Geographic Area	Action Alternative Bicyclist and Pedestrian Crossing Features
South segment (North Salt Lake, Woods Cross, and Salt Lake City	• Wider bridge over 1500 South to accommodate future pedestrian and bicyclist improvements. • At 800 West, new underpass of I-15 with new 12-foot-wide SUP. 12-foot-wide SUP connection between 800 West and 2600 South on west side of I-15. • At 2600 South, no free right-hand turns for vehicles and better sight lines, thereby enhancing safety for pedestrians and bicyclists. • Buffered or barrier-separated bike lanes on both sides of 2600 South. • 8-foot-wide sidewalk on north side of 2600 South. • 14-foot-wide grade-separated SUP on south side of 2600 South. • Wider bridge over Main Street to accommodate future pedestrian and bicyclist improvements. • Center Street buffered or barrier-separated bike lanes on both sides, 6-foot-wide sidewalk on north side, and 12-foot-wide SUP improvements on south side of Center Street between I-15 and 400 West. • New U.S. 89 12-foot-wide SUP between Eagle Ridge Drive in North Salt Lake and Wall Street/200 West in Salt Lake City. • 12-foot-wide SUP on 1000 North that crosses under I-15 and connects to Warm Springs Road east of I-15. • No free right-hand turns and better sight lines for vehicles, thereby enhancing safety for pedestrians and bicyclists at 600 North interchanges. • Buffered or barrier-separated bike lanes and 8-foot-wide sidewalks on both sides of 600 North. • Wider bridge over 300 North to accommodate future pedestrian and bicyclist improvements.

Figure 2.4-28. Action Alternative Proposed Pedestrian and Bicyclist Facilities



2.4.3 Preliminary Cost Estimates and Construction Implementation

UDOT developed a preliminary cost estimate of **$3.7 billion** for the Action Alternative. There were no major differences in costs among the different options. This estimate is based on the preliminary engineering conducted for the Action Alternative and includes the total project cost for program management, construction, right-of-way acquisition, utility relocation, and design and construction engineering. The cost estimate is based on 2024 dollar values with 2 additional years of escalation. The actual cost of construction would change depending on the year of construction, any phasing, and inflation.

The selected alternative would be constructed based on available funding. UDOT would construct portions of the selected alternative based on the amount of the funding while considering safety and operational benefits. As of September 2023, $1.7 billion has been allocated for potential construction if the Action Alternative is selected in the environmental process.

2.4.4 Comparison of Alternatives

Table 2.4-3 lists the major advantages and disadvantages of each alternative that was evaluated in detail in this EIS. Table 2.4-4 summarizes the environmental impacts of each alternative evaluated in detail in this EIS. For detailed information about the environmental impacts of the alternatives, see Chapter 3, *Affected Environment, Environmental Consequences, and Mitigation Measures*.

Table 2.4-3. Primary Advantages and Disadvantages of the No-action and Action Alternatives

Alternative	Primary Advantages	Primary Disadvantages
No-action Alternative	• Few impacts because no major improvements would be made to I-15.	• Would not be consistent with regional transportation plans. • Aging infrastructure would not be replaced. • Safety and operations would not be improved on I-15 and I-15 interchanges. • New pedestrian and bicyclist improvements that improve safety and mobility would not be made. • Network delay would increase to 36,782 hours (1,427% increase) during the AM peak period and 42,500 hours (1,360% increase) during the PM peak period. • Travel times would increase 30% to 432% during the AM peak period and 129% to 407% during the PM peak period. • Average speeds would be 13 to 55 mph (a decrease of 23% to 81%) during AM peak period and 13 to 28 mph (a decrease of 56% to 80%) during PM peak period.
Action Alternative	• Would be consistent with regional transportation plans. • Aging infrastructure would be replaced. • Safety and operations would be improved on I-15 and I-15 interchanges. • New pedestrian and bicyclist improvements that improve safety and mobility would be made, including a new 3.8-mile shared-use path, four new grade-separated crossings, and improvements to eight existing crossings. • Network delay would decrease by about 47% compared to the No-action Alternative. • Travel times would decrease by 49% to 55% during the AM and PM peak periods compared to the No-action Alternative. • Average speeds would increase 95% to 125% during the AM and PM peak periods compared to the No-action Alternative.	• The Action Alternative would have impacts to some adjacent properties and resources (see Table 2.4-5 below for a summary of impacts). • The Action Alternative would cost about $3.4 billion to construct.

