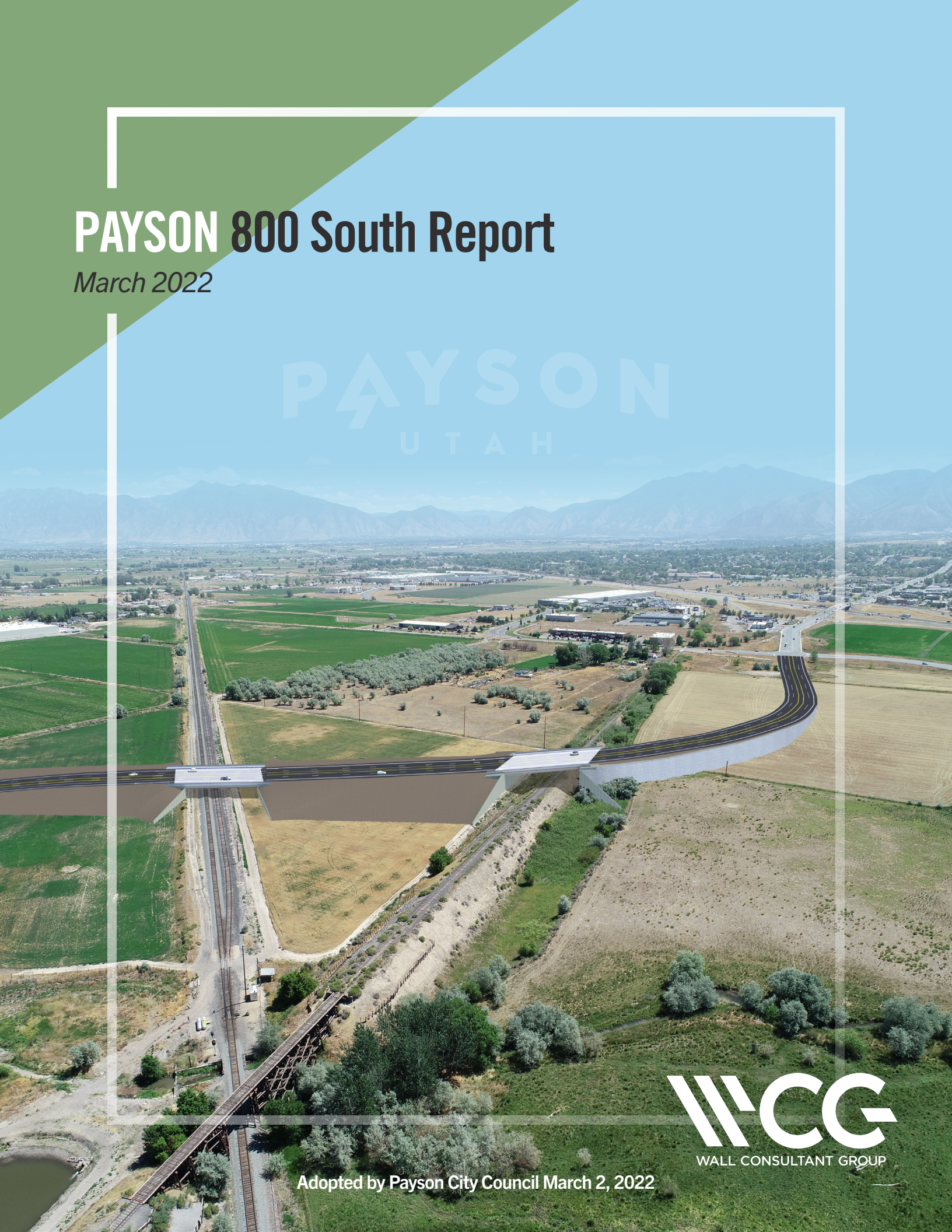


PAYSON 800 South Report

March 2022

PAYSON
UTAH



WCG
WALL CONSULTANT GROUP

Adopted by Payson City Council March 2, 2022

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INTRODUCTION

Payson City is located in south Utah County, and according to the 2020 census has a 2020 population of 21,101 people. Payson has been growing at a rate of 1.43 percent annually and population has increased by 15.3 percent since the 2010 census. Payson has recently seen an increase in development applications, as well as more demand for housing. Much of this demand is focused on the west side of Payson.

800 South (SR-178) is one of the major east / west arterials through the city, and connects I-15 on the west and SR-198 on the east. East of I-15, 800 South is a five-lane corridor and accommodates approximately 15,000 vehicles per day. West of I-15, 800 South ends one block west of I-15 at American Way (1700 West). The Payson City Transportation Master Plan (TMP) (adopted 2020) identifies the extension of 800 South to 2900 West (5600 West county designation) (SR-141) as a planned arterial. This project is planned by the TMP to be completed between 2031 – 2050. In addition, this connection is also on the Mountainland Association of Governments (MAG) Long Range Transportation Plan (TransPlan 50) as a Phase 3: 2041 – 2050 project.

Payson has been experiencing tremendous pressure for growth on the west and south quadrants including Mountainland Technical College (MTECH) wanting to build a campus, as well as several large scale developments. These planned developments, along with additional population growth, travel demand from West Mountain, Genola, and north Santaquin have created a need for a regional arterial roadway connection to I-15 on the west side of Payson.

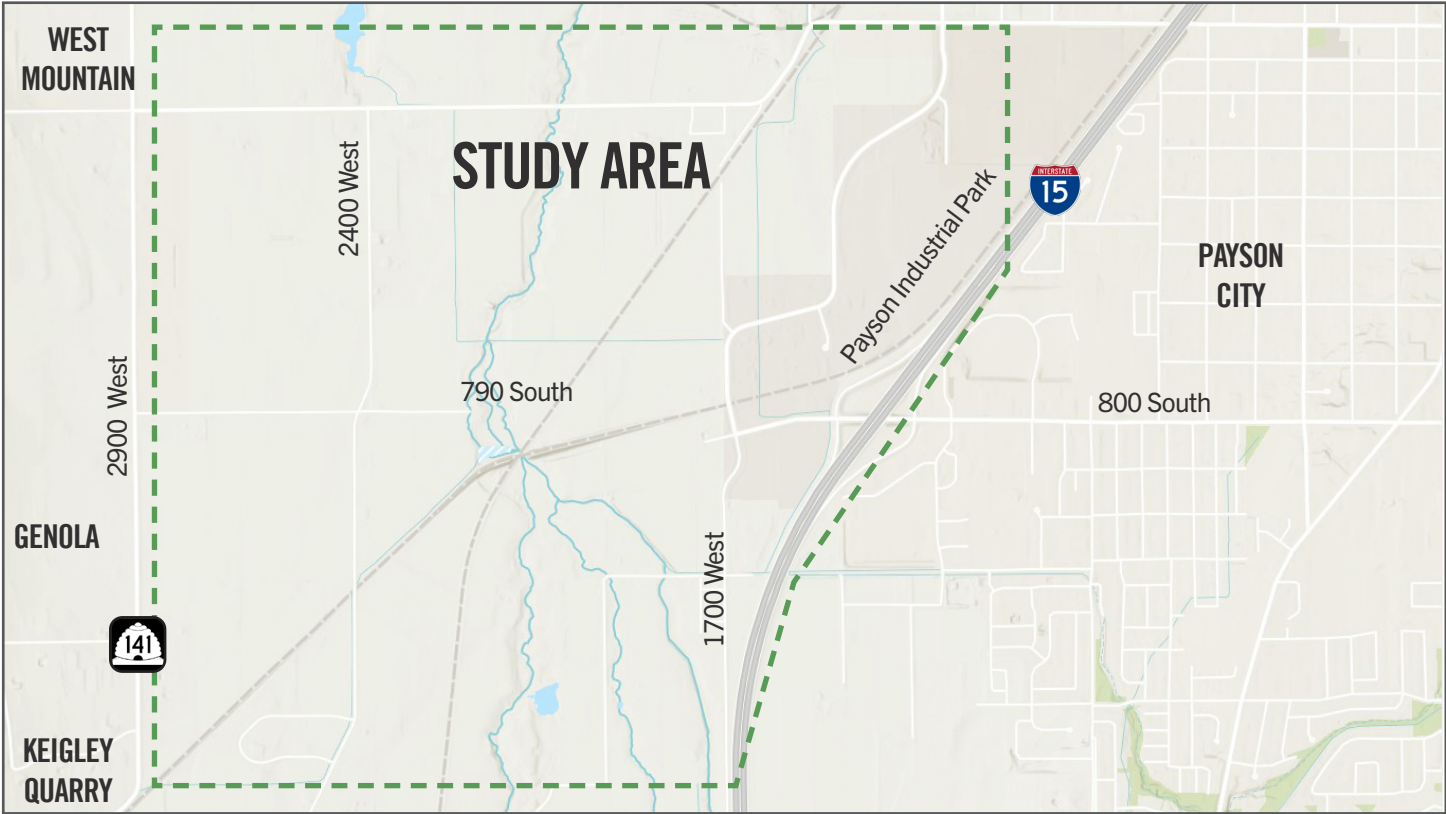


Figure 1. Payson City Vicinity Map

Alternative east west connections are limited on the west side of Payson. Utah Avenue is located almost a mile north and is a narrow unimproved two lane roadway with an at-grade railroad crossing and no connection to I-15. The next east / west connection is almost 2 miles north of 800 South at 900 North (9600 South county designation), which connects to the Main Street I-15 interchange on the north end of town.

Therefore, Mountainland Association of Governments (MAG) and Payson City decided to complete a feasibility study to evaluate the possibility of extending the 800 South corridor to 2900 West (SR-141). This connection will service a large area including the entire west side of Payson, West Mountain, Genola, and north Santaquin. This feasibility study will allow for greater connectivity and access for these areas. The intent of the study is to look at each of the challenges of making this connection and to narrow down potential alignments to the best and least impactful solutions.

STEERING COMMITTEE

The study was directed by a study steering committee which included representatives from Payson City, MAG, Utah Transit Authority (UTA), Utah Department of Transportation (UDOT), Utah County, and the consultant team. The steering committee met monthly throughout the study process to review analyses, receive updates, and provide feedback and direction. The Steering Committee included the following individuals:

- Chad Eccles, MAG
- Dave Tuckett, Payson City
- Travis Jockumsen, Payson City
- Jill Spencer, Payson City
- Chris Van Aken, Payson City
- Nestor Gallo, Payson City
- Kent Fowden, Payson City
- Darren Bunker, UDOT
- Eric Rasband, UDOT
- Richard Nielson, Utah County
- Ken Anson, UTA
- Andrea Moser, BioWest
- Jeremy Searle, WCG
- Tim Taylor, WCG
- Brent Schvaneveldt, WCG
- Marty Asay, WCG
- Austin Feula, WCG
- Bryce Albrecht, WCG



Other stakeholders were also contacted throughout the study process including property owners, MTECH, developers, etc. The outreach effort and feedback are documented in the Property Owner and Key Stakeholder Outreach section.

GOALS AND OBJECTIVES

The steering committee and project team worked together to develop a set of goals and objectives to guide the study. These goals and objectives are outlined as follows:



Figure 2. Payson 800 South Study, Goals & Objectives

1. Improve transportation connectivity and access for the area west of Payson between 800 South and 2900 West (SR-141).
 - a. Identify and evaluate vehicle connection and freight route alternatives between 800 South and 2900 West (SR-141).
 - b. Identify and evaluate active transportation opportunities and connections.
 - c. Identify and evaluate transit opportunities and connections.
 - d. Develop three potential alternatives that meet the goals & objectives of the project.
2. Develop a single preferred alternative based on an evaluation of environmental, railroad, ROW, cost, and travel demand impacts.
 - a. Identify and evaluate environmental impacts.
 - b. Identify and evaluate railroad impacts.
 - c. Identify and evaluate ROW impacts.
 - d. Identify and evaluate cost impacts.
 - e. Identify and evaluate travel demand impacts.
3. Facilitate partner agency involvement and buy-in with Payson, MAG, UDOT, Utah County, and UTA.
 - a. Coordinate with partner agencies to identify a preferred alternative.
 - b. Hold monthly steering committee meetings.

PROJECT BACKGROUND

STUDY AREA

The study area includes the area west of I-15 and east of 2900 West (SR-141) between Utah Avenue (10400 South county designation) and 1130 South (11200 South county designation) in Payson. Currently there are no east/west roadways that provide connectivity through the entire study area. I-15 has an existing interchange with 800 South (SR-178), but that quickly dead ends about a block west of I-15. This study evaluated potential alignments to extend 800 South to 2900 West (SR-141) to the west.

The study area includes two railroad lines that cross in the middle of the study area at Red Bridge. Spring Creek also flows through the study area and crosses the railroad lines at Red Bridge, with a large area of wetlands. There are private residences, farms, and other private holdings throughout the study area. These are discussed in more detail in the existing conditions section.

PREVIOUS STUDIES

The project team reviewed the following previous studies to ensure consistency with previous work and to provide a solid framework to build upon. Each of these previous studies provided valuable information for the 800 South analysis.



MAG TRANSPAN50, 2019

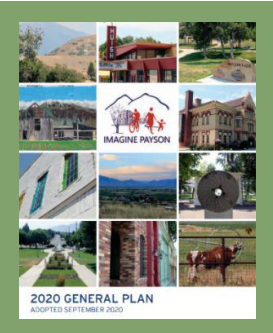
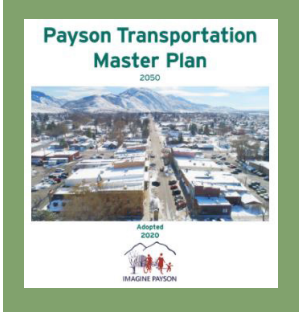
The Mountainland Association of Governments 2019 TransPlan50 was reviewed.

The TransPlan50 indicates that the proposed section of 800 South would be a Phase 3 (2041 – 2050) project and be build-out as a 3-lane arterial for a cost of \$24.4 million.

The TransPlan50 also identifies the I-15 & 800 South interchange reconstruction as a Phase 2 (2031 – 2040) project for a cost of \$40 million.

PAYSON TRANSPORTATION MASTER PLAN, 2020

This report outlines the need for a freight route and connection to I-15 on the west side of Payson. The plan includes a recommendation for the extension of 800 South to 2900 West (SR-141) as a future arterial roadway. This is planned as a 2031 – 2050 project in the transportation master plan. The future plan for this roadway is similar to the MAG TransPlan50.



PAYSON CITY GENERAL PLAN, 2020

Future zoning was obtained from the General Plan to aid in the future demographic projections. The planned zoning from this document is shown in the figure below.

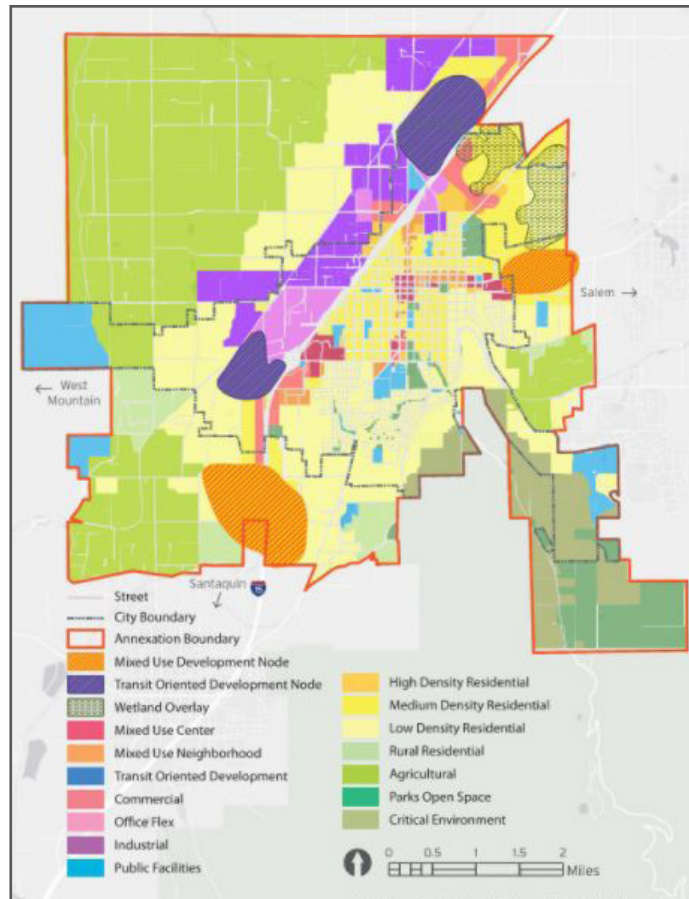


Figure 3. Payson City General Plan Future Land Use Map, Adopted September 2, 2020

RED BRIDGE TOD PARKING STUDY, 2020

The Red Bridge TOD Parking Study was completed for a large parcel south of 800 South and east of the rail crossings. This project proposed ~1,400 dwelling units proximate to the proposed MTECH campus.

These demographic projections were reviewed and implemented into the travel demand model.

UTA SOUTH VALLEY TRANSIT STUDY, 2021

The Cities of Provo, Springville, Mapleton, Spanish Fork, Salem, Payson and Santaquin, in collaboration with MAG, UTA, and UDOT, have initiated the South Valley Transit Study to evaluate options for providing high-capacity transit service in the southern portion of Utah County, between Provo and Santaquin. This study was recently completed and recommended that the FrontRunner station would be located on the north end of Payson near the Main Street / I-15 interchange. The Express bus will travel between the FrontRunner station on the north end of Payson and 800 South study area. Additional information regarding this project can be found at southvalleytransit.com.

The South Valley Transit Study has identified a locally preferred alternative that includes:

- Extending the commuter rail (FrontRunner) from Provo to Payson
- Adding express bus service from Payson to Santaquin.