Table 2.4-4. Environmental Impacts of the No-action and Action Alternatives

Impact Category	Unit	No-action Alternative	Action Alternative	Notes
Land converted to roadway use	Acres	0 acres	111 to 116 acres	
Consistent with local land use and transportation plans	Yes/no	No	Yes	Action Alternative is consistent with planned land uses and zoning for all cities. Action Alternative is consistent with the WFRC 2019–2050 RTP.
Residential relocations	Number	0	3 to 5	
Potential residential relocations	Number	0	35 to 36	
Commercial relocations (business relocations)	Number	0	13 to 16 commercial buildings (16 to 26 businesses)	Some commercial buildings include multiple businesses.
Potential commercial relocations (business relocations)	Number	0	10 to 13 commercial buildings (11 to 22 businesses)	Some commercial buildings include multiple businesses.
Section 4(f) parks and recreation areas affected	Number	0	10	Action Alternative's impacts to parks would be minor except for the Farmington State Street Option's impacts to Ezra T. Clark Park in Farmington.
Community facilities affected	Number	0	0	
Environmental justice (EJ) benefits or impacts	Yes/no	No impacts and no benefits to EJ communities.	Yes; impacts and benefits to EJ communities. Impacts would not be disproportionately high and adverse to EJ communities.	
Economic impacts	Yes/No	Yes; adverse due to increased travel times and delay and reduction in average speeds on I-15.	Yes; adverse due to business impacts; positive due to improved travel times and average speeds on I-15.	
Pedestrian and bicyclist improvements	Number	0	• 1 new shared-use path • 4 new grade-separated crossings • 8 crossings with improved connections	No-action Alternative would not improve pedestrian and bicyclist facilities across I-15. Action Alternative would add four new grade-separated crossings of I-15 and a 3.8-mile new shared-use path between North Salt Lake and Salt Lake City. Action Alternative would improve existing crossings in eight locations.

(*continued on next page*)

Table 2.4-4. Environmental Impacts of the No-action and Action Alternatives

Impact Category	Unit	No-action Alternative	Action Alternative	Notes
Air quality impacts exceeding standards (NAAQS)	Yes/No	No	No	Action Alternative is part of the WFRC conforming implementation plan.
Receivers with modeled noise levels above criteria	Number	1,789	3,272 to 3,288	3 new noise barriers and 13 replace-in-kind noise barriers are recommended to mitigate for noise impacts and would provide a benefit (at least a 5dBA reduction) to 1,568 to 1,647 receivers.
Surface water beneficial use impacts	Yes/No	No substantial changes to water quality or beneficial uses.	No substantial changes to water quality or beneficial uses.	
Groundwater quality	Yes/No	No	No	
Impacts to aquatic resources (includes wetlands, streams, mudflats, open-water ponds, canals, and ditches)	Acres	0	30.2	Action Alternative would affect 30.2 acres of aquatic resources. It is likely that not all of these aquatic resources would be considered jurisdictional waters of the United States.
Adverse Impacts to cultural resources	Number	0	6 to 7	
Hazardous material sites affected	Number	0	4 CERCLA 0 to 1 Dry Cleaner 5 LUST/UST	
Floodplain impacts	Acres	0	42.4 acres	Most of the Action Alternative floodplain impacts are in areas already impacted by I-15 (for example, existing floodplain crossings of I-15) and would not be considered new impacts to floodplains.
Visual changes	Category	Similar to existing conditions	Neutral to beneficial	
Section 4(f) uses with greater–than–*de minimis* impacts	Number	0	6 to 8	
Section 4(f) *de minimis* impacts	Number	0	52 to 54	
Section 4(f) temporary occupancy impacts	Number	0	66	

(*continued on next page*)

Table 2.4-4. Environmental Impacts of the No-action and Action Alternatives

Impact Category	Unit	No-action Alternative	Action Alternative	Notes
Section 6(f) conversions	Number	0	1 – Centerville Community Park (0.61 acre/2.5% of park)	Action Alternative would also have temporary nonconforming use of 0.19 acre of Hatch Park in North Salt Lake.