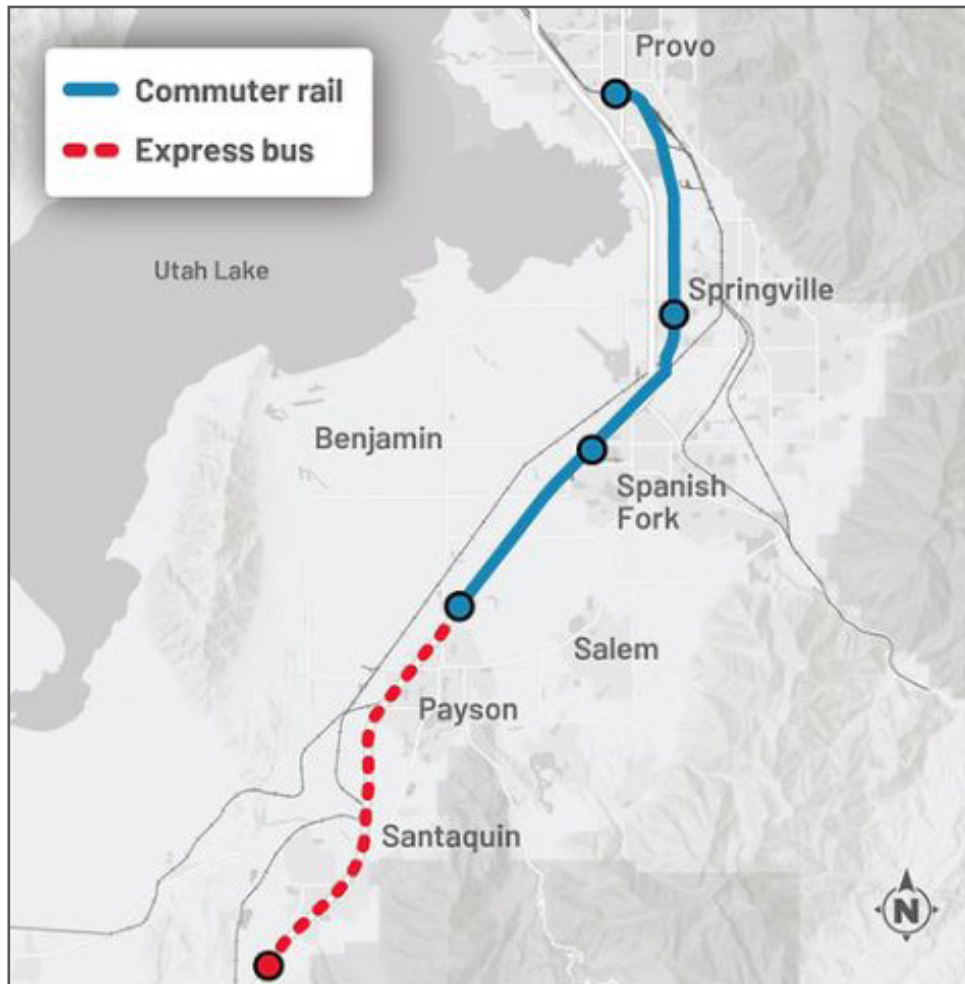


Figure 4. South Valley Transit Study Draft Recommendations

MTECH

MTECH is currently planning to build a campus within the study area. Preliminary development plans for the Red Bridge development include an MTECH campus on approximately 13 – 14 acres located southwest of the 1700 West/800 South intersection. According to MTECH, the campus would serve approximately 1,100 – 1,500 students per day with approximately 50 – 60 faculty and staff. MTECH staff indicated that access to I-15 is important to the success of the campus.



PUBLIC OUTREACH

An extensive public outreach effort was completed as part of this study. A summary of the different outreach efforts and feedback from the outreach is provided below.

PROPERTY OWNER & KEY STAKEHOLDER ONE-ON-ONE MEETINGS

Property owners and key stakeholders that could potentially be affected by the alignment of 800 South were contacted and one-on-one interviews were performed. A total of 17 different one-on-one meetings were held, as well as dozens of phone calls, emails, and other contacts. These one-on-one meetings were held between March 4, and October 19, 2021. These meetings were to help property owners and stakeholders understand the purpose of the Payson 800 South study, and to receive input and feedback on potential alignments, constraints, property details, future plans, etc. All meetings were attended by Jeremy Searle, Payson 800 South Study Project Manager. Meetings were also attended by at least one of the following: Nestor Gallo, Payson Development Engineer, Jill Spencer, Payson City Planner, Chis Van Aken, Payson City Planner, Travis Jockumsen, Payson Public Works Director or Dave Tuckett, Payson City Manager. Overall feedback is provided below. These one-on-one meetings are summarized in more detail in Appendix A, which includes detailed information about the meetings and the feedback received.

- Overall, property owners understood the need for an east-west connection and that it was likely to occur as the west side of Payson rapidly grows.
- Property owners that had plans to develop in the future were generally more supportive of having the new roadway along the edge of their property. Most would prefer that it did not split their property in half.
- Property owners that planned to stay in their homes and had no plans to develop generally preferred that the road stay as far away from them as possible.
- Many property owners felt that using the existing 790 South (10900 South county designation) roadway for a portion of the alignment would be a good location for the future roadway.
- The Red Bridge development team was concerned about impacts to their planned development.

PROJECT WEBSITE

A project website was developed to provide the public with information on the purpose of the study, the schedule, goals and objectives, frequently asked questions, and information on alternatives. The project website is payson800southstudy.com. This link was included in Payson City utility billings notifications, and provided to the public at one-on-one meetings, the public open house, and emails to key stakeholders and property owners.

PROJECT OPEN HOUSE

A public open house was held at the Payson City Center at 439 West Utah Avenue on August 19, 2021. The open house was advertised in the Payson City Newsletter in July and August, and specific email invitations were extended to approximately 50 individuals including property owners and key stakeholders. There were approximately 45 attendees at the open house in addition to City staff and project team members. The open house included

a large scale printout (22' x 7') that included project information such as goals/objectives, alternatives, cross sections, and a conceptual rendering. Additional information and the written comments received at the open house are included in Appendix A.

“very excited to see the growth and improvements”



EXISTING CONDITIONS

ROADWAY NETWORK

The 800 South roadway is classified as an arterial by the Payson Master Transportation Plan (2020). The Payson Master Transportation Plan provides the following graphics outlining the cross section for an arterial roadway:

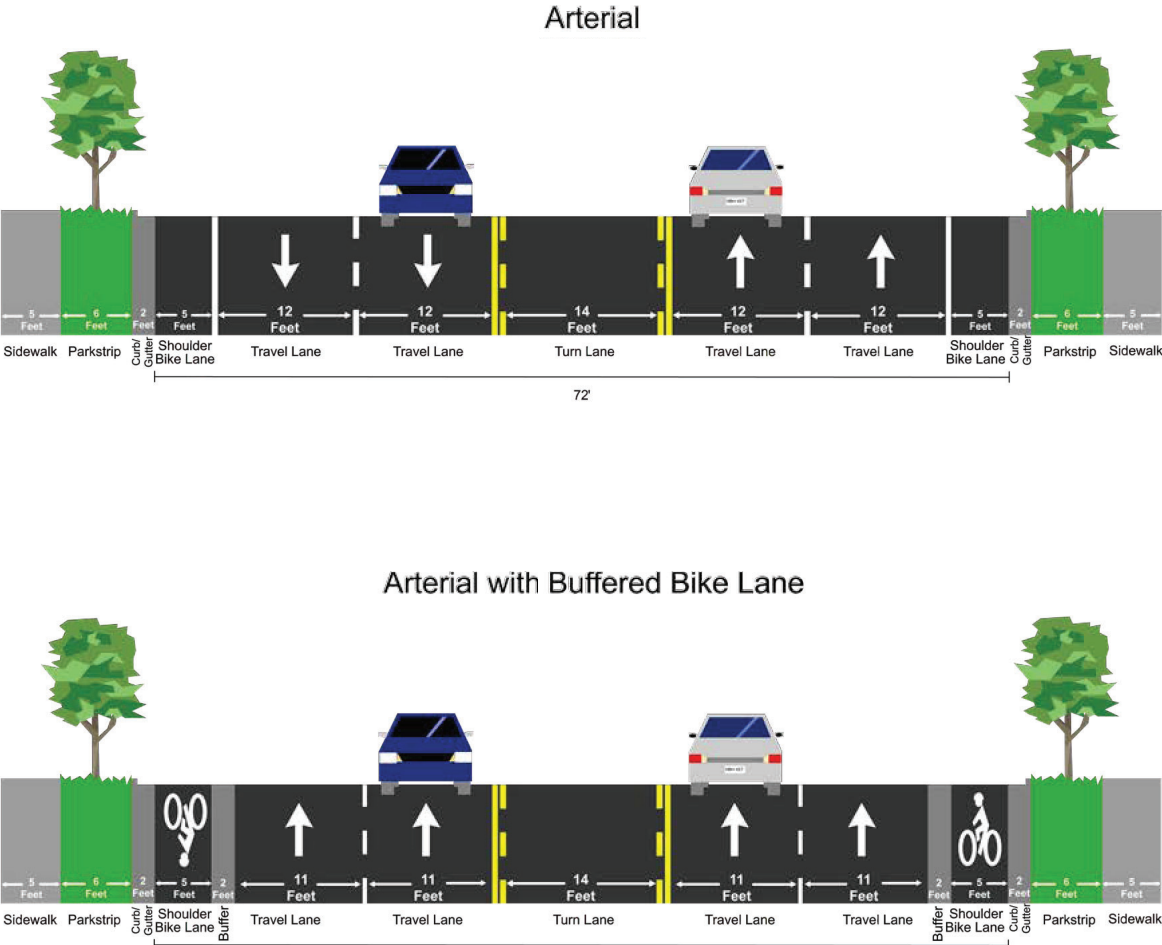


Figure 5. Cross Section for Arterial Roadway

As shown in the arterial cross section, Payson City defines an arterial roadway as having five lanes, pedestrian facilities, with an option for bike lanes. Currently, 800 South has a single lane in each direction with a center two-way left-turn lane and wide shoulders in the study area. Further east, 800 South is a five-lane road. The posted speed limit on 800 South is 35 mph.

The Payson Master Transportation Plan also classifies 1700 West as an existing arterial. North of 800 South, 1700 West (American Way) has a single lane in both directions, that eventually widens to a five-lane cross section north of the railroad tracks. South of 800 South, 1700 West is a five lane cross section for approximately 500 feet, where it narrows down to a single lane in each direction. The posted speed limit on 1700 West is 25 mph.

The 2016 AADT at 800 South near the 1-15 interchange is approximately 13,000 with 18

percent of it being single unit trucks and 7 percent combination trucks.

Due to the agricultural and industrial zones near the project area there are several destinations that would require the use of large trucks; such as: Keigley Quarry, KSC Pit, Payson City Landfill, McMullin Cherry Orchard, and Payson Fruit Growers Plant.

Currently there is no direct access between 2900 West (SR-141) and the 800 South (SR-178) interchange with I-15. Current access to this section of 2900 West are Utah Avenue and 11900 South (12000 South county designation), both of which do not offer direct access to I-15. Additionally, all existing east-west connections have an at-grade crossing with an active rail line.

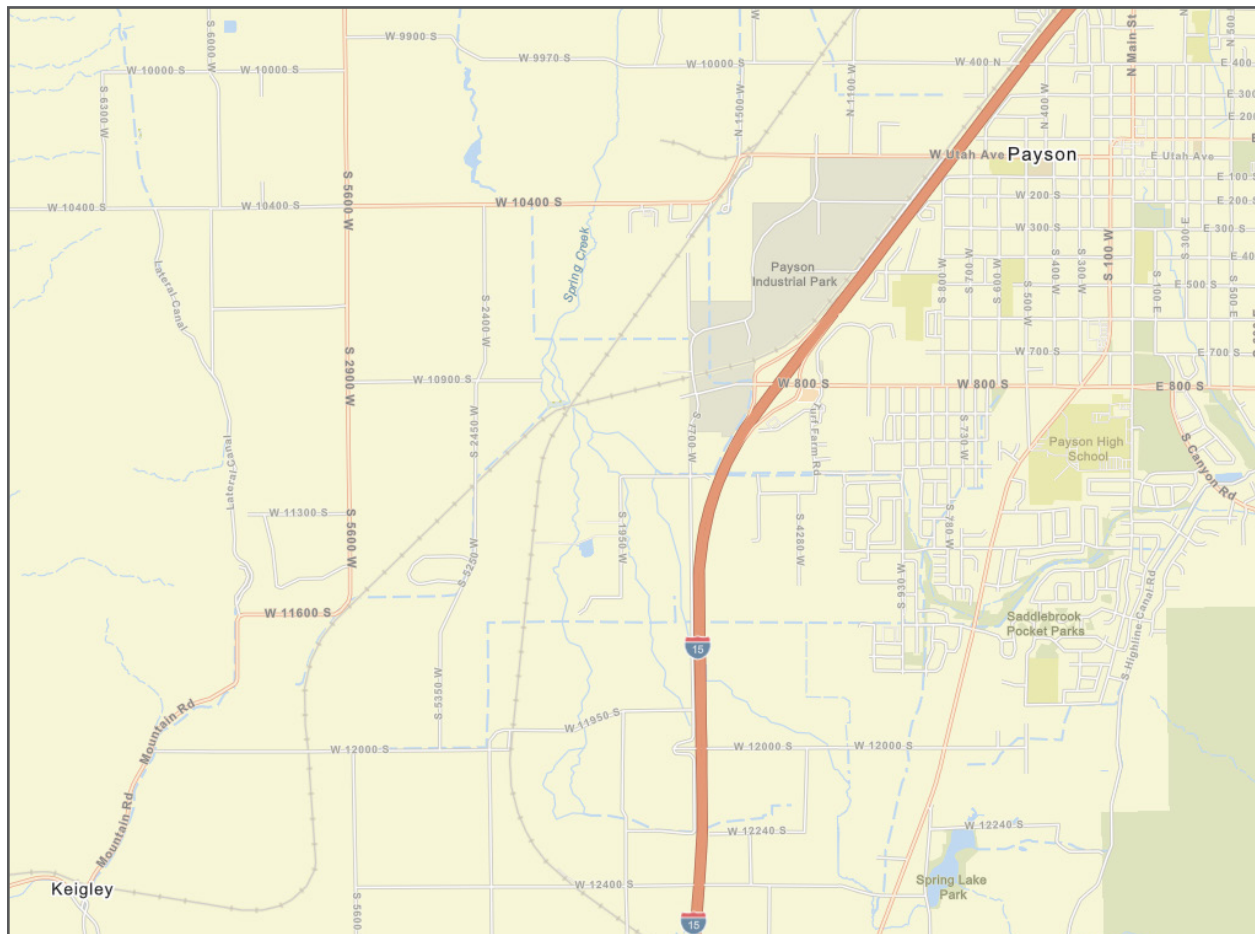


Figure 6. East/West Connectivity on the West side of I-15

WETLANDS

There are wetlands surrounding Spring Creek through the study area. Some of the wetlands were recently delineated for a proposed development. Others are potential wetlands based on historical data. The wetlands are a critical part of the alignment analysis to identify an alternative with minimal impacts to the wetland area. Figure 7 shows the potential wetlands in the study area.

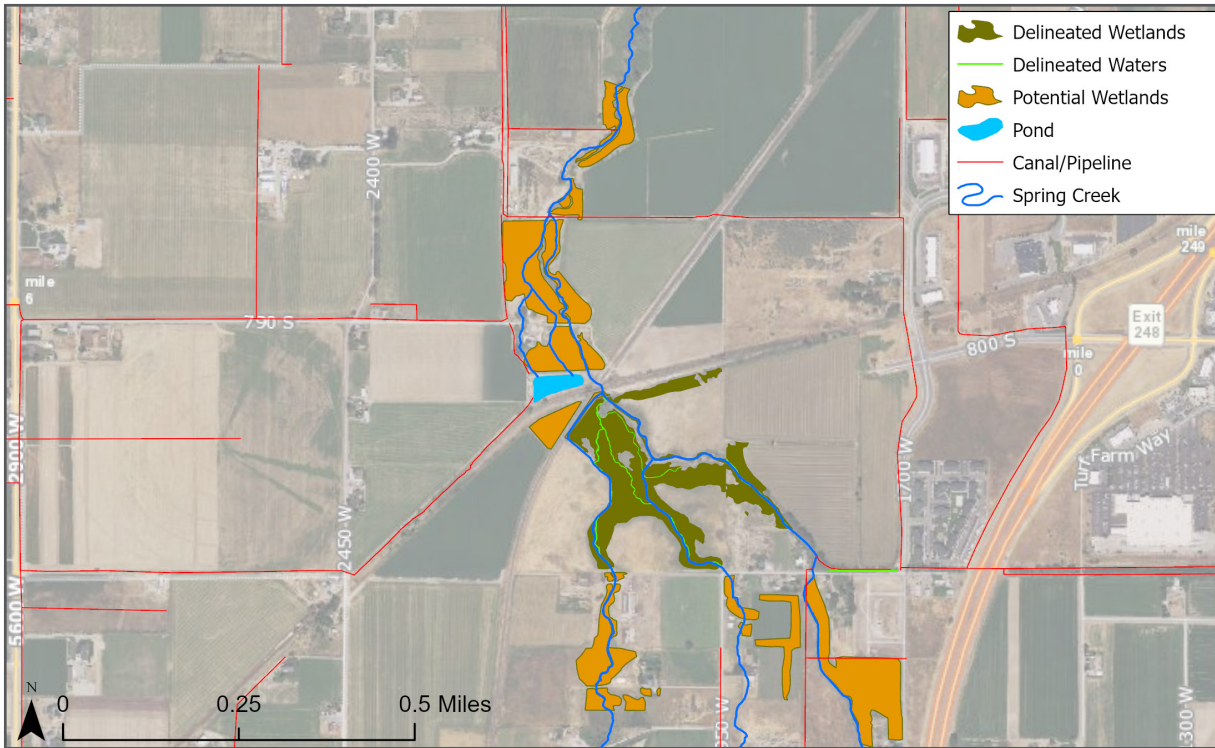


Figure 7. Potential Wetlands



HISTORIC PROPERTIES OR STRUCTURES

The study area also contains a number of historical structures, homes or property. Figure 8 identifies some of the potential historical sites in the study area. These would be evaluated in more detail in a full environmental study. For this feasibility study, they are identified as potential historical sites. Minimizing impacts to potential historical sites is important to the evaluation of potential alignments.

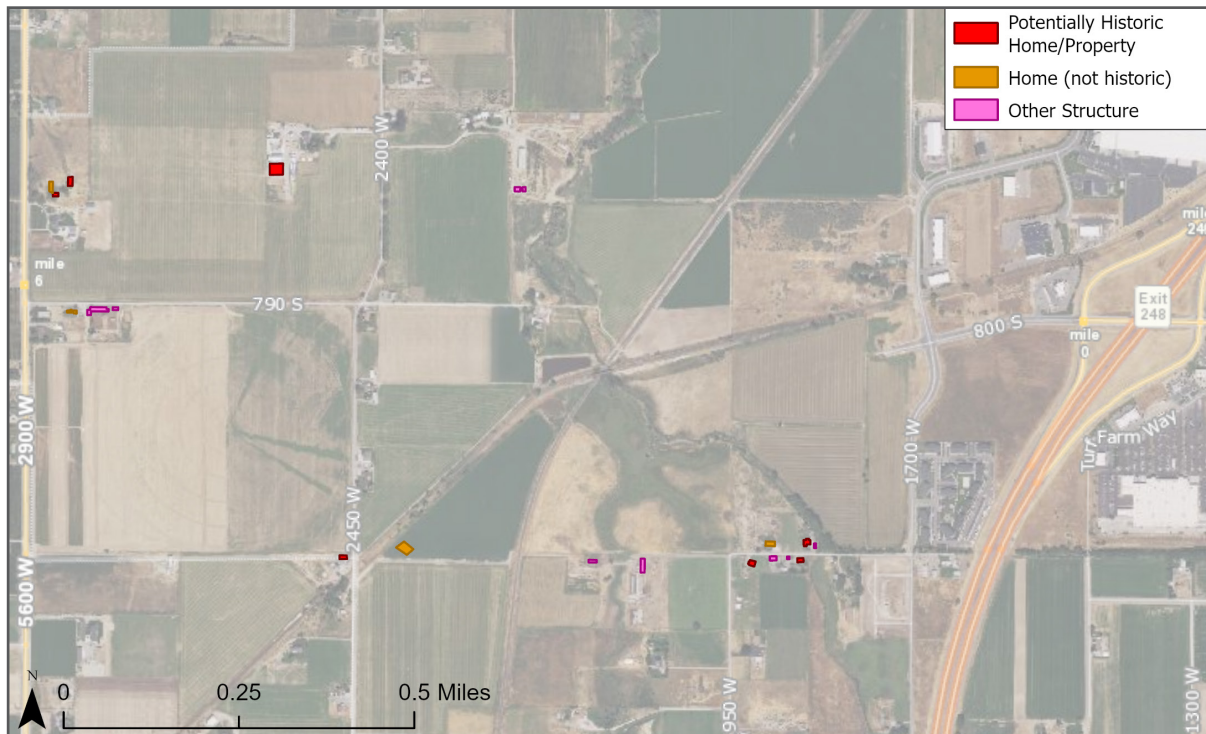


Figure 8. Potential Historical Sites

KEY ORIGINS AND DESTINATIONS

This proposed roadway has the potential to improve travel times between points west of I-15 with I-15 and locations within Payson.

Key connections are outlined below:

- **EMERGENCY RESPONSE:** From projected residential high growth areas to Mountain View Hospital, Police Station, and Fire Station.
- **FREIGHT:** From high use freight locations (example: Payson Fruit Growers) to I-15 northbound.
- **RESIDENTIAL DEVELOPMENTS:** From projected residential high growth areas to existing commercial uses within Payson (Walmart, etc.).
- **EMPLOYMENT AREAS:** From Payson City to employment areas to the west.

Additionally, as the current major connection Utah Avenue to locations west of I-15 has an at-grade railroad crossing this proposed roadway has the potential to significantly improve travel time reliability. Projected 2050 travel times with and without new connections are discussed in detail in the Alternatives Evaluation.

TRAVEL DEMAND MODEL

The travel demand modeling was performed using a version of the model which was modified for the 2020 Payson Transportation Master Plan. This version of the model provided additional Transportation Analysis Zone (TAZ) and roadway detail, and refined demographic estimates within Payson and thus was determined to be the best starting point for this project.

The travel demand model modified for the 2020 Payson Transportation Plan was based on the “beta v.8.3.1 2019-01-09” framework and demographics / roadway network outside of Payson. All travel demand modeling was performed in Bentley Cube version 6.5.0.

Details regarding modeling specifics such as roadway network, demographics, and scenario testing are described in later sections of the report.

EMPLOYMENT AND HOUSEHOLDS

Base year (2019) employment and household estimates were developed by the 2020 Payson Transportation Plan. These estimates were reviewed by the project team and deemed to be reasonable. As shown in the figure below household and employment densities are currently fairly low west of the rail lines. Land uses are predominantly rural residential and agricultural.

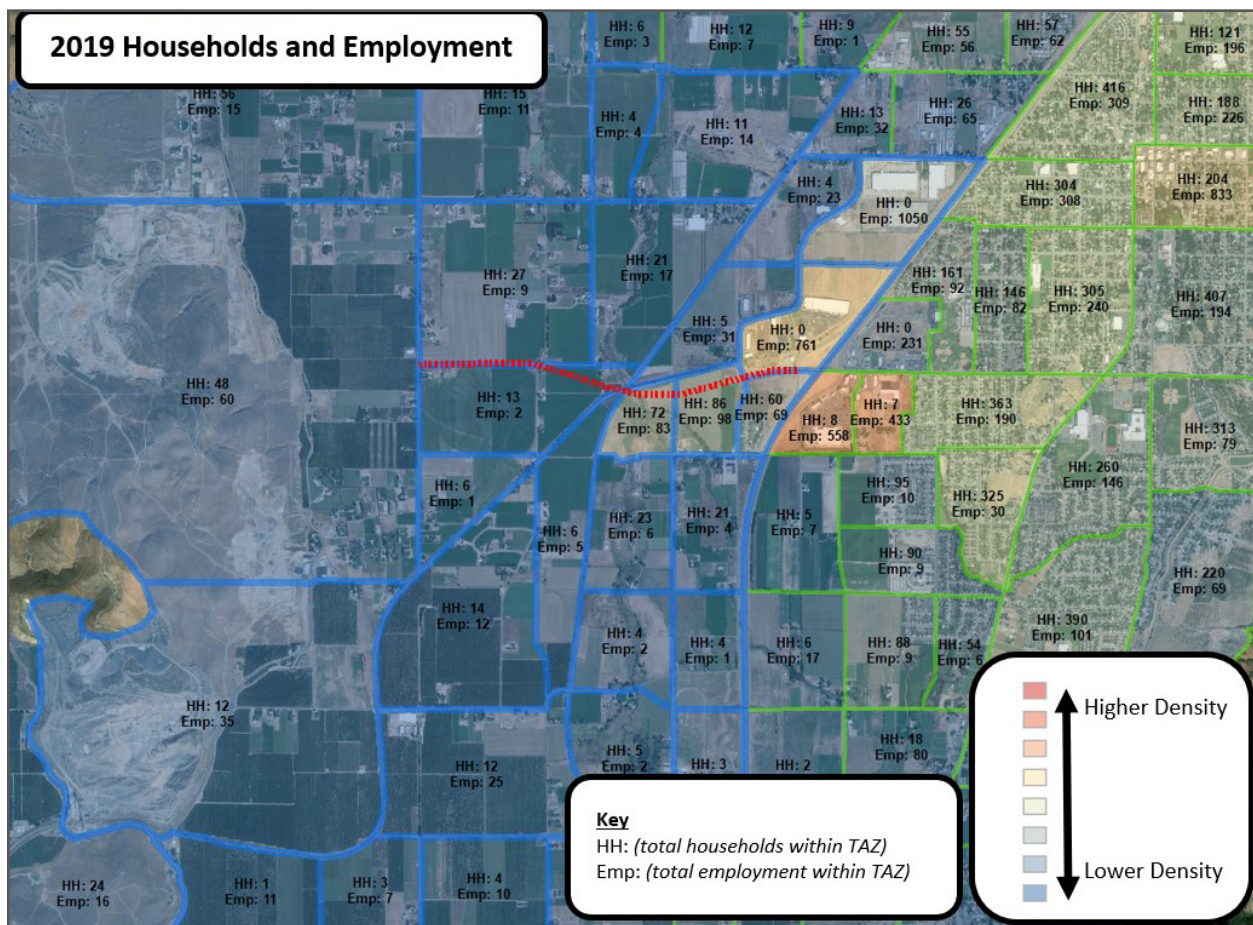


Figure 9. 2019 Households and Employment

EXISTING RAILROADS

The potential alignment of 800 South will cross two rail lines. An active main line owned by Union Pacific (UP) named the Sharp Subdivision (red line in figure below), and an abandoned line named the Tintic Industrial Lead (green line in figure below).



Figure 10. Existing Railroads

TINTIC INDUSTRIAL LEAD

The Tintic Lead was purchased by Utah Transit Authority (UTA) from UP in 2002 for future light rail construction with UP maintaining surface operation rights. This line crosses over the Sharp Subdivision on a wooden trestle bridge. The wooden trestle bridge is called “Red Bridge”. This line has been sold to UTA by UP and is not in a current condition to provide rail service. This line has been out of use for many years. However, UTA is reserving this line for potential extension of the UTA Frontrunner. This will require some maintenance work on the line, but the right-of-way must still be respected and observed under the same restrictions and requirements of any UP line. Southwest of here the line is owned by Tintic. A comprehensive history of the Tintic Industrial Lead can be found here: <https://utahrails.net/drgw/rg-tintic-1908-2016.php>.

SHARP SUBDIVISION

The north / south aligned rail line which travels under “Red Bridge” is called the Sharp Subdivision and is owned by Union Pacific and is currently active. Usage numbers could not be provided by Union Pacific.

AT GRADE CROSSINGS

There are two existing at-grade crossings shown in the figure above. Crossings 800875P and 806874H are both private field crossing and would not be approved by UP for the use of this project. To cross either rail line, an above grade crossing would be required by UP. At-grade crossings would not be considered without special consideration. The proposed above grade crossing would need to be paid for and designed by the City/State and must meet UP standards. UP design standards for railroad grade separation projects are found on their website here: <https://www.up.com/customers/ind-dev/operations/specs/index.htm>.

UNION PACIFIC DESIGN REQUIREMENTS

A few items worthy of note for grade separated crossings are the following:

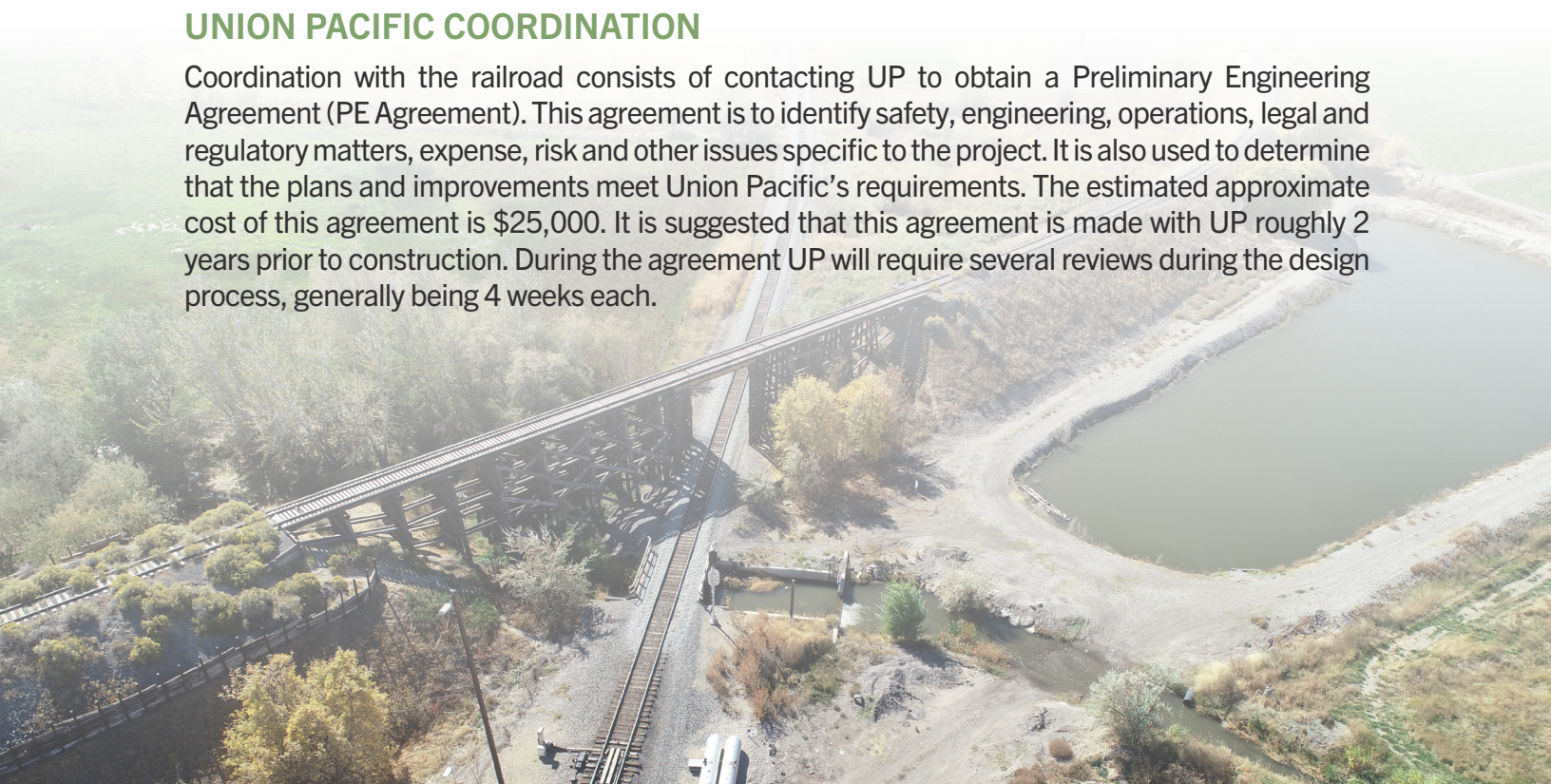
- Maintain a vertical clearance of 23'-4" from the top of rail.
- Maintain a horizontal clearance of the width of the railroad owned right-of-way (see Railroad Right-of-Way paragraph below).
- Project cannot change the flow or characteristics of drainage ditches along the rail line.
- Railroad coordination will be required a few years in advance of construction (see UP Coordination paragraph below).

RAILROAD RIGHT-OF-WAY

The railroad right-of-way for both the Sharp Subdivision and the Tintic Industrial Lead is roughly 100' (50' each way from the center line of the rail). This measurement was taken from online maps and will need to be verified by UP during the PE agreement. The span of any structure passing over the rail line must not encroach on this right-of-way.

UNION PACIFIC COORDINATION

Coordination with the railroad consists of contacting UP to obtain a Preliminary Engineering Agreement (PE Agreement). This agreement is to identify safety, engineering, operations, legal and regulatory matters, expense, risk and other issues specific to the project. It is also used to determine that the plans and improvements meet Union Pacific's requirements. The estimated approximate cost of this agreement is \$25,000. It is suggested that this agreement is made with UP roughly 2 years prior to construction. During the agreement UP will require several reviews during the design process, generally being 4 weeks each.



FUTURE CONDITIONS

A future year 2050 analysis was performed. Assumptions regarding the projected 2050 roadway network and demographics are described below.

ROADWAY NETWORK

The following assumptions were made regarding the 2050 roadway network:

- All Phase 1 through 3 MAG TransPlan50 projects are built. (Projects are shown below in Figure 11)
- Additional Payson City projects identified in the Transportation Master Plan are not built.

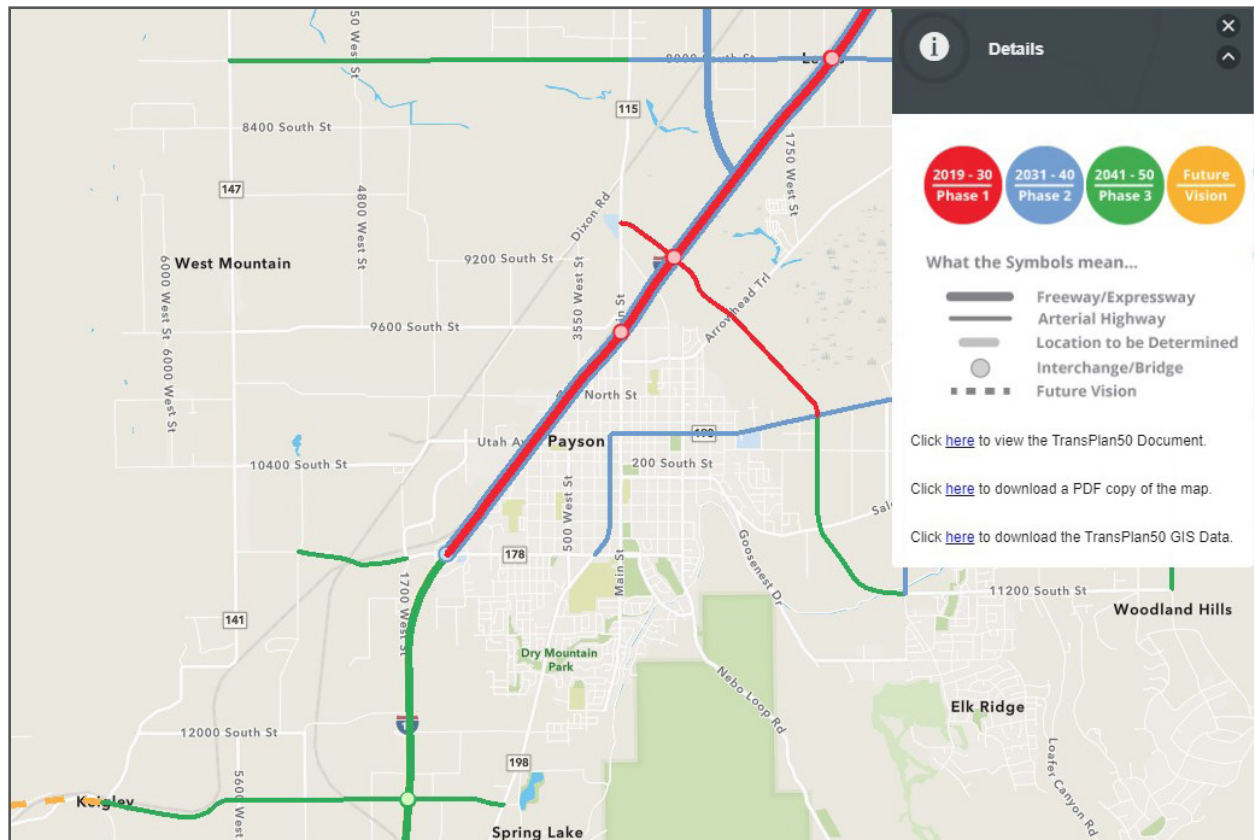


Figure 11. MAG TransPlan 50 Projects near Payson

COORDINATION WITH UDOT

While this roadway will be constructed as a Payson City roadway, there is potential that ownership could transfer to UDOT in the future. Thus, close coordination with UDOT and adherence to UDOT design standards were followed throughout the process.

EMPLOYMENT AND HOUSEHOLDS

Future year employment and household estimates were developed through discussions with Payson City and MAG, and through review of the Payson Master Plan estimates, MAG travel demand model estimates, and the future land uses in the Payson City General Plan.

2050 demographic projections were developed to estimate the travel demands along the proposed segment of 800 South in a build-out condition. While this likely won't occur by 2050, it will most likely occur not too long thereafter, and still well within the design-life of the bridge over the rail lines.

In these demographics it was assumed that most agricultural and rural residential land would be redeveloped as low density residential (2 – 5 units per acre), with pockets of median density residential (7 – 10 units per acre) and neighborhood commercial (small grocery store, gas station, restaurants, etc.).