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; EJ = environmental justice; LUST = leaking underground storage tank; NAAQS = National Ambient Air Quality Standards; RTP = regional transportation plan; Section 4(f) = Section 4(f) of the Department of Transportation Act; Section 6(f) = Section 6(f) of the Land and Water Conservation Fund Act; UST = underground storage tank; WFRC = Wasatch Front Regional Council

2.4.5 Basis for Identifying the Preferred Alternative

This section identifies and provides UDOT's basis for identifying the preferred alternative. The final selection of an alternative will be made by UDOT in the Record of Decision for the I-15 project.

After evaluating the information in this EIS, the project file, and public input to date, UDOT has identified the **Action Alternative** as the preferred alternative.

The Action Alternative is the preferred alternative because it would meet the purpose of the project by:

- Improving the safety of the I-15 mainline, interchanges, pedestrian and bicyclist crossings, and connected roadway network;
- Strengthening the economy by replacing the aging infrastructure on I-15 and reducing travel delay on I-15 by 47% compared to the No-action Alternative;
- Incorporating a design that provides space for the planned UTA FrontRunner Double Track project and provides a new SUP connection to the Woods Cross FrontRunner Station;
- Being consistent with the WFRC 2019–2050 RTP assumptions for I-15;
- Improving the pedestrian and bicyclist facility network across I-15 (see Table 2.4-2 and Figure 2.4-28); and
- Improving mobility by reducing travel time by 49% to 55% and increasing average speeds by 95% to 125% during both the morning and evening peak periods compared to the No-action Alternative.

The preferred alternative includes the following options:

- Farmington 400 West Option
- Bountiful 400 North – Northern Option
- Bountiful 500 South – Northern Option
- Salt Lake City 1000 North – Northern Option

The following sections provide the basis for identifying the preferred option in each segment.

North Segment Preferred Option

Degree to Which the Options Meet the Project Purpose. The Farmington 400 West Option and the Farmington State Street Option would both meet the project purpose.

Resource Impacts. As shown in Table 2.4-5, the Farmington 400 West Option and the Farmington State Street Option would have similar levels of impacts to all resources except parks and Section 4(f) resources.

Section 404 of the Clean Water Act Regulatory Considerations. As shown in Table 2.4-5, the Farmington 400 West Option and the Farmington State Street Option would have the same impacts to wetlands and aquatic resources. Therefore, UDOT anticipates that the selection of either option would be consistent with the requirements of Section 404 of the Clean Water Act.

Section 4(f) Regulatory Considerations. As shown in Table 2.4-5, compared to the Farmington 400 West Option, the Farmington State Street Option would use more Section 4(f) resources because it would have a use with greater–than–*de minimis* impact to Ezra T. Clark Park. The Farmington 400 West Option would impact 0.17 acre of Ezra T. Clark Park, and this would be considered a use with *de minimis* impact to the park under Section 4(f). Therefore, the identification of the Farmington 400 West Option as the preferred alternative is consistent with the requirements of Section 4(f).

Summary. In the north segment, the Farmington 400 West Option is part of the preferred alternative because it would result in a Section 4(f) use with *de minimis* impact to Ezra T. Clark Park; it would minimize impacts to the Clark Lane Historic District; it would maintain the existing local road connections between the Frontage Road, 400 West, and State Street in Farmington; and it would provide direct access to Lagoon that does not require users to go through any signalized intersections.