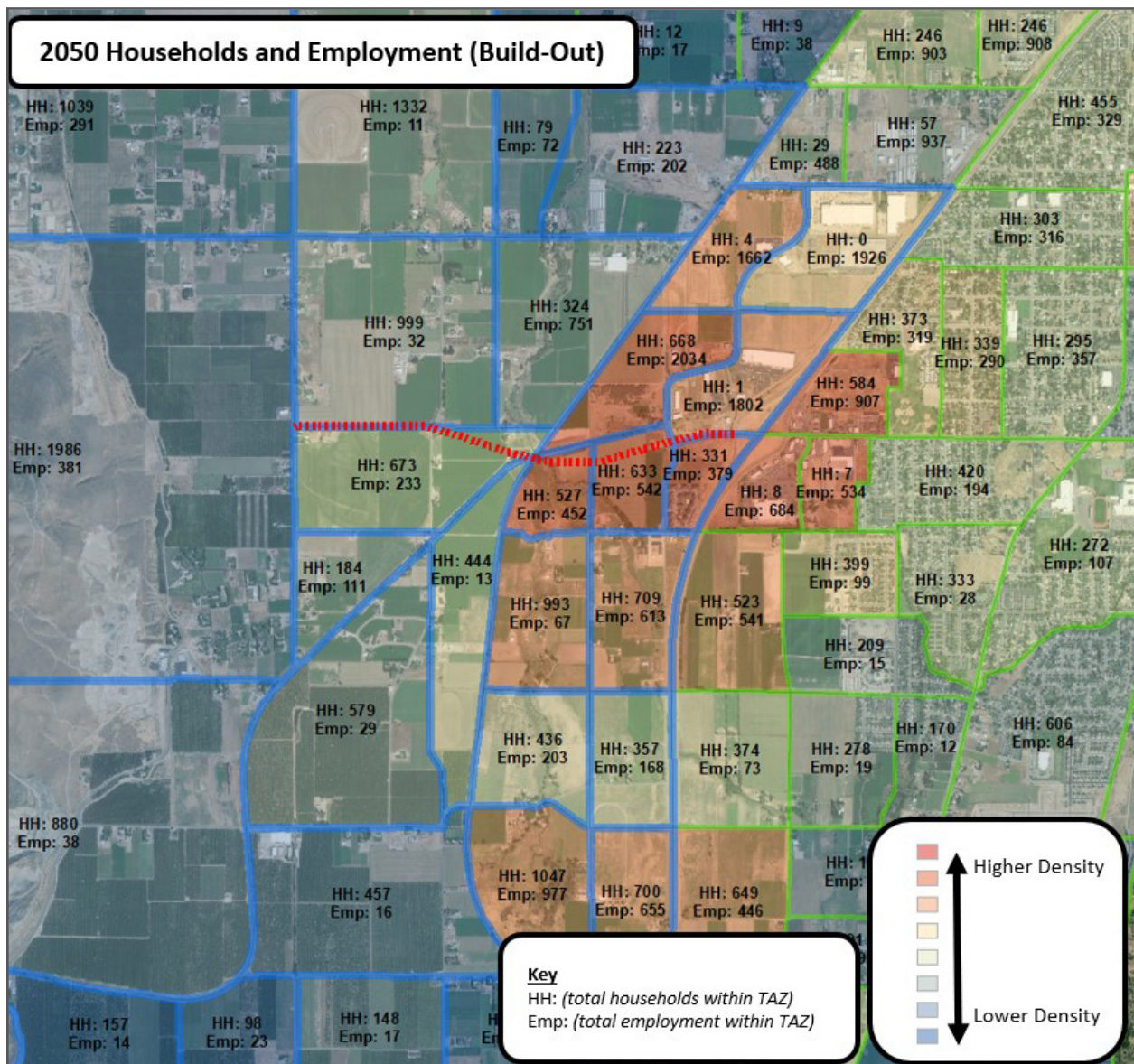


Figure 12. 2050 Households and Employment (Build-Out)

800 SOUTH ROADWAY CHARACTERISTICS

The characteristics of the 800 South connection were discussed in detail with the Steering Committee and key stakeholders. The cross section, functional class, speed, connectivity, access spacing, walkability, and aesthetics of the roadway were key discussion points. The following decisions were made based on these discussions.

FUTURE VOLUMES

Traffic volumes are projected to be greater than 20,000 vehicles per day in most alignment alternatives. Alignment alternatives with less daily traffic than this were eliminated from the evaluation as they don't meet the project purpose. Differences in daily traffic volumes between alternatives are discussed in detail in the Alternative Evaluation section.

Graphics below show the projected daily traffic volumes in 2050 and the trip distribution of all vehicles that are projected to utilize the new segment of roadway.

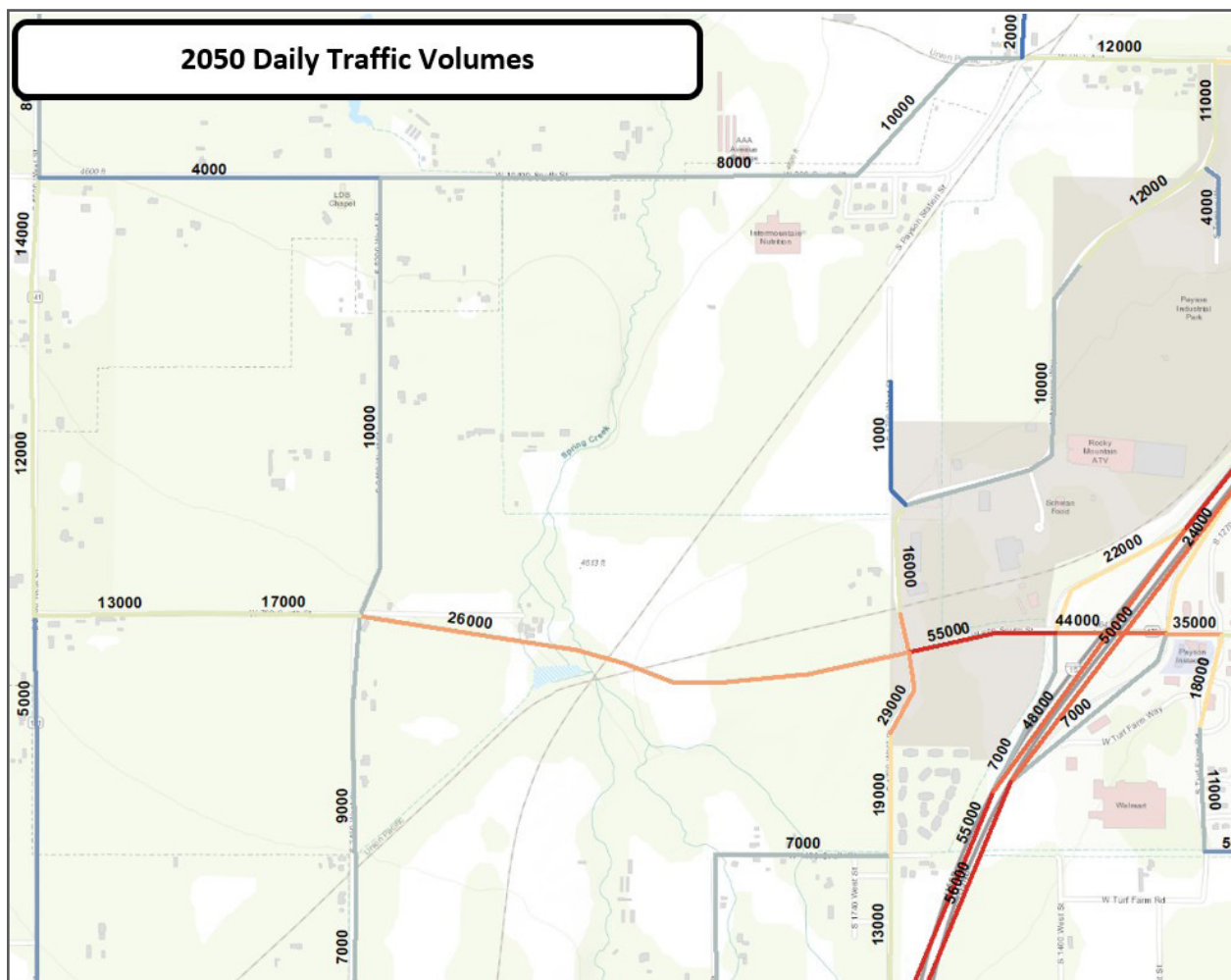


Figure 13. 2050 Daily Traffic Volumes

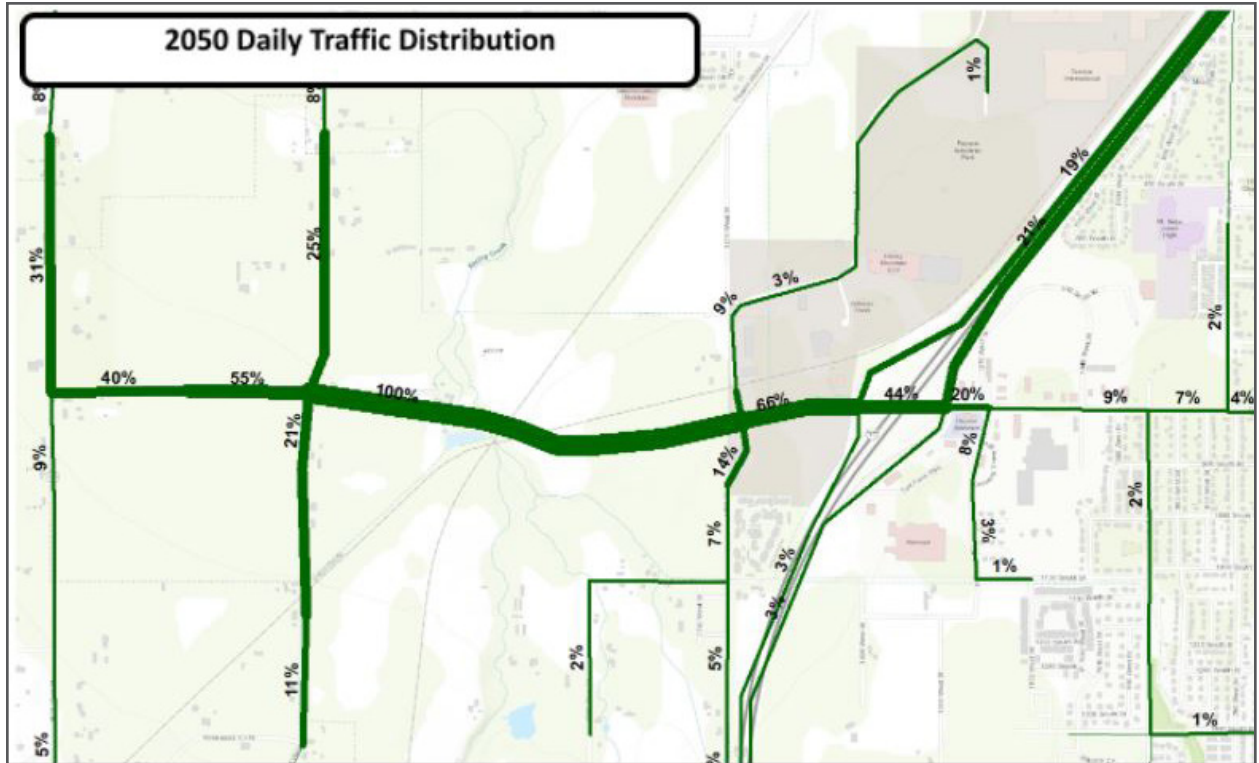


Figure 14. 2050 Daily Traffic Distribution



CROSS SECTION

As discussed in the previous section, the travel demand modeling analysis showed a future demand of approximately 26,000 vehicles per day. This indicates that a 5-lane cross section will be needed to accommodate future traffic volumes. The Steering Committee, stakeholders, and the general public all emphasized the need for active transportation opportunities. Therefore, the proposed 800 South cross section was designed to include buffered bike lanes, a 6 foot sidewalk, and a 10 foot paved path. A 7 foot park strip was also included. The potential cross section for the 800 South Corridor is shown in Figure 15.

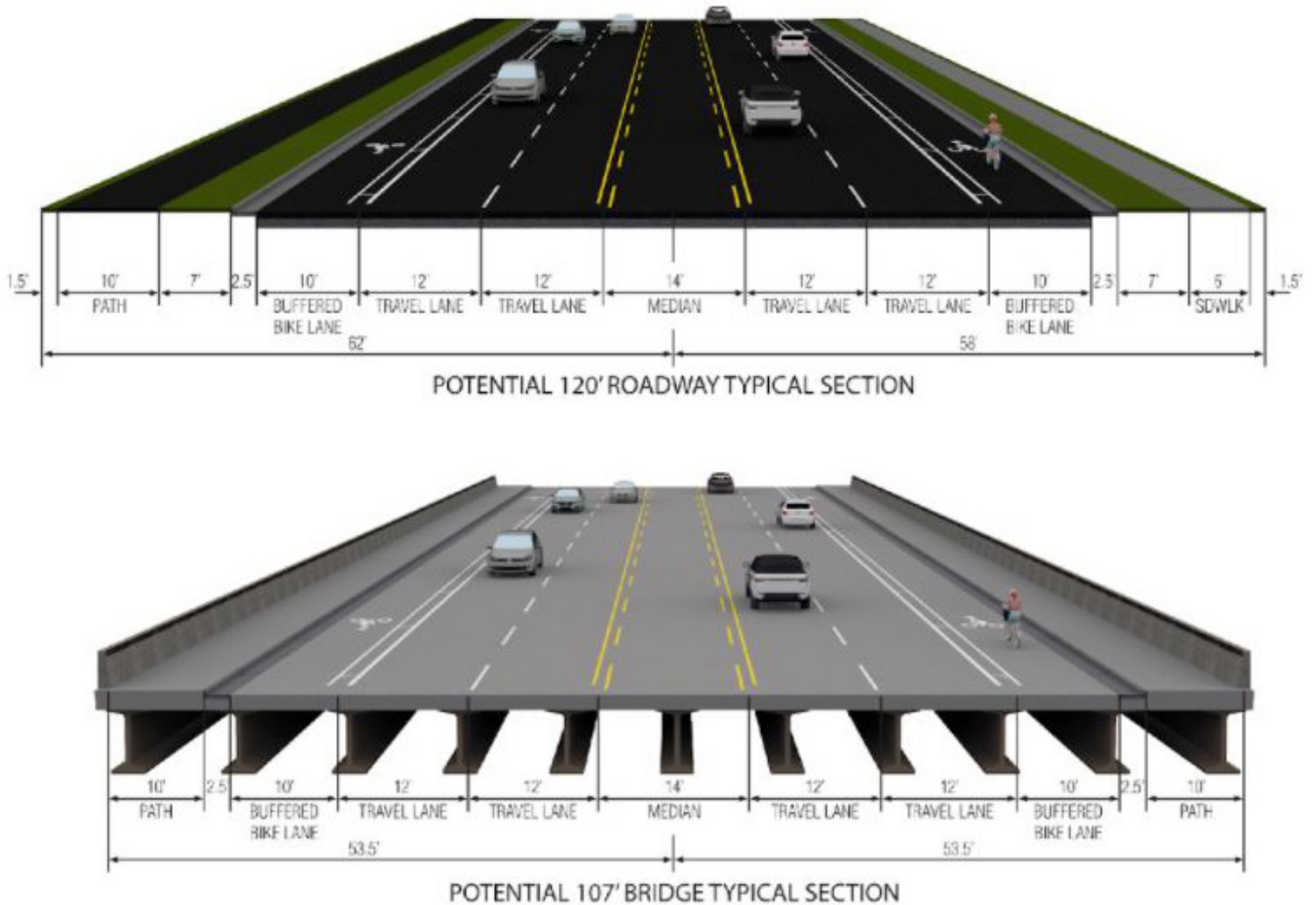


Figure 15. Potential Cross Section(s)

ACCESS CATEGORY

It is recommended that the 800 South corridor be planned and categorized as a Category 4: Regional Rural Importance roadway. This is a UDOT access category designation. If this roadway does not become a UDOT roadway in the future, it is still recommended that the same signal and access spacing requirements are followed. This will help to preserve the

safety and efficiency of the corridor. A Category 4 roadway allows minimum signal spacing of a ½ mile (2,640 feet), minimum street spacing of 660 feet, and minimum access spacing of 500 feet. This is shown in Table 1.

	Minimum Signal Spacing (feet)	Minimum Street Spacing (feet)	Minimum Driveway Spacing (feet)	to 1st Right-in Right-out Driveway (feet)	to 1st Intersection (feet)	from last Right-in Right-out Driveway (feet)
1 (1)	N/A	N/A	N/A	N/A	N/A	N/A
2 (S-R)	5,280	1,000	1,000	1,320	1,320	1,320
3 (S-U)	2,640	N/A	N/A	1,320	1,320	1,320
4 (R-S)	2,640	660	500	660	1,320	500
5 (R-PU)	2,640	660	350	660	1,320	500
6 (R-U)	1,320	350	200	500	1,320	500
7 (C-R)	1,320	300	150	N/A	N/A	N/A
8 (C-U)	1,320	300	150	N/A	N/A	N/A
9 (0)	1,320	300	150	N/A	N/A	N/A
10 (F-FR)	1,320	660	N/A	N/A	N/A	N/A

Table 1. UDOT Access Categories

SPEED LIMIT

The posted speed limit of the 800 South roadway is recommended to be 40 mph. This provides good regional mobility, while still providing safe access to adjacent land uses and intersections. All alternatives were designed with a 45 mph design speed (5 mph above the posted speed).



DESIGN ASSUMPTIONS

Based on initial runs of the travel demand model, preliminary analysis and discussions with the project steering committee the following assumptions were made regarding roadway design regardless of alternative route.

- The concepts used the 5-lane cross section with 120' right-of-way width shown in Figure 15.
- The concepts were designed to meet UDOT standards.
- The concepts were designed to meet railroad standards.
- The roadway alignments were designed with a 45 mph design speed.
- A maximum of 5.5 percent vertical grade was used for the concept design.

ALTERNATIVE EVALUATION

Using feedback from property owners, stakeholders, and the steering committee, the project team brainstormed multiple alignment alternatives for the 800 South corridor. These were discussed in detail, including potential impacts, benefits, and issues. Through this brainstorming process, seven potential alignment alternatives were identified.

OVERVIEW OF ALTERNATIVES

A total of seven potential alternatives were developed and are outlined below:

- 650 South with 1700 West Split (pg. 23)
- Split Alternative (pg. 24)
- 650 South (pg. 25)
- 800 South (pg. 26)
- 1100 South (pg. 27)
- 650 South Hybrid (pg. 28)
- 800 South Hybrid (pg. 29)

Each of these alternatives provides east / west connectivity between I-15 and 2900 West (SR-141). These alignments are shown in the following pages, along with pros and cons, and a summary of the screening process along the bottom.



650 SOUTH W/ 1700 WEST SPLIT ALTERNATIVE | Payson 800 South Study



- PROS**
- Does not split potential Red Bridge Station Development
 - Lower bridge height
-
- CONS**
- Splits 1700 West & American Way intersection
 - Railroad crossing / intersection impacts
 - Property impacts near the interchange
 - Moves 1700 West intersection closer to I-15

1 INITIAL SCREENING

Meets Project Purpose of Meeting Regional Traffic Demand	✓
Meets UDOT Interchange Spacing Requirements	✗
Reduces Number of Bridge Structures & Bridge Crossing Distance	✓

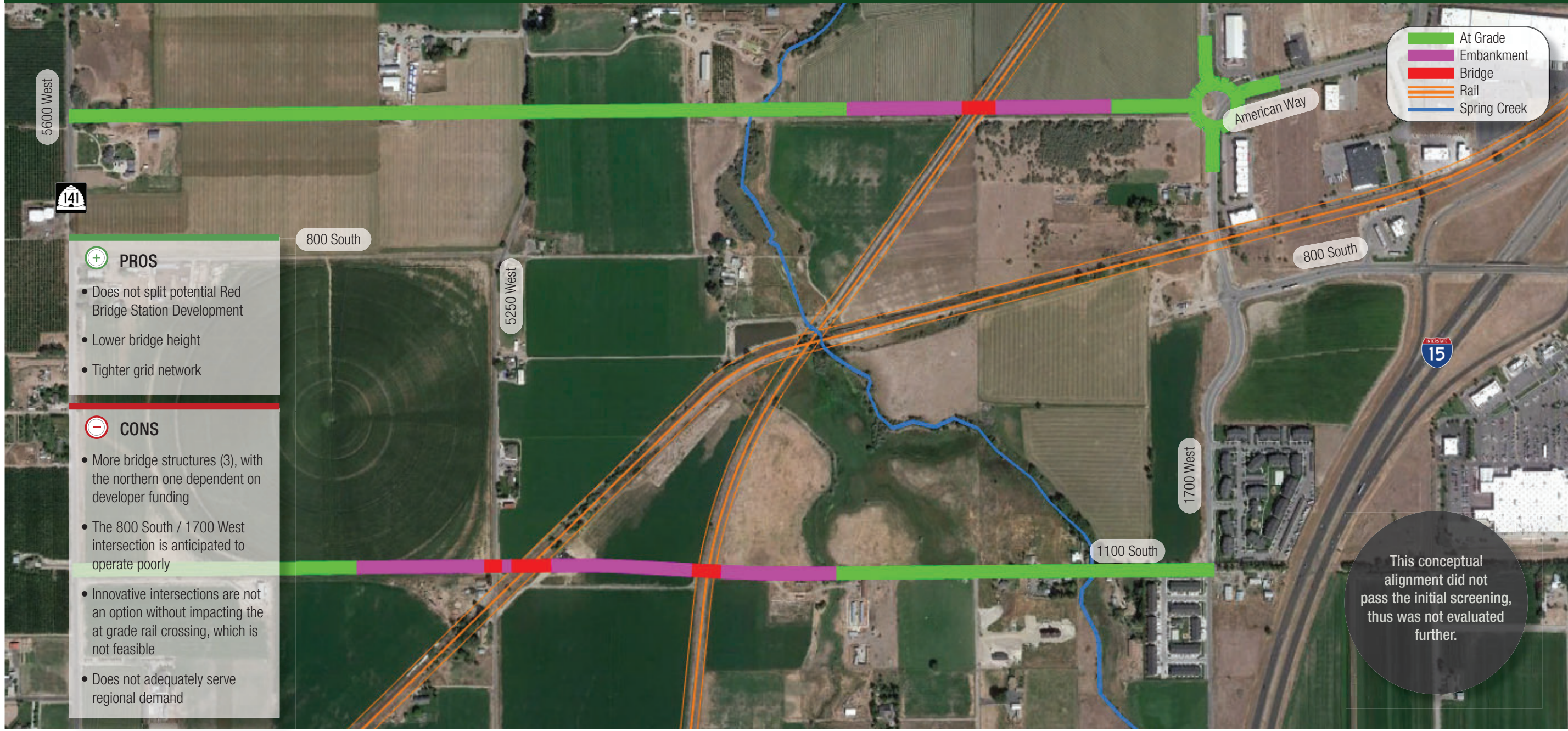
2 IMPACT SCREENING

Potential Environmental Impact	○
Right of Way	○
Vehicle Mobility	○
Non-Motorized	○
Roadway & Bridge Design	○

3 FINAL SCREENING

Public Feedback	○
Agency Feedback	○
Bridge Constructability Review	○

SPLIT ALTERNATIVE | Payson 800 South Study



- +** PROS
- Does not split potential Red Bridge Station Development
 - Lower bridge height
 - Tighter grid network

- CONS
- More bridge structures (3), with the northern one dependent on developer funding
 - The 800 South / 1700 West intersection is anticipated to operate poorly
 - Innovative intersections are not an option without impacting the at grade rail crossing, which is not feasible
 - Does not adequately serve regional demand

This conceptual alignment did not pass the initial screening, thus was not evaluated further.

1 INITIAL SCREENING

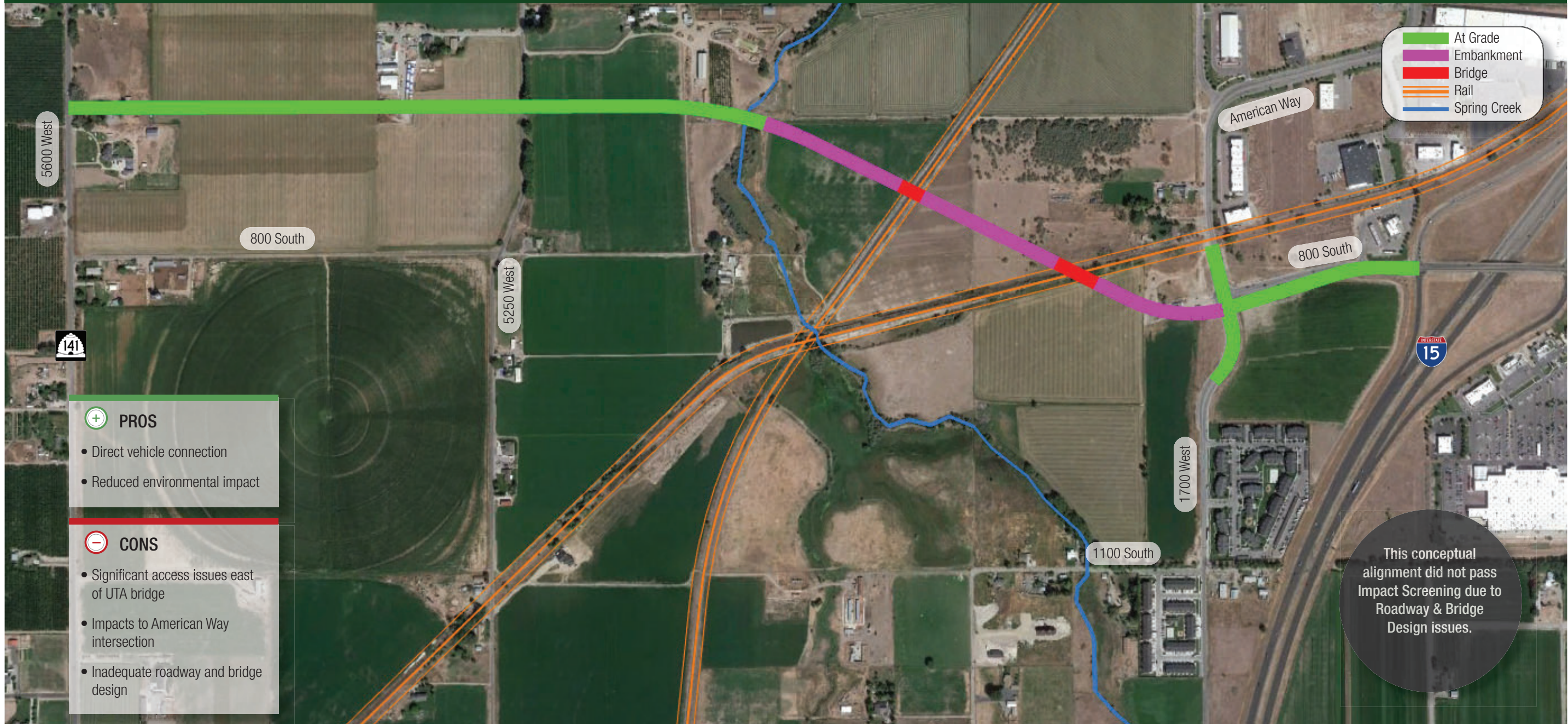
Meets Project Purpose of Meeting Regional Traffic Demand	✗
Meets UDOT Interchange Spacing Requirements	✓
Reduces Number of Bridge Structures & Bridge Crossing Distance	✗

2 IMPACT SCREENING

Potential Environmental Impact	○
Right of Way	○
Vehicle Mobility	○
Non-Motorized	○
Roadway & Bridge Design	○

3 FINAL SCREENING

Public Feedback	○
Agency Feedback	○
Bridge Constructability Review	○



- PROS**
- Direct vehicle connection
 - Reduced environmental impact
- CONS**
- Significant access issues east of UTA bridge
 - Impacts to American Way intersection
 - Inadequate roadway and bridge design

This conceptual alignment did not pass Impact Screening due to Roadway & Bridge Design issues.

1 INITIAL SCREENING

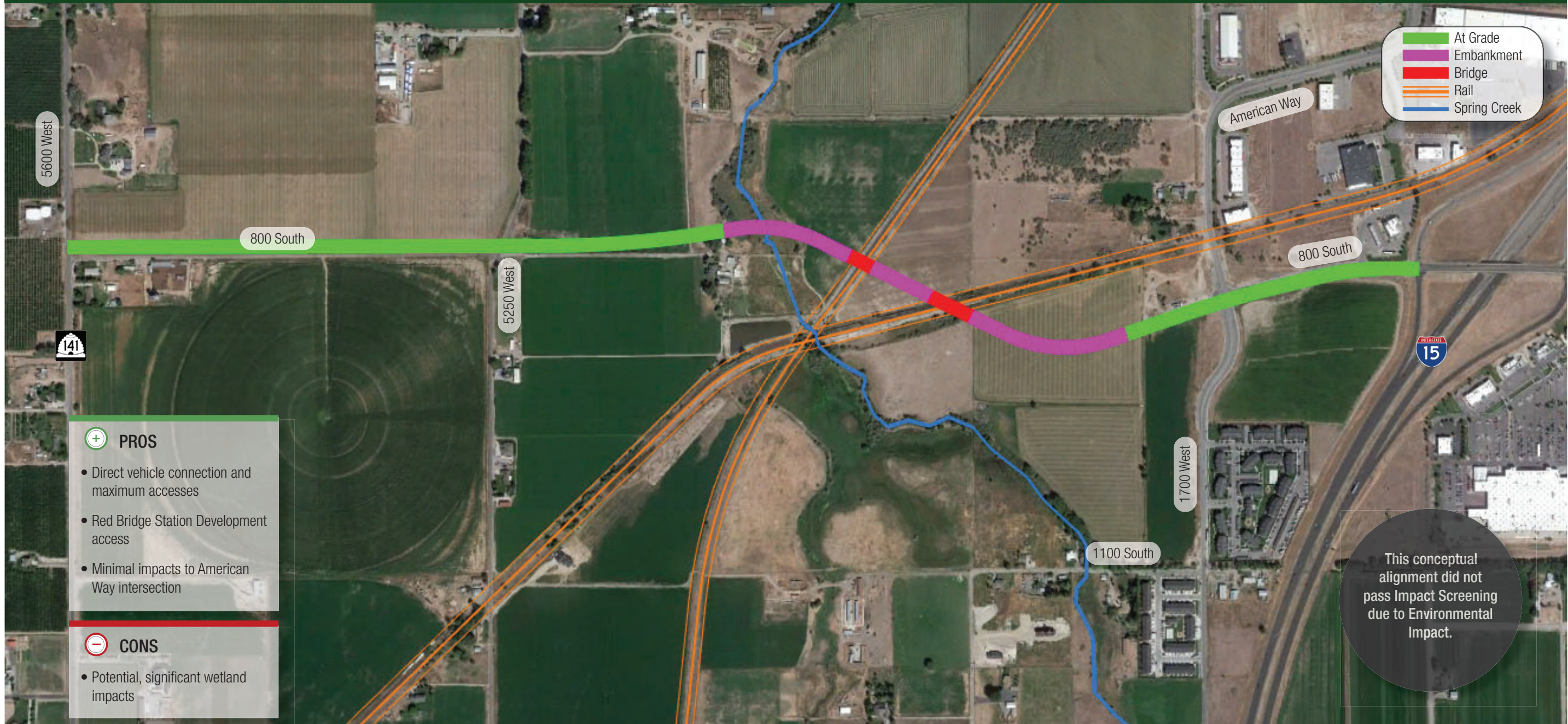
Meets Project Purpose of Meeting Regional Traffic Demand	✓
Meets UDOT Interchange Spacing Requirements	✓
Reduces Number of Bridge Structures & Bridge Crossing Distance	✓

2 IMPACT SCREENING

Potential Environmental Impact	●
Right of Way	●
Vehicle Mobility	●
Non-Motorized	●
Roadway & Bridge Design	○

3 FINAL SCREENING

Public Feedback	○
Agency Feedback	○
Bridge Constructability Review	○



- +** PROS
- Direct vehicle connection and maximum accesses
 - Red Bridge Station Development access
 - Minimal impacts to American Way intersection
- CONS
- Potential, significant wetland impacts

1 INITIAL SCREENING

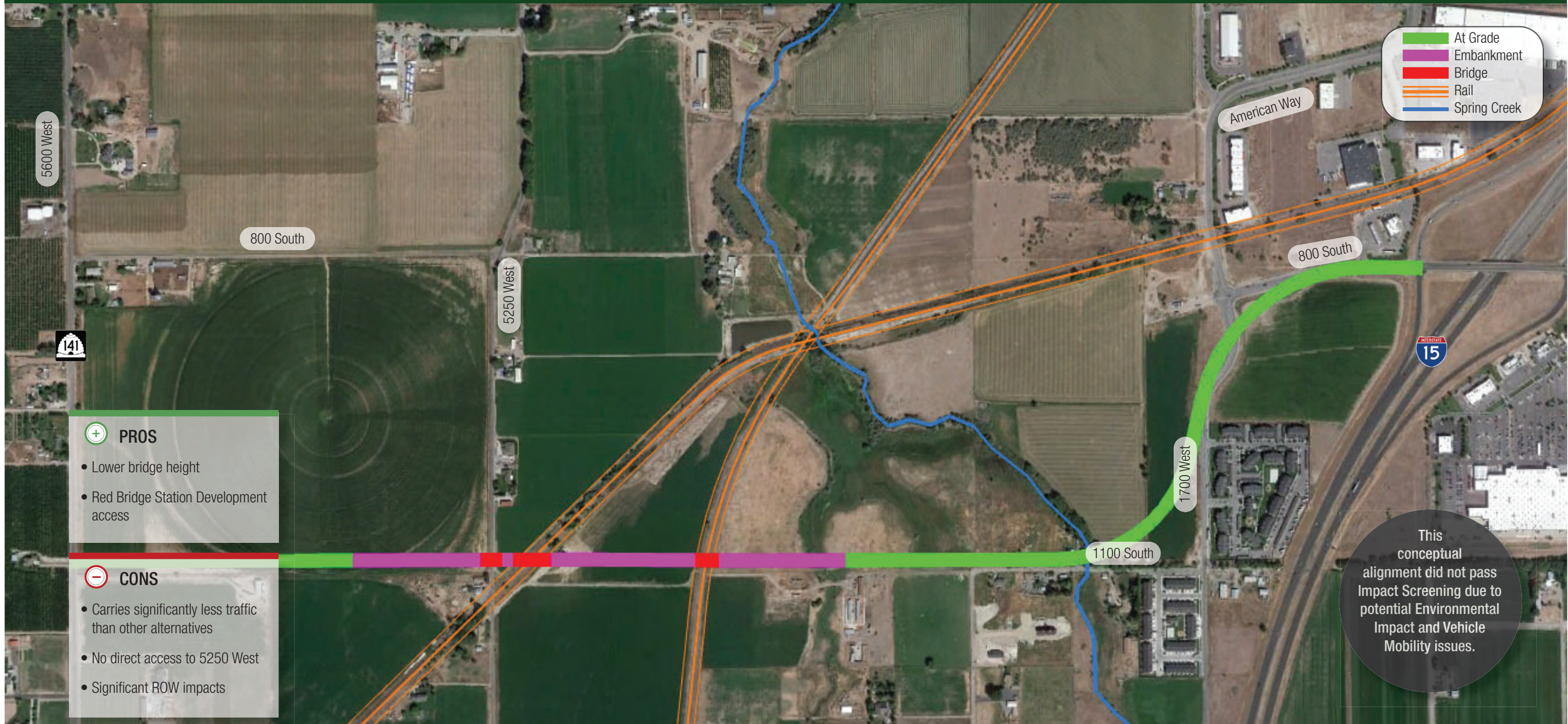
Meets Project Purpose of Meeting Regional Traffic Demand	✓
Meets UDOT Interchange Spacing Requirements	✓
Reduces Number of Bridge Structures & Bridge Crossing Distance	✓

2 IMPACT SCREENING

Potential Environmental Impact	○
Right of Way	●
Vehicle Mobility	●
Non-Motorized	●
Roadway & Bridge Design	●

3 FINAL SCREENING

Public Feedback	○
Agency Feedback	○
Bridge Constructability Review	○



1 INITIAL SCREENING

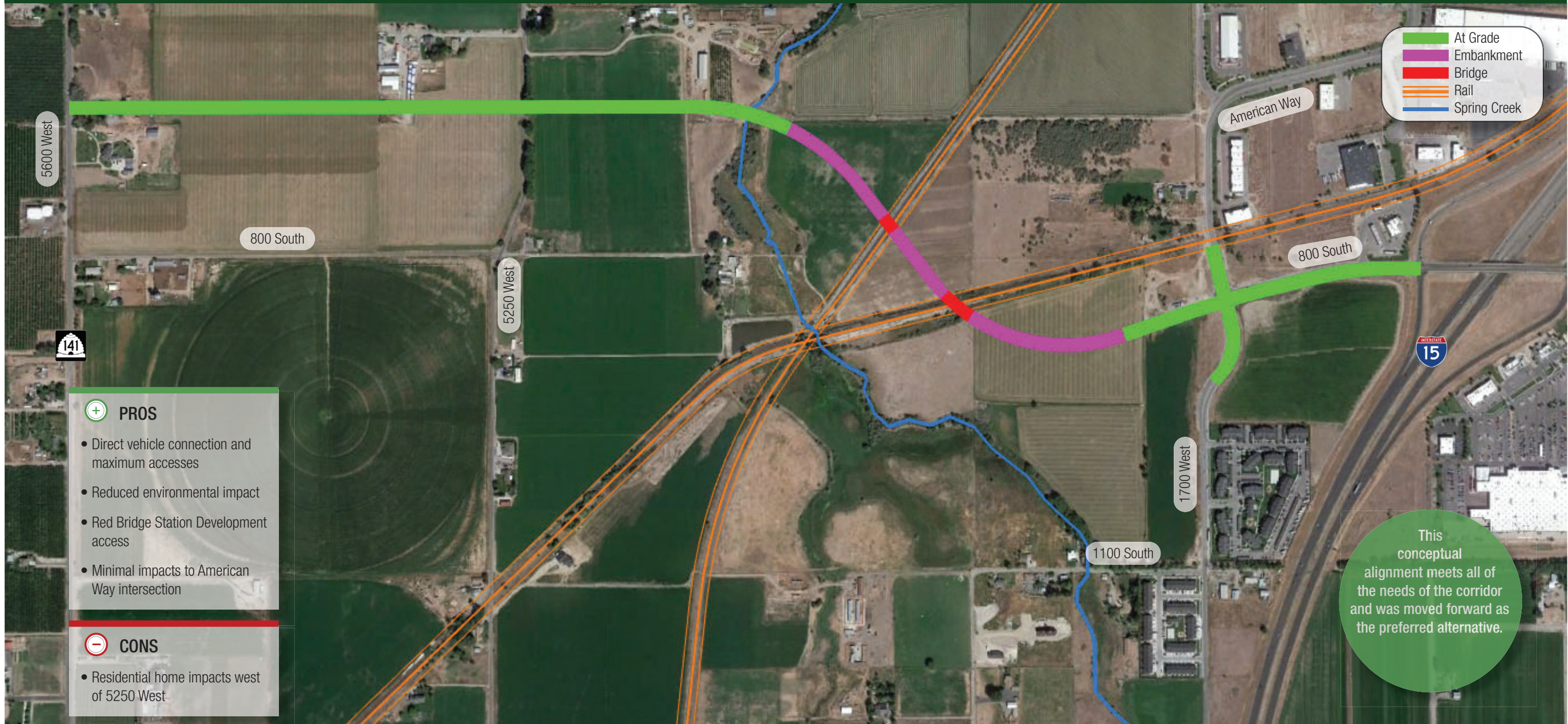
Meets Project Purpose of Meeting Regional Traffic Demand	✓
Meets UDOT Interchange Spacing Requirements	✓
Reduces Number of Bridge Structures & Bridge Crossing Distance	✓