Table 2.4-5. Summary of Environmental Impacts for the North Segment

Impact Category	Unit	Farmington 400 West Option	Farmington State Street Option
Impacts to local roadway network	None	The local road network would be the same as the existing local road network. The frontage road would continue to have free-flow access crossing under State Street with a nonsignalized intersection at 400 West. Access to State Street would continue to use 400 West.	The State Street Option would include a new signalized intersection at State Street for the frontage road. Motorists going to Station Park and areas of Farmington west of I-15 would have more direct access.
Pedestrian and bicyclist improvements	Number	• 2 new grade-separated crossings • 2 improved crossings at cross-streets • 1 improved interchange crossing	• 2 new grade-separated crossings • 2 improved crossings at cross-streets • 1 improved interchange crossing
Residential relocations	Number	1	1
Potential residential relocations	Number	5	5
Commercial relocations (number of businesses)	Number	0 (0)	0 (0)
Potential commercial relocations (number of businesses)	Number	1 (1)	1 (1)
Utility relocations	Number	1	1
Section 4(f) parks and recreation areas that would need to be relocated	Number	0	1 – Ezra T. Clark Park
Section 4(f) parks and recreation areas with minor impacts	Number	5	4
Receivers with modeled noise levels above criteria	Number	422	417
Impacts to wetlands	Acres	1.6	1.6
Impacts to aquatic resources	Acres	4.7	4.7
Impacts to floodplains (all categories)	Acres	39.5	39.5
Adverse effects on cultural resources	Number	2	2
Impacts to sites with hazardous materials	Number	0	0
Section 4(f) greater–than–*de minimis* impacts	Number	2	3
Section 4(f) *de minimis* impacts	Number	6	5
Section 4(f) temporary occupancy impacts	Number	7	7

North Central Segment Preferred Option

Degree to Which the Options Meet the Project Purpose. The Bountiful 400 North – Northern Option and the Bountiful 400 North – Southern Option would both meet the project purpose.

Resource Impacts. As shown in Table 2.4-6, the Bountiful 400 North – Northern Option and the Bountiful 400 North – Southern Option would have similar levels of impacts to all resources except residential and commercial properties. Compared to the Bountiful 400 North – Northern Option, the Bountiful 400 North – Southern Option would have more residential relocations or potential relocations and would also have more relocations and potential relocations to commercial properties and businesses.

Section 404 of the Clean Water Act Regulatory Considerations. As shown in Table 2.4-6, the Bountiful 400 North – Northern Option and the Bountiful 400 North – Southern Option would have no impacts to wetlands and the same impacts to aquatic resources. Therefore, UDOT anticipates that the selection of either option would be consistent with the requirements of Section 404 of the Clean Water Act.

Section 4(f) Regulatory Considerations. As shown in Table 2.4-6, the Bountiful 400 North – Northern Option and the Bountiful 400 North – Southern Option would have the same number and category of impacts to Section 4(f) resources. Therefore, UDOT anticipates that the selection of either option would be consistent with the requirements of Section 4(f).

Summary. In the north central segment, the Bountiful 400 North – Northern Option is part of the preferred alternative because it would result in fewer impacts to residential and commercial properties.

Table 2.4-6. Summary of Environmental Impacts for the North Central Segment

Impact Category	Unit	Bountiful 400 North – Northern Option	Bountiful 400 North – Southern Option
Impacts to local roadway network	None	None. Local roadway network would be maintained similar to existing conditions.	None. Local roadway network would be maintained similar to existing conditions.
Pedestrian and bicyclist improvements	Number	• 1 improved crossing at cross street • 1 improved interchange crossing	• 1 improved crossing at cross street • 1 improved interchange crossing
Residential relocations	Number	0	2
Potential residential relocations	Number	2	1
Commercial relocations (number of businesses)	Number	5 (5)	4 (7)
Potential commercial relocations (number of businesses)	Number	0 (0)	2 (10)
Impacts to Section 4(f) parks and recreation areas	Number	0	0
Receivers with modeled noise levels above criteria	Number	158	157
Impacts to wetlands	Acres	0	0
Impacts to aquatic resources	Acres	<0.1	<0.1
Impacts to floodplains (all categories)	Acres	0.97	0.97
Adverse effects on cultural resources	Number	1	1
Impacts to sites with hazardous materials	Number	2	2
Section 4(f) greater–than–*de minimis* impacts	Number	1	1
Section 4(f) *de minimis* impacts	Number	10	10
Section 4(f) temporary occupancy impacts	Number	4	4

South Central Segment Preferred Option

Degree to Which the Options Meet the Project Purpose. The Bountiful 500 South – Northern Option and Bountiful 500 South – Southern Option would both meet the project purpose.

Resource Impacts. As shown in Table 2.4-7, the Bountiful 500 South – Northern Option and the Bountiful 500 South – Southern Option would have similar levels of impacts to all resources except commercial properties and businesses, sites with hazardous materials, historic properties, and Section 4(f) resources. Compared to the Bountiful 500 South – Northern Option, the Bountiful 500 South – Southern Option would have more relocations and potential relocations to commercial properties and businesses, one more impact to a site with hazardous materials, and one more impact to a historic property [which is also a Section 4(f) resource].

Section 404 of the Clean Water Act Regulatory Considerations. As shown in Table 2.4-7, the Bountiful 500 South – Northern Option and the Bountiful 500 South – Southern Option would have no impacts to wetlands and the same impacts to aquatic resources. Therefore, UDOT anticipates that the selection of either option would be consistent with the requirements of Section 404 of the Clean Water Act.

Section 4(f) Regulatory Considerations. As shown in Table 2.4-7, compared to the Bountiful 500 South – Northern Option, the Bountiful 500 South – Southern Option would use more Section 4(f) resources because it would have uses with greater–than–*de minimis* impacts to two historic properties. The Bountiful 500 South – Northern Option would have a use with greater–than–*de minimis* impact to one historic property. Therefore, the identification of the Bountiful 500 South – Northern Option as the preferred alternative is consistent with the requirements of Section 4(f).

Summary. In the south central segment, the Bountiful 500 South – Northern Option is part of the preferred alternative because it would result in fewer uses with greater–than–*de minimis* impacts to Section 4(f) historic properties, and because it would have fewer impacts to commercial properties and businesses.

Table 2.4-7. Summary of Environmental Impacts for the South Central Segment

Impact Category	Unit	Bountiful 500 South – Northern Option	Bountiful 500 South – Southern Option
Impacts to local roadway network	None	None. Local roadway network would be maintained similar to existing conditions.	None. Local roadway network would be maintained similar to existing conditions.
Pedestrian and bicyclist improvements	Number	• 1 improved interchange crossing • 1 new shared-use path connection to the Woods Cross FrontRunner Station	• 1 improved interchange crossing • 1 new shared-use path connection to the Woods Cross FrontRunner Station
Residential relocations	Number	0	0
Potential residential relocations	Number	0	0
Commercial relocations (number of businesses)	Number	7 (9)	8 (16)
Potential commercial relocations (number of businesses)	Number	6 (7)	5 (6)
Utility relocations	Number	0	1
Section 4(f) parks and recreation areas with minor impacts	Number	1	1
Receivers with modeled noise levels above criteria	Number	136	134
Impacts to wetlands	Acres	0	0
Impacts to aquatic resources	Acres	<0.1	<0.1
Impacts to floodplains (all categories)	Acres	<0.1	<0.1
Adverse effects on cultural resources	Number	1	2
Impacts to sites with hazardous materials	Number	3	4
Section 4(f) greater–than–*de minimis* impacts	Number	1	2
Section 4(f) *de minimis* impacts	Number	6	5
Section 4(f) temporary occupancy impacts	Number	10	10

South Segment Preferred Option

Degree to Which the Options Meet the Project Purpose. The Salt Lake City 1000 North – Northern Option and the Salt Lake City 1000 North – Southern Option would both meet the project purpose.

Local Traffic Considerations. Traffic projections show that the Salt Lake City 1000 North – Northern Option would reduce traffic volumes on 1000 North and slow down traffic coming to 1000 North or 900 West from I-15 due to the slower-speed connection to the I-15 ramps.