2 IMPACT SCREENING

Potential Environmental Impact	○
Right of Way	○
Vehicle Mobility	○
Non-Motorized	●
Roadway & Bridge Design	◐

3 FINAL SCREENING

Public Feedback	○
Agency Feedback	○
Bridge Constructability Review	○



- +** PROS
- Direct vehicle connection and maximum accesses
 - Reduced environmental impact
 - Red Bridge Station Development access
 - Minimal impacts to American Way intersection
- CONS
- Residential home impacts west of 5250 West

1 INITIAL SCREENING

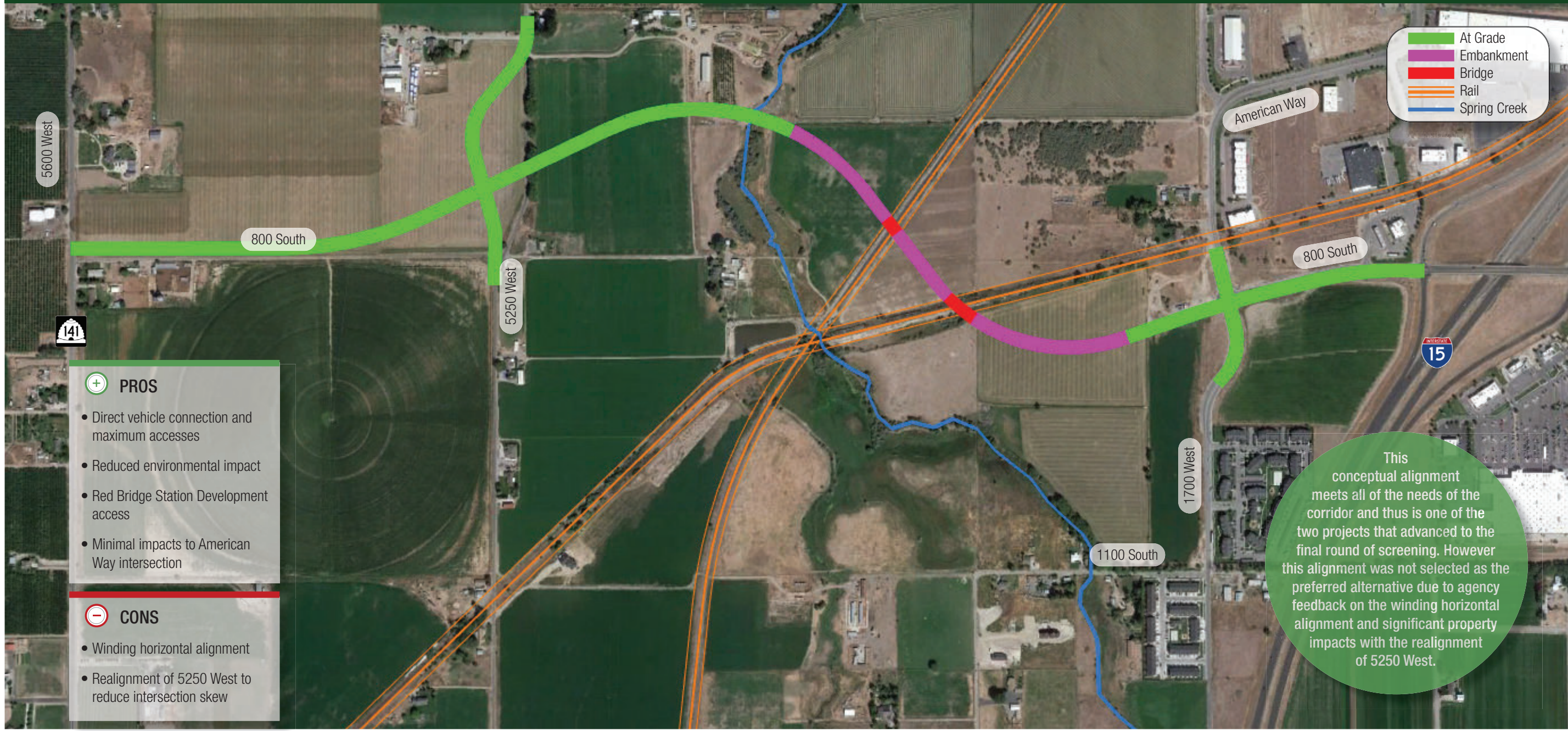
Meets Project Purpose of Meeting Regional Traffic Demand	✓
Meets UDOT Interchange Spacing Requirements	✓
Reduces Number of Bridge Structures & Bridge Crossing Distance	✓

2 IMPACT SCREENING

Potential Environmental Impact	●
Right of Way	●
Vehicle Mobility	●
Non-Motorized	●
Roadway & Bridge Design	●

3 FINAL SCREENING

Public Feedback	●
Agency Feedback	●
Bridge Constructability Review	●



- PROS**
- Direct vehicle connection and maximum accesses
 - Reduced environmental impact
 - Red Bridge Station Development access
 - Minimal impacts to American Way intersection
-
- CONS**
- Winding horizontal alignment
 - Realignment of 5250 West to reduce intersection skew

This conceptual alignment meets all of the needs of the corridor and thus is one of the two projects that advanced to the final round of screening. However this alignment was not selected as the preferred alternative due to agency feedback on the winding horizontal alignment and significant property impacts with the realignment of 5250 West.

1 INITIAL SCREENING

Meets Project Purpose of Meeting Regional Traffic Demand	✓
Meets UDOT Interchange Spacing Requirements	✓
Reduces Number of Bridge Structures & Bridge Crossing Distance	✓

2 IMPACT SCREENING

Potential Environmental Impact	●
Right of Way	●
Vehicle Mobility	●
Non-Motorized	●
Roadway & Bridge Design	●

3 FINAL SCREENING

Public Feedback	●
Agency Feedback	●
Bridge Constructability Review	●

INITIAL SCREENING

All of the alternatives were evaluated using an initial screening process. The initial screening process used the following high level criteria to narrow down the alternatives. The three initial screening criteria are as follows:

- Meets Project Purpose of Meeting Regional Traffic Demand
- Meets UDOT Interchange Spacing Requirements
- Reduces Number of Bridge Structures and Bridge Crossing Distance

The initial screening process eliminated two alternatives including the 650 South with 1700 West split alternative and the Split Alternative.

650 SOUTH WITH 1700 WEST SPLIT

The 650 South with 1700 West alternative was eliminated because it did not meet UDOT's interchange spacing requirements. The alternative relocated the 1700 West/800 South intersection to be much closer to the I-15 interchange.

SPLIT ALTERNATIVE

The Split Alternative was eliminated in the initial screening because it did not meet two of the initial screening criteria. This alternative did not meet the overall project purpose of meeting regional traffic demand. This alternative proposed two smaller roadway connections instead of a single larger arterial connection. These smaller roadways did not meet the future regional traffic demand in the area. In addition, this alternative was eliminated because it did not minimize the number of bridge structures and bridge crossings. Instead of two bridges, this alternative includes three bridge structures as well as maintains an existing at-grade crossing. Further, the southern bridge over the Tintic Industrial Lead railroad would have to be extended to also cross over 2400 West (5200 West county designation).

IMPACT SCREENING

The next screening process that was used to evaluate each alternative was the impact screening. The impact screening evaluated impacts in the following categories:

- Potential Environmental Impact
- Right of Way
- Vehicle Mobility
- Non-Motorized
- Roadway & Bridge Design

A thorough analysis was completed for each category listed above on each alternative. Each of these were quantified and listed for each alternative. Based on the findings, a rating was given for each category. Little to no impact was given an acceptable rating (shown as a green dot), moderate impact was given a moderate rating (shown as a yellow half circle), and alternatives with unacceptable impacts were eliminated (shown as a red circle). A short summary of the analysis for each impact category is listed below:

Potential Environmental Impact:

Each alternative was reviewed by environmental specialists at BioWest to determine if there were

potential wetland, historical building, or other environmental impacts. A summary of the analysis is provided here. The full analysis memo is provided in Appendix B.

WETLANDS

Two sources of GIS data for wetlands were used to compare estimated impact footprints of conceptual alternatives. Data from a previously completed wetland delineation for a private developer was provided by Western-Enviro, Inc. To estimate wetlands in other areas, polygons of potential wetlands were developed using the National Wetland Inventory and available aerial imagery. The footprint of the 800 South conceptual alignment had the most estimated wetland impact, 2.46 acres, and the 650 South the least, 0.70 acre.

The 1100 South design had an estimated 1.17-acre wetland impact. Each of the hybrid designs impact the same wetlands with an estimated 0.81-acre impact. All of these exceed 0.5-acre of impact and would likely require an Individual Permit from the U.S. Army Corps of Engineers and compensatory mitigation.



Figure 16. Wetlands, Conceptual Alignments

Wetlands would need to be formally delineated in the potential impact area as the funded project moves closer to design and implementation. Additional wetland avoidance and minimization may be possible in the design process. Also, the extent of jurisdictional wetlands can change over time with land development and changes in surface and groundwater hydrology.

STREAMS AND CANALS

Data for streams and canals were obtained from the Utah Geospatial Resource Center (UGRC) and were supplemented with interpretation from aerial imagery and a map screenshot provided by

the Strawberry Highline Canal Company. Streams and canals near the 650 South and 800 South hybrid alignments are illustrated in Figure 17.

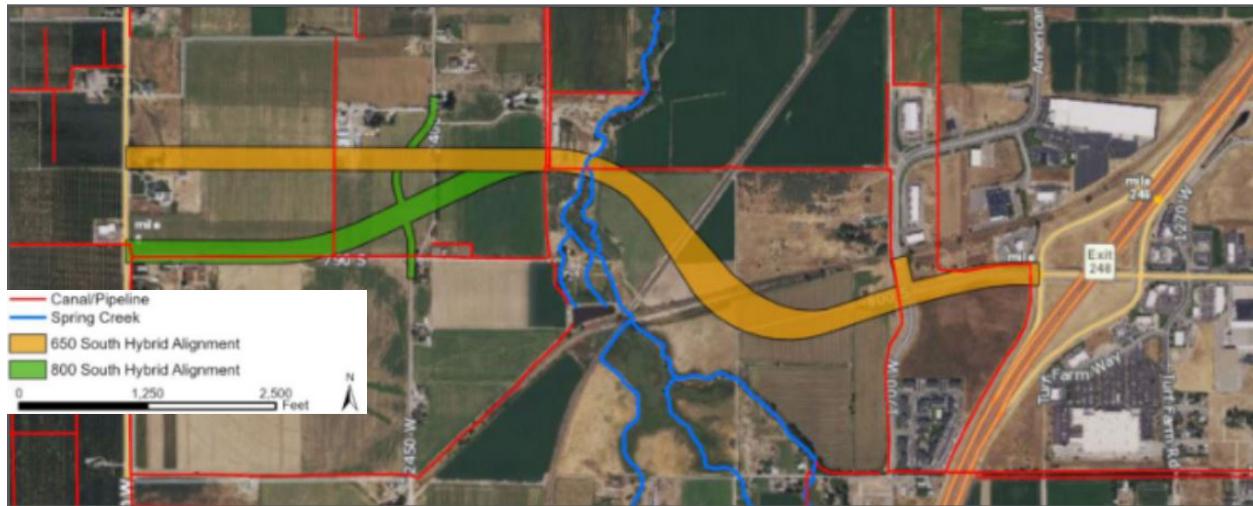


Figure 17. Canals and Streams

Resource Indicators	Conceptual Alternatives			Hybrid Designs		Preferred Alignment
	650 South	800 South	1100 South	650 South Hybrid	800 South Hybrid	
WATER RESOURCES						
Delineated wetland, acres	---	0.37	1.05	0.27	0.27	---
Potential wetland, acres	0.70	2.09	0.12	0.54	0.54	0.56
Total wetland, acres	0.70	2.46	1.17	0.81	0.81	0.56
Potential streams, acres	0.12	0.16	0.08	0.15	0.15	0.15
New stream crossings, number	0	1	0	0	0	0
Existing stream crossings, number	1	0	3	1	1	1
Canals/pipelines intersected, linear feet	1,238.8	4,298.2	4,454.1	1,238.8	3,085.2	1,238.8
Water right diversions intersected, number	1	3	4	1	2	1
PROTECTED AND SPECIAL STATUS SPECIES						
June sucker (fish)	Unlikely to occur					
Ute ladies'-tresses (flower)	Potential to occur in any of the intersected wetlands					
Northern leopard frog	Potential to occur in any of the intersected wetlands					
SOCIAL AND HISTORIC						
Potential residential relocations, number	1	3	6	1	1	1
Potential noise-impacted receptors, number	1	1	18	0	4	0
Potential historic structures, number	2	1	4	3	0	3
LAND USE AND AGRICULTURE						
Partial acquisition parcels, number	34	32	41	32	39	32
Barns/outbuildings within 15 ft., number	3	5	5	4	4	4
Prime farmland, acres	44.3	42.3	47.3	45.3	48.3	33.6
Agricultural Protection Areas	None identified					
Entitled Properties	None identified					

Table 2. Potential Environmental Impacts

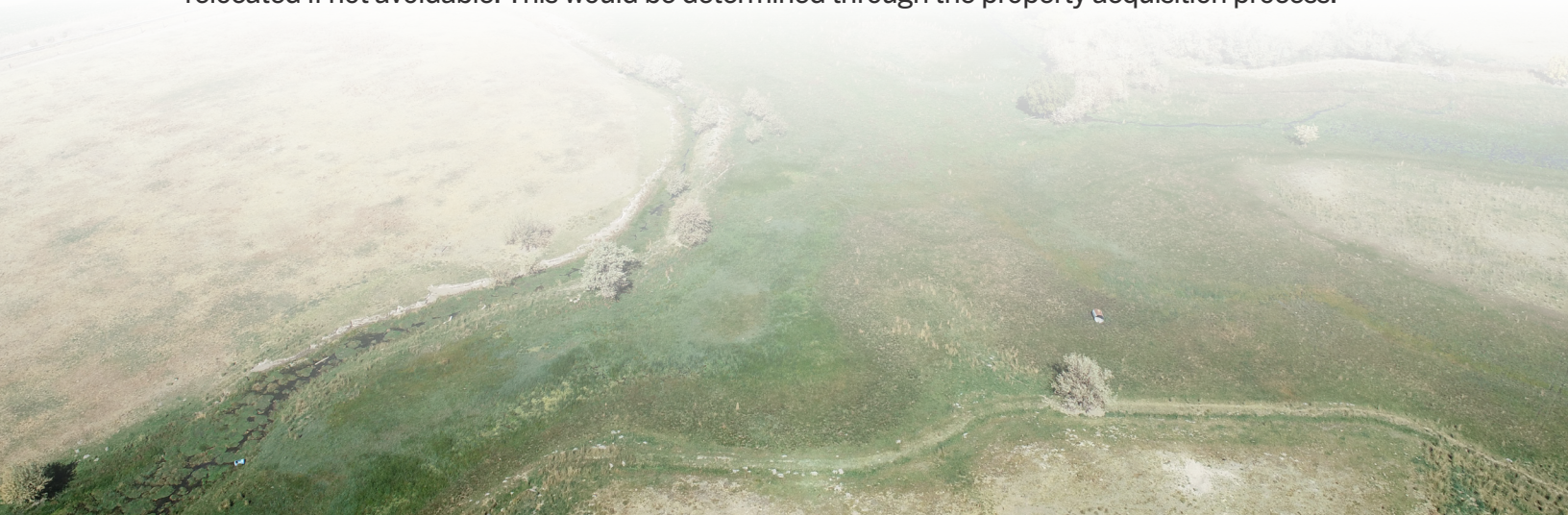
One stream, Spring Creek, occurs in the study area. Spring Creek flows northward toward Utah Lake. There are several branches of the stream in the study area. Existing bridges and culverts overlapping streams within the project area were identified using aerial photography. Conceptual alternatives were compared with previously identified streams and existing bridges or culverts as well as aerial photography. Any new stream crossings were identified. Crossings that already have a culvert or bridge, even if the alignment footprint would exceed the current crossing, were not counted as new stream crossings.

Canals in the area belong to the Strawberry Highline Canal Company and deliver water to the company's water users. In some locations, canals have been piped underground. Some of the canals and pipelines are located on rights-of-way obtained by the U.S. Bureau of Reclamation (BOR). Perpendicular crossings are not likely to be problematic, and parallel intersections could likely be resolved by either shifting the alignment of the roadway during the design process or by proposing replacement of the canals or pipelines segment that would be intersected. The 650 South and 800 South hybrid alignments both intersect pipelines near where these alignments cross Spring Creek, shown in Figure 17. These are 30-inch buried pipelines and the BOR maintains a 30-foot-wide easement over them.

Intersecting the BOR pipeline easements requires a use-authorization under federal regulation 43 CFR 429. The process is described on BOR's website (<https://www.usbr.gov/lands/index.html>). A permit application (Standard Form 299) would need to be submitted to BOR's Provo Area Office during the design/environmental phases of project development. Design details would be reviewed by BOR engineers to ensure that the road would not interfere with the pipeline operation or maintenance. Under the regulation, use-authorizations for easements and rights-of-way for periods in excess of 25 years are also subject to approval from water-user organizations; in this case, the Strawberry Highline Canal Company is the water-user organization. At a minimum, the appropriate water-user organizations must be notified of all use-authorizations prior to their issuance to avoid potential conflicts between the requested use-authorization and the water user-organizations' need to operate and maintain the facilities for which they have contractual responsibility (43 CFR 429.6(b)).

WATER RIGHT DIVERSIONS

Data for water-rights diversions were obtained from Utah Division of Water Rights through UGRC. The 1100 South conceptual alignment directly intersects the most diversions (four) and the 650 South the least (one). Diversions could be avoided with design modifications, or they could be relocated if not avoidable. This would be determined through the property acquisition process.



PROTECTED AND SPECIAL STATUS SPECIES

Databases available from the U.S. Fish and Wildlife Service (USFWS) and the Utah Natural Heritage Program (UNHP) were searched for potential occurrences of federally listed threatened and endangered species and state-listed sensitive species. The USFWS lists two potentially occurring federally listed threatened species, the June sucker fish species (*Chasmistes liorus*) and the Ute ladies'-tresses orchid flower (*Spiranthes diluvialis*).

June sucker is endemic to Utah Lake and portions of the Provo River are designated as critical habitat for spawning. Spring Creek is hydrologically connected to Utah Lake but is unlikely to provide spawning habitat. It is therefore unlikely that June sucker would occur here, and it is unlikely that any of the conceptual alternatives would adversely affect June sucker.

Suitable habitat for Ute ladies'-tresses can include riparian areas, and wetlands situated on low floodplain shelves and oxbow wetlands along medium-to-large streams and rivers of moderate gradient, wet meadows, and irrigated pastures. Wetlands and irrigated pastures in the study area could be suitable habitat for Ute ladies'-tresses.

The UNHP lists four state-sensitive species with known occurrences within 2 miles of the study area. These are Columbia spotted frog (*Rana luteiventris*), Utah milksnake (*Lampropeltis triangulum*), northern leopard frog (*Lithobates pipiens*), and southern leatherside chub (*Lepidomeda aliciae*). Of these, only the northern leopard frog is likely to occur based on habitats in the study area and known distributions of the species.