Resource Impacts. As shown in Table 2.4-8, the Salt Lake City 1000 North – Northern Option and the Salt Lake City 1000 North – Southern Option would have similar levels of impacts to all resources except commercial relocations. The Salt Lake City 1000 North – Northern Option would require the relocation of one more commercial property than the Salt Lake City 1000 North – Southern Option. However, the Salt Lake City 1000 North – Northern Option would have fewer impacts to the access and operations for the businesses on Warm Springs Road on the east side of I-15 compared to the Salt Lake City 1000 North – Southern Option. The Salt Lake City 1000 North – Southern Option would have more impacts to the existing and planned access and operations of Granite Construction. The Salt Lake City 1000 North – Northern Option would minimize impacts to the existing and planned access and operations of Granite Construction.

Section 404 of the Clean Water Act Regulatory Considerations. As shown in Table 2.4-8, the Salt Lake City 1000 North – Northern Option and the Salt Lake City 1000 North – Southern Option would have similar impacts to wetlands and aquatic resources. Therefore, UDOT anticipates that the selection of either option would be consistent with the requirements of Section 404 of the Clean Water Act.

Section 4(f) Regulatory Considerations. As shown in Table 2.4-8, the Salt Lake City 1000 North – Northern Option and the Salt Lake City 1000 North – Southern Option would have the same number and category of impacts to Section 4(f) resources. Therefore, UDOT anticipates that the selection of either option would be consistent with the requirements of Section 4(f).

Summary. In the south segment, the Salt Lake City 1000 North – Northern Option is part of the preferred alternative because it would reduce traffic volumes on 1000 North and slow down traffic coming to 1000 North or 900 West from I-15 due to the slower-speed connection to the I-15 ramps. The Salt Lake City 1000 North – Northern Option is also part of the preferred alternative because it would also have fewer impacts to the access and operations for the businesses on Warm Springs Road on the east side of I-15 compared to the Salt Lake City 1000 North – Southern Option.

Table 2.4-8. Summary of Environmental Impacts for the South Segment

Impact Category	Unit	Salt Lake City 1000 North – Northern Option	Salt Lake City 1000 North – Southern Option
Impacts to local roadway network	None	Beneficial impacts with new collector-distributor ramps that provide full access to 1000 North, new full access interchange at 2100 North, and new grade-separated railroad crossing at 2100 North. Provides new access to Warm Springs Road near 800 North.	Beneficial impacts with new collector-distributor ramps that provide full access to 1000 North, new full access interchange at 2100 North, and new grade-separated railroad crossing at 2100 North. Provides new access to Warm Springs Road near 1100 North.
Pedestrian and bicyclist improvements	Number	2 new grade-separated crossings 7 improved crossings at cross-streets 3 improved interchange crossings 3.8 mile new shared use path between North Salt Lake and Salt Lake City on U.S. 89/Beck Street	2 new grade-separated crossings 7 improved crossings at cross-streets 3 improved interchange crossings 3.8 mile new shared use path between North Salt Lake and Salt Lake City on U.S. 89/Beck Street
Residential relocations	Number	2	2
Potential residential relocations	Number	29	29
Commercial relocations (number of businesses)	Number	3 (3)	2 (2)
Potential commercial relocations (number of businesses)	Number	4 (4)	4 (4)
Section 4(f) parks and recreation areas with minor impacts	Number	4	4
Receivers with modeled noise levels above criteria	Number	2,572	2,564
Impacts to wetlands	Acres	17.9	17.9
Impacts to aquatic resources	Acres	25.5	25.4
Impacts to floodplains (all categories)	Acres	1.85	1.85
Adverse effects on cultural resources	Number	2	2
Impacts to sites with hazardous materials	Number	4	4
Section 4(f) greater–than–*de minimis* impacts	Number	2	2
Section 4(f) *de minimis* impacts	Number	32	32
Section 4(f) temporary occupancy impacts	Number	45	45

2.5 References

[AASHTO] American Association of State Highway and Transportation Officials

2011 Roadside Design Guide, 4th Edition. https://store.transportation.org/item/collectiondetail/105.

2018 A Policy on Geometric Design of Highways and Streets, 7th Edition. https://store.transportation.org/item/collectiondetail/180. January.