Because the two potentially occurring species in the study area, Ute ladies'-tresses and Northern leopard frog, are both wetland/riparian species, conceptual alternatives with the fewest effects to wetlands and streams are also the least likely to adversely affect these species. As previously noted, of the three conceptual alternatives, the 800 South alternative has the most potential wetland impacts and the 650 South alternative the least. However, the 1100 South alternative has the most existing stream crossings and has 1.17 acres of potential wetland impacts. The two hybrid alignments have the same wetland and stream impacts. A closer examination of habitat suitability and the potential need to complete a No Effect Determination or Biological Assessment can be determined as the funded project moves closer to design and implementation.

SOCIAL AND HISTORIC RESOURCES

Social and historic indicators evaluated were potential residential relocations, noise-impacted residences, and historic-period structures. Residential structures within 15 feet of a conceptual alignment footprint were identified as potential relocations. Residential properties within 100 feet were identified as potentially noise-impacted. Structures (residential and other) within 15 feet that were 45 years old or older, based on county parcel records, were considered potentially historically eligible.

In general, because the study area is mostly undeveloped at the present time, there are few potential social and historic impacts overall. The 1100 South conceptual alternative has the greatest social and historic impact potential with 6 potential relocations, 18 potential noise-impacted residences (including multi-unit properties), and 4 potential historic structures. The 650 South conceptual alternative has the least, with one potential relocation, one potential noise-impact, and two potential historic structures. Although the 800 South conceptual alternative has only one potential historic structure and one potential noise-impacted residence, it has three potential residential relocations.

The hybrid designs for 650 South and 800 South each have one potential residential relocation, but differ in terms of potential noise-impacted (none for the 650 South hybrid alignment but four for the 800 South hybrid alignment) and potential historic structures (three for 650 South and none for 800 South). Again, overall the study area appears to have low potential for social and historic impacts; however, development of the area may change before a project moves closer to design and implementation, and additional issues may be identified during the design phase. Also, potential archaeological resources have not been identified. Formal archaeological and architectural reconnaissance surveys would be needed.

LAND USE AND AGRICULTURE

Potential land use and agricultural impacts were assessed using parcel data to examine the number of properties intersected (partial acquisitions), using aerial photography to identify barns and other outbuildings that would be potentially removed, and obtaining soils data to identify acres of prime farmlands that would be potentially converted. GIS datasets were also queried for potential county-designated Agricultural Protection Areas and land entitlements (such as conservation easements). None of these were identified in the study area.



Based on existing conditions, all of the conceptual alignments would have similar effects to land use and agriculture. The 1100 South conceptual alignment would have the largest number of partial property acquisitions, 41. The 650 South conceptual alignment intersects 34 parcels that would be partial acquisitions and the 800 South conceptual alignment intersects 32 parcels that would be partial acquisitions. These numbers do not include the residential relocations (full acquisitions) described for social impacts.

Few barns or outbuildings were identified within 15 feet of the conceptual alignments (which would indicate probable need to remove the structure). The 1100 South and 800 South conceptual alignments each have five barns/outbuildings within 15 feet. The 650 South conceptual alignment has three barns or outbuildings.

All of the conceptual alignments have more than 40 acres of prime farmlands intersected, with the 1100 South conceptual alignment having the most, 47.3 acres.

The hybrid alignments of 650 South and 800 South are similar in terms of land use and agricultural impacts. The 800 South hybrid alignment has 7 more partial acquisition properties (39) compared to the 650 South alignment (32). Each of the hybrid alignments has four barns or outbuildings within 15 feet. The 800 South hybrid alignment has 48.3 acres of prime farmlands and the 650 South hybrid alignment has 45.3 acres of prime farmlands

The overall potential environmental analysis is summarized in Table 3. The 800 South alignment was eliminated because of the significant wetland impact associated with the alignment. The 1100 South alignment was eliminated because of significant wetland and stream crossings associated with the alignment.

Potential Environmental Impact	650 South	800 South	1100 South	650 South Hybrid	800 South Hybrid
Wetlands	●	○	○	●	●
Stream crossings	●	●	○	●	●
Historic Structure impact	●	●	◐	●	●
Agriculture impact	●	●	●	●	●

Table 3. Potential Environmental Impact

Right of Way

Each alternative that was progressed to the impact screening was reviewed to determine the total square feet of right-of-way that would be required, including an estimate of construction easements. An estimate for total takes were also included in the analysis. The 1100 South alignment requires two total takes, while the 800 South and 650 South alignments require one.

The total acquisition area for each alternative is as follows:

- 650 South: 1,841,031 sq. ft.
- 800 South: 1,733,849 sq. ft.
- 1100 South: 1,857,804 sq. ft.
- 650 South Hybrid: 2,143,189 sq. ft.
- 800 South Hybrid: 2,021,396 sq. ft.

The 1100 South alignment was eliminated because there is a possibility of up to six residential relocations (total takes) required with this alignment. The 800 South alignment could have up to three residential relocations. The results of this analysis are summarized in Table 4. A more detailed evaluation of the ROW can be seen in Appendix C.

Right of Way	650 South	800 South	1100 South	650 South Hybrid	800 South Hybrid
Severed Takes (sq. ft.)	●	●	●	●	●
Total Takes	●	◐	○	●	●
Total Acquisition Area (sq. ft.)	●	●	●	●	●

Table 4. Right of Way

Vehicle Mobility

Each alternative was programmed into the travel demand model to determine the approximate vehicle demand under future 2050 conditions. Alternatives with higher future volume projections were deemed to better meet the travel demand in the future. Each alternative was also evaluated for connectivity to local roadways and spacing from other regional connections.

Travel times for freight, emergency vehicles, and general traffic were evaluated between key origins and destinations. Additionally, potential connections to future transit stations and transit lines were considered. The results of this analysis are summarized in Table 5.

Vehicle Mobility	650 South	800 South	1100 South	650 South Hybrid	800 South Hybrid
Traffic volumes	●	●	○	●	●
Travel Times (freight, emergency, general)	●	●	◐	●	●
Access to Connectivity	◐	●	◐	●	●
Transit / UTA station	◐	●	●	●	●

Table 5. Vehicle Mobility

A few key results from the vehicle mobility analysis are summarized here:

- **TRAFFIC VOLUMES:** The 1100 South alternative was shown to carry approximately half the traffic volume in 2050 compared to the other alternatives. This shows that this alignment does not serve the overall needs of the region, and traffic is redirected to other routes, causing additional congestion. Therefore, this alternative was eliminated from further consideration.
- **TRAVEL TIMES:** The 1100 South alternative showed the lowest improvement in travel times for the region. All alternatives except 1100 South showed a greater than 20% reduction in travel times in 2050.
- **ACCESS & CONNECTIVITY:** The 650 South alternative would not provide any access to surrounding parcels east of the railroad tracks. The 1100 South alternative would not provide a connection to the 5250 West roadway, instead requiring a bridge.
 - o The 650 South alternative would likely make it more difficult to have an express bus transit station in the area by restricting access and gaining elevation immediately at the 1700 West intersection.

Daily traffic volumes for alignment alternatives are provided below. Traffic volumes for all 650 South

Detailed travel times for the 5 alternatives are provided below. Like with daily traffic volumes, 650 South and 800 South provide similar travel time savings over the No Build condition. 1100 South provides slightly improved freight travel times over the other two alignments, but significantly higher travel times between potential residential developments and existing commercial areas within Payson.

While emergency response travel times aren't reduced due to the location of the fire station, police station, and Mountain View Hospital on 100 North, reliability would be improved drastically due to the proposed alignment not having any at-grade rail crossings.

Travel Times in minutes	No Build	650 South & 650 South Hybrid	800 South & 800 South Hybrid	1100 South
Emergency response	7	7	7	7
Freight	11	10	10	9
Residential Development	9	4	3	6

Table 6. Travel Times in minutes

Non-Motorized

Each alternative was evaluated to determine how non-motorized transportation would be accommodated. Each alternative was assumed to include a sidewalk on one side with a 10' paved trail on the other side, as well as bike lanes. Connections to existing and planned future active transportation routes were evaluated, as well as required crossings, safety, and opportunities for grade separated connections. The results of this analysis are summarized in Table 7.

Non-motorized	650 South	800 South	1100 South	650 South Hybrid	800 South Hybrid
Bike and pedestrian connectivity	●	●	◐	●	●
Alignment with planned trails	●	●	●	●	●

Table 7. Non-motorized

All alternatives provide opportunity for the planned trails to be developed, as well as sidewalks and a paved trail adjacent to 800 South. The 650 South, 650 South Hybrid, and 800 South Hybrid alternatives would all likely require one at-grade crossing. The 1100 South alternative would require two at grade crossings of the new regional connection. The 800 South alternative would allow the trail crossing to be grade separated with the proposed bridges. The 650 South, 650 South Hybrid, and 800 South Hybrid alternatives could also accommodate a grade separated trail crossing by diverting the planned trail a little to the east to take advantage of the proposed bridge structure over the railroad tracks.

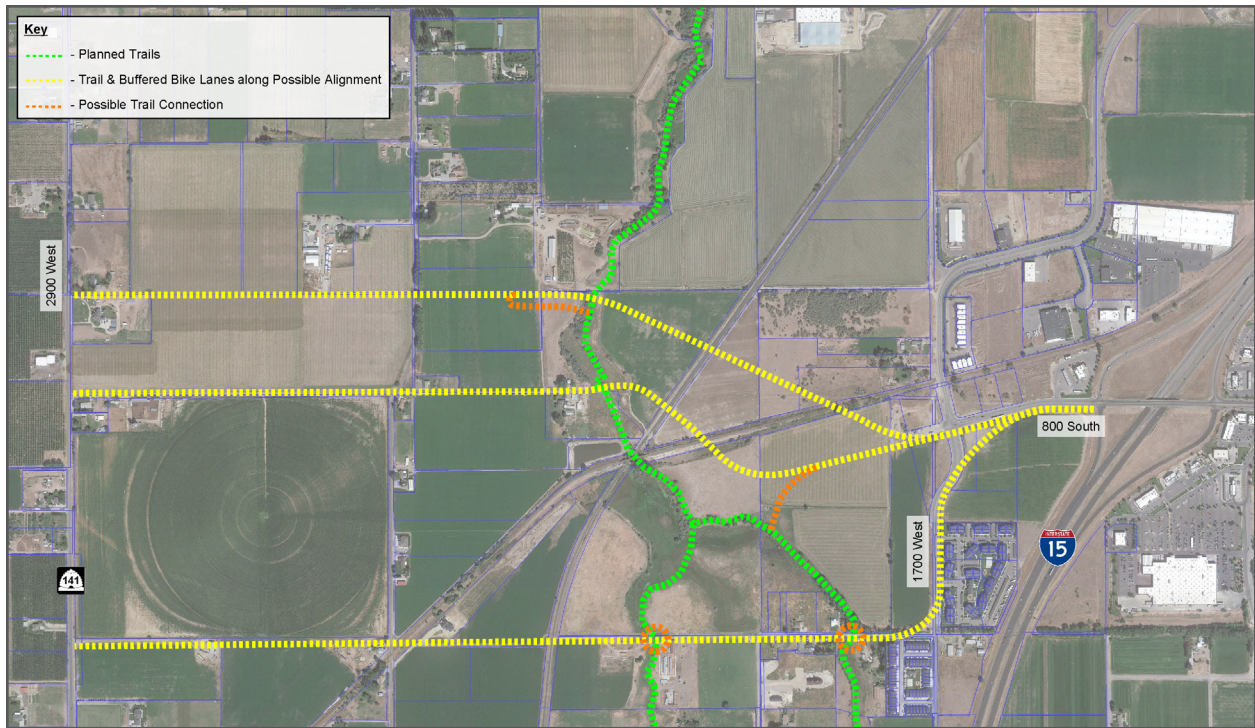


Figure 21. Active Transportation

Roadway & Bridge Design

Each alternative was evaluated to ensure that it could be designed and constructed within Payson City and UDOT design criteria. This included evaluating slopes, sight distances, superelevation, intersection and turn lane requirements, taper lengths, railroad requirements, etc. A bridge design analysis was also completed for each alternative at the proposed rail crossings. The results of this analysis are summarized in Table 8.

Roadway and Bridge Design	650 South	800 South	1100 South	650 South Hybrid	800 South Hybrid
Height	🟡	🟡	🟢	🟡	🟡
Span	🟢	🟢	🟡	🟢	🟢
Ability for Access	🔴	🟢	🟢	🟢	🟢
Interchange Separation	🟡	🟢	🟡	🟢	🟢
Stopping Sight Distance	🟡	🟢	🟡	🟢	🟢
Signal Operation	🟡	🟢	🟡	🟢	🟢
Meets UDOT Standards	🔴	🟢	🟡	🟢	🟢
Meets railroad standards	🟢	🟢	🟢	🟢	🟢

Table 8. Roadway and Bridge Design

A few key results from the Roadway and Bridge Design are summarized here:

- **Height:** Structures for all alternatives meet the minimum rail clearance required. The abutments for the 650 South, 800 South, 650 South Hybrid, and 800 South Hybrid alternatives require additional height to tie into terrain beyond the railroad right-of-way that is much lower than the existing rail elevation at the point of crossing.
- **Span:** All alternatives bridge spans of 160 – 190 feet, however the 1100 South alternative requires a third bridge span to cross the 2450 West (5250 West county designation) roadway.
- **Ability for Access:** All alternatives provide good ability for access along the corridor except the 650 South alignment. The 650 South alternative begins elevating through the 1700 West intersection, removing any ability for access to 800 South from the Red Bridge development.
- **Interchange Separation:** The 650 South alternative requires elevating and reconstruction of the 1700 West intersection to the south and also introduces a tighter horizontal curve between the interchange and the 1700 West intersection. The 1100 South alternative requires shifting and reconstructing the 1700 West intersection closer to the interchange and introduces a tighter horizontal curve between the interchange and the 1700 West intersection.
- **Stopping Sight Distance:** The stopping sight distance on the west approach to 1700 West occurs on a 5% grade (476 ft) whereas the other alternatives occur on 2% or less with greater sight distance. The 1100 South alternative introduces a sight distance obstruction along 2450 West for drivers looking for oncoming trains. This would require the addition of lights and railroad crossing arms at this location.
- **The 650 South and 1100 South alternatives would likely require protected only left-turn phasing for east- and westbound left-turn movements due to the curvature and slope of approach legs and limited sight distance.**
- **UDOT Standards:** The 650 South alternative would require design deviations as a result of the superelevated roadway through the 1700 West intersection and intersection approach transitions. 1100 South may also require design deviations based on the horizontal radii to 1700 West and residential ingress/egress to the southern 1700 West approach.
- **Railroad Standards:** All alternatives are anticipated to meet railroad standards.

Eliminated Alternatives

The impact screening eliminated the following alternatives:

- 650 South
- 800 South
- 1100 South

650 SOUTH ALTERNATIVE

The 650 South Alternative was eliminated in the impact screening because it did not meet the design roadway and bridge criteria. This alternative begins the curve north to go over the

railroad immediately after the 1700 West intersection to reduce the property and wetland impacts in the Red Bridge development area. However, by beginning the curve north immediately after the intersection it causes several design issues. Some of these include:

- Limited sight distance at the 1700 West / 800 South intersection due to the immediate horizontal and vertical curve
- Superelevation through the 1700 West / 800 South intersection
- Greater than 8% slopes on 800 South to get over the railroad tracks

Therefore, this alternative was eliminated from further consideration.

800 SOUTH ALTERNATIVE

The 800 South Alternative was eliminated in the impact screening because of the significant potential environmental impacts. The 800 South alternative crosses over the railroad tracks and ties into the existing 790 South roadway. However, this alternative brings it through some significant wetlands immediately west of the east end of 790 South. Several of the other alternatives cross the wetlands further north where there is an existing crossing. The wetlands are much narrower adjacent to the existing crossing. Therefore, the 800 South alternative was eliminated from further consideration due to potential environmental impacts.

1100 SOUTH ALTERNATIVE

The 1100 South Alternative was eliminated in the impact screening because it rated unacceptably in three categories:

- Potential Environmental Impact
- Right of Way
- Vehicle Mobility

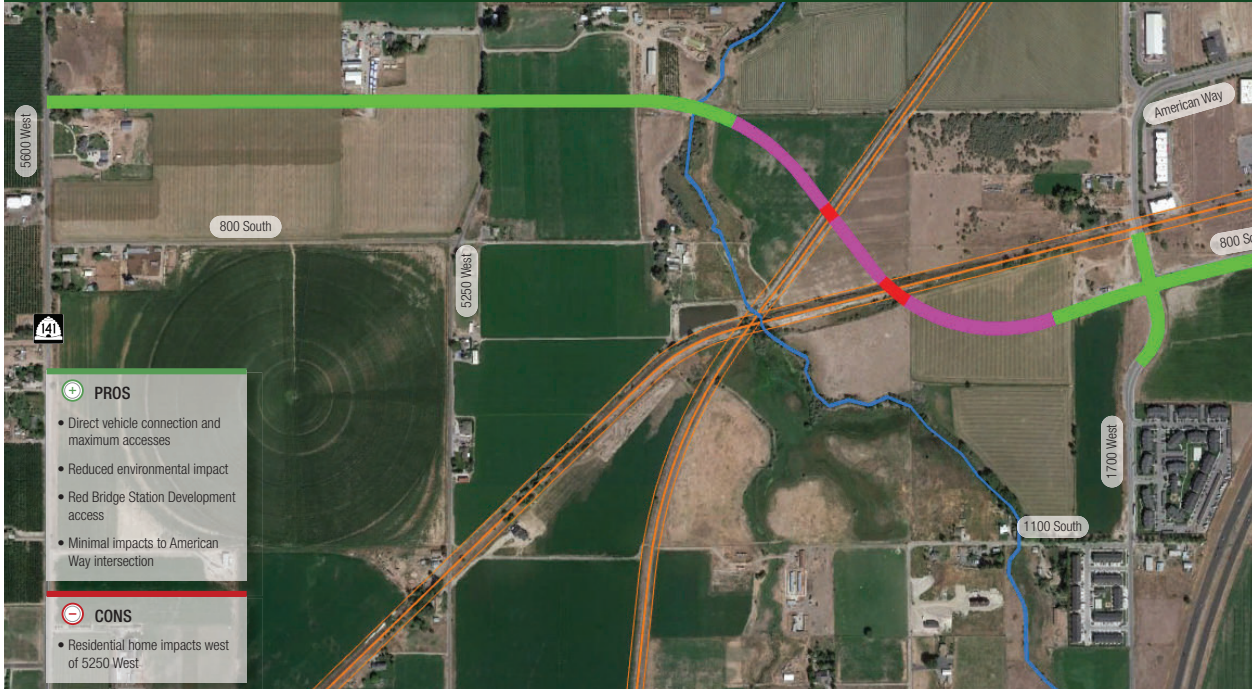
The 1100 South alternative swings the 800 South extension to the south and crosses the railroad tracks along the 1100 South corridor. This alternative has significant potential wetland impacts along the north edge of the 1100 South corridor. In addition, the right of way analysis showed that this alternative had the most expected full takes. The right-of-way analysis also indicated that this alternative would require the relocation and reconstruction of new Payson City water infrastructure on the northwest corner of the 1100 South / 1700 West intersection. The vehicle mobility analysis showed that this alignment is projected to serve the lowest future traffic volumes. In addition, this alternative does not provide connectivity to the 2450 West. Instead, the bridge over the Tintic Industrial rail road would need to be extended over the 2450 West roadway as well. Therefore, this alternative was eliminated from further consideration due to these potential impacts.