[APD and TR] Alta Planning + Design and Township + Range

2020 South Davis County Active Transportation Plan: A Multi-jurisdiction Plan for the Cities of Bountiful, Centerville, and North Salt Lake. Adopted January 2020.

Salt Lake City

2015 Salt Lake City Pedestrian and Bicycle Master Plan. http://www.slcdocs.com/transportation/Master/PedestrianAndBicycleMaster/SLC_PBMPCompleteDocument(Dec2015)Clickable.pdf.

2021 600/700 North Mobility, Safety, and Transit Improvements Study. https://www.slc.gov/transportation/2020/02/18/600north/.

[UDOT] Utah Department of Transportation

1998 I-15 North Corridor Downtown Salt Lake City to Kaysville – Draft Environmental Impact Statement. https://books.google.com/books?id=IL01AQAAMAAJ&pg=PR6&lpg=PR6&dq=I-15+DEIS,+UDOT,+1998&source=bl&ots=GyR9ccaRwn&sig=ACfU3U2iVq9EqxpjjnPLNYkVwkNY2fkJxA&hl=en&sa=X&ved=2ahUKEwiXlo7__PzoAhUJCc0KHS32DKkQ6AEwAnoECAgQAQ#v=onepage&q=I-15%20DEIS%2C%20UDOT%2C%201998&f=false.

2016 I-15 and Parrish Lane Single Point Urban Interchange Concept Report. December.

2018 I-15; 400 south, SLC and 2600 South, Woods Cross Traffic Study. November.

2019 I-15 Northbound; I-215 South Interchange, Murray and 600 North, Salt Lake City; Traffic Study. September.

2020 Davis County I-15 Study; Region 1 I-15 Assessment. February 7. https://storymaps.arcgis.com/stories/b79faa20c4394607b20f12d2e03b752e.

2021 Roadway Design Manual. https://drive.google.com/file/d/1tz6gCuriPX0mfr6FeTZ6k7AmbNu3Iikh/view.

2022a Alternatives Development and Screening Methodology Report for the I-15 Farmington to Salt Lake City Environmental Impact Statement. August 25. https://i15eis.udot.utah.gov/wp-content/uploads/2022/09/I-15-600-N-EIS-Screening-Methodology-Report_Sept2022.pdf.

2022b Coordination Plan for the I-15 Environmental Impact Statement from Farmington to Salt Lake City. July 14. https://i15eis.udot.utah.gov/wp-content/uploads/2022/07/I-15-600-N-EIS-Coordination-Plan-for-website-1.pdf.

2023a 2024 Standard Specifications and Standard Drawing Books. https://drive.google.com/drive/folders/1UnupxBjh9sDCnRWlW9Yc6X2wyMF5b6Tj.

2023b Draft Alternatives Comments for the I-15 Environmental Impact Statement from Farmington to Salt Lake City. January.

[UDOT and UTA] Utah Department of Transportation and Utah Transit Authority

2009 I-15 North and Commuter Rail Collaborative Design Planning Study.

[UDOT and others] Utah Department of Transportation, Utah Transit Authority, Wasatch Front Regional Council, and Mountainland Association of Governments

2015 Wasatch Front Central Corridor Study. https://wfrc.org/studies/wasatch-front-central-corridor-study/.

[UTA] Utah Transit Authority

2018 Future of FrontRunner Final Report. https://www.rideuta.com/-/media/Files/About-UTA/Reports/2019/C5016_UTA_Operations_Simulation_Tech_MemoV2_20190320.ashx?la=en.

[WFRC] Wasatch Front Regional Council

2019 Wasatch Front 2019–2050 Regional Transportation Plan. https://wfrc.org/vision-plans/regional-transportation-plan/2019-2050-regional-transportation-plan/.