FINAL SCREENING

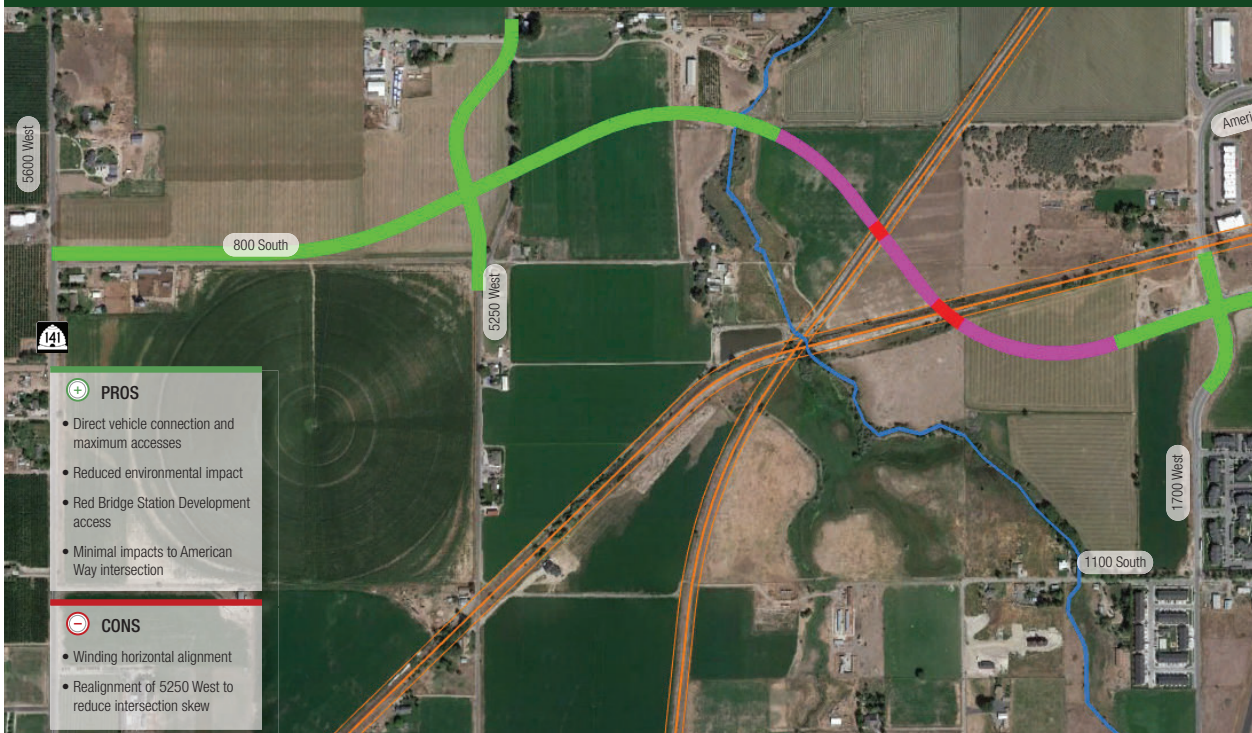
The final screening process was completed on the remaining alternatives. The remaining alternatives that were evaluated during the final screening process were:

- 650 South Hybrid
- 800 South Hybrid

650 SOUTH HYBRID | Payson 800 South Study



800 SOUTH HYBRID | Payson 800 South Study



This screening process included three criteria:

- Public Feedback
- Agency Feedback
- Bridge Constructability Review

The final screening process included reviewing public feedback from stakeholders at the one-on-one meetings, public open house, written comments, and other feedback. Agency feedback included considerations from MAG, Payson City, UDOT, UTA, and Utah County. Finally, a detailed bridge constructability review was completed that included a 30 percent design, cost estimate, and constructability evaluation. The remaining alternatives include the 650 South Hybrid and the 800 South Hybrid. These alternatives are the same on the eastern half of the alignment. On the western half, the 850 South Hybrid continues west straight along the 650 South alignment. The 800 South Hybrid alternative curves to the south to tie into the 800 South alignment (along the existing 790 South roadway). The three different criteria in the final screening process are discussed below:

Public Feedback

Public feedback on the 650 South Hybrid and 800 South Hybrid alternatives was mixed. Most property owners at the public open house were happy with the alignment being pushed to the north. However, there were several property owners that were strongly against the 650 South Hybrid alternative because of the impacts to the two homes near the tie in to 2900 West (SR-141). There were also several property owners that were strongly against the 800 South Hybrid alignment because of the significant curve in the alignment to swing it down to the 790 South. This would require greater property purchases, make the property through that area more difficult to develop, and would require roadway realignment to 2450 West to properly align the new 800 South / 2450 West intersection. Due to the overall general acceptance by the public for both alternatives, and a smaller relatively equal opposition to both alternatives, they were both graded equally in regards to public feedback.



Agency Feedback

All the agencies involved in the 800 South study evaluated the final alternatives to identify considerations or impacts. MAG and UDOT both indicated that they would prefer the 650 South Hybrid alternative. MAG noted that the 650 South Hybrid better met the regional demand by serving a higher volume of future traffic. UDOT noted that 800 South could become a UDOT roadway in the future and that the straight roadway along the 650 South corridor would better fit their system, maintenance, and roadway connectivity. Payson City indicated that they preferred the 650 South Hybrid alternative because the 800 South Hybrid alternative has greater property impacts and would make it difficult to develop the area through the large curve near 2450 West. It would also necessitate a realignment of the 2450 West roadway and intersection improvements. Therefore, the 650 South Hybrid alternative was given an acceptable rating and the 800 South Hybrid alternative was given a moderate rating based on agency feedback.

Bridge Constructability Review

Both final alternatives cross the railroad tracks at the same location and same angle. Therefore, the bridge constructability review is identical for both alternatives. This review is summarized as follows:

The final alternatives include a roadway layout that uses two bridge structures to span over the existing UTA or UP railroad tracks that currently divide the west side of Payson from I-15. The bridge structures' locations do not interfere with any existing structures or roadways. The layout and geometry of two bridge structure recommended are presented in the traffic concept plans and are described in the next sections. Standard UDOT cast in place (CIP) parapets, approach slabs, and sleeper slabs were used in laying out both structures. Fences were also added to the parapets over the railroad right of way (ROW) as per typical railroad requirements.

The southern structure (800 South Over UTA) is a single span bridge that spans 122'-0" over UTA tracks with a 16.79° skew. The roadway profile over this structure is straight and the deck's out to out width is 107'-0" with a roadway width of 104'-2". The structure was laid out with piling, CIP abutments, prestressed concrete girders (UBT66), and a T-wall retaining system retaining the abutment fill. The assumed 6'-9" structure depth included a 9" thick deck, 6" deep haunch, and 5'-6" UBT66 girder. The cross section included (11) UBT66 girders at 10'-0" on center.

The northern structure (800 South Over UP railroad) is a single span bridge that spans 180'-0" over UP railroad tracks. The roadway profile is on a curve at this location so there is a different skew angle at each support. The deck width was widened to ensure the roadway width is maintained through the curve without having to construct a curved structure. The deck's out to out width is 121'-0" with a roadway width of 118'-2". The structure was laid out with piling, CIP abutments, composite steel girders, and a T-wall retaining system retaining the abutment fill. The assumed 7'-9" structure depth included a 9" thick deck, 6" deep haunch, and 6'-6" composite steel girders. The cross section included (12) composite steel girders at 10'-4" on center.

Design Considerations

Items assumed in laying out the structures and items that should verified and optimized in design included the following:

Southern Structure (800 South Over UTA)

- The skew angle was based on the west UTA ROW direction to minimize the skew – verify skew with the final layout and ROW to optimize the structure's geometry.
- The structure's cross section (deck thickness, haunch, girder spacing, number of girders, etc.) should be optimized in design. The deck type (CIP, partial depth precast panels, and full depth precast panels) should be evaluated to manage the risks of construction near the tracks.
- All structural component sizes and quantities were based on common details and geometry for estimating and layout purposes, the strength and design of all components should be designed and optimized in the design.

- The UTA track's centerline was estimated – verify track location and required offsets to optimize the structure's geometry.
- Verify UTA's requirements (future tracks, future track raise, offsets, etc.)
- UPRR's edge of access road and MSE retaining wall clearances per UPRR publication "Guidelines for railroad grade separation projects" were used – verify UTA's offset requirements. The 50'-0" MSE offset requirements controlled the abutment locations – The T-wall system may not be considered an MSE wall, and the span length should be optimized with the next controlling offset or ROW.
- The UTA top of track elevation was assumed from the provided profile – verify top of track elevation and minimum vertical clearance per UTA's requirements.
- UTA flagging and observation costs were assumed similar to common UP railroad flagging and observation costs – verify UTA requirements and costs.
- The geotechnical engineer will need to evaluate settlement and limit settlement at the abutments and consider lightweight fill to ensure permanent vertical clearances are met.
- No utility or drainage requirements were considered in the layout or cost estimations – verify requirements in design.

Northern Structure (800 South Over UP railroad)

- The skew angle was based on the east UP railroad ROW direction to minimize the skew – verify skew with the final layout and ROW to optimize the structure's geometry.
- The deck width was based on maintaining the roadway width through the horizontal curve of the roadway profile, roadway striping will be curved over the structure.
- The structure's cross section (deck thickness, haunch, girder spacing, number of girders, etc.) should be optimized in design. The deck type (CIP, partial depth precast panels, and full depth precast panels) should be evaluated to manage the risks of construction near the tracks.
- All structural component sizes and quantities were based on common details and geometry for estimating and layout purposes, the strength and design of all components should be designed and optimized in the design.
- The UP railroad track's centerline was estimated – verify track location and required offsets to optimize the structure's geometry.
- Verify UP railroad's requirements (future tracks, future track raise, offsets, etc.)
- UP railroad's edge of access road and MSE retaining wall clearances per UP railroad publication "Guidelines for railroad grade separation projects" were used. The 50'-0" MSE offset requirements controlled the north abutment location – The T-wall system may not be considered an MSE wall, and the span length should be optimized with the next controlling offset or ROW.
- The UP railroad's top of track elevation was assumed from the provided profile – verify top of track elevation and minimum vertical clearance per UP railroad's requirements.
- The geotechnical engineer will need to evaluate settlement and limit settlement at

the abutments and consider lightweight fill to ensure permanent vertical clearances are met.

- No utility or drainage requirements were considered in the layout or cost estimations – verify requirements in design.

A concept design and cost estimate for the bridge structures was completed and is included in Appendix C. In summary, the bridge location and design was found to be reasonable and constructable. Therefore, both final alternatives were given an acceptable rating for bridge constructability. Figure 22 shows the final preferred alternative.

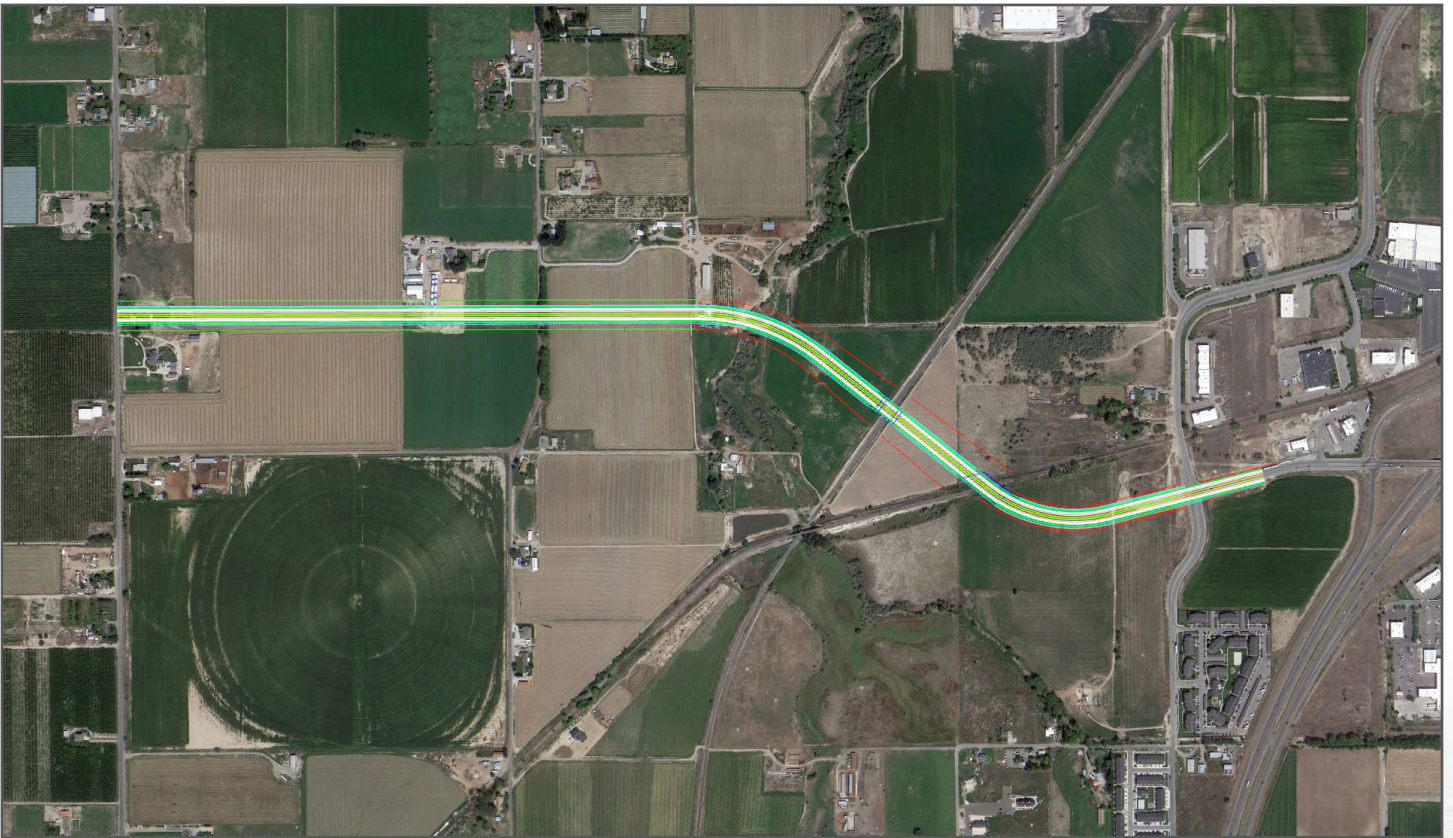


Figure 22. Preferred Alternative



PREFERRED ALTERNATIVE

650 SOUTH HYBRID ALTERNATIVE

Based on the three screening phases, the 650 South Hybrid alternative scored the best. This alternative met all of the initial screening criteria, scored acceptable in all categories in the impact screening, as well as acceptable ratings for all of the final screening criteria. Therefore, this alternative was pushed forward as the preferred alternative. This alternative was also refined to further reduce impacts, improve mobility, and ensure that this alternative will work well for the community into the future.

REFINEMENT OF THE PREFERRED ALTERNATIVE

The preferred alternative was reviewed with the steering committee and key stakeholders. Through this process, it was determined that if the first curve of the alignment was pushed slightly east, it would reduce wetland impacts and property impacts for the Red Bridge development. Therefore, this adjustment was evaluated to ensure that it still met all of the criteria discussed in this report. This refinement better meets the needs of the community.

A concept rendering of the preferred alternative is shown in Figure 23.



Figure 23. Conceptual Rendering of Preferred Alternative

The Red Bridge development team also approached the 800 South project team about the possibility of using MSE retaining walls instead of embankments for the 800 South roadway. Embankments were the initial assumption in the analysis because they are cheaper, but more impactful. The project team worked closely with the Red Bridge development team to evaluate right-of-way impacts, cost

comparisons of embankments versus MSE retaining walls, and development impacts. These were presented to the steering committee. The steering committee agreed that it made sense to plan for MSE retaining walls through the Red Bridge development. Therefore, the preferred alternative assumes MSE retaining walls south of the railroad tracks, and embankments to the north.

A copy of the concept horizontal and vertical alignment is included in Appendix D.

ENVIRONMENTAL REVIEW

Following presentation and discussion of the alternatives with the Red Bridge development team, modifications to the 650 South hybrid alternative were made to reduce impacts to planned development. The alignment of the first curve was shifted to the east, and retaining walls were added to the preliminary design between 1700 West and the first railroad crossing to reduce land use impacts that would be caused by large embankments. Another adjustment was specification of how the road centerline would meet with the existing 800 South centerline. The proposed north edge-of-pavement was modified to match the existing 800 South north edge-of-pavement east of 1700 West. Although the existing right-of-way east of 1700 West is narrower (approximately 82 feet) than the proposed 120-foot-wide corridor, aligning the north edge of pavement best fit the existing infrastructure. Future corridor widening could be accomplished by widening to the undeveloped parcels on the south side of 800 South (between 1700 West and I-15). These modifications of the 650 South hybrid alternative were identified as the preferred alternative resulting from the study. The preferred alternative is illustrated in Figure 24.



Figure 24. 650 South Preferred Alternative

In terms of resource indicators evaluated, the adjustments for the preferred alternative differ from the previously evaluated 650 South hybrid alignment by:

- Reducing the potential wetland impact estimate from 0.81 acre to 0.56 acre
- Reducing estimated prime farmland impact from 45.3 acres to 33.6 acres

As previously described, a formal wetland delineation would be needed to confirm the quantity and type of wetland impacts, including possible consideration of the jurisdictional status of specific wetlands. If jurisdictional wetland impacts could be reduced to less than 0.5 acre, the project could potentially be permitted under a nationwide wetland permit

rather than an individual permit, which could facilitate the permitting process and reduce additional need to consider alternatives with less impact to wetlands. Reduction of wetland impacts would also reduce the type and quantity of compensatory wetland mitigation required and project costs.

It would also be necessary to determine if any wetlands or other undeveloped lands have characteristics of being suitable habitat for Ute ladies'-tresses and, if so, to consult with the USFWS.

Site-specific archaeological and architectural surveys would be needed to formally determine potentially eligible historic resources if the project required compliance with the National Historic Preservation Act.

If federally funded, the project would also require compliance with the Farmland Protection Policy Act and, depending on the quantity and quality of impacts, may require consideration of alternatives or modifications to reduce farmland impacts. Consideration of the alternatives alignments in the current planning study could potentially be adapted to demonstrate compliance with the Farmland Protection Policy Act.

RIGHT-OF-WAY

The preferred alignment adjusted the necessary right-of-way needed by refining the curve and allowing the embankment east of the railroad tracks to be constructed as a wall instead. This reduces the overall amount of right-of-way required by approximately 987,066 square feet. The total amount of right-of-way required would be approximately 1,156,123 square feet, with an additional 241,700 square feet of temporary construction easements. The concept right-of-way files have been provided to Payson City, MAG, and UDOT. It is recommended that all of these entities work to preserve the right-of-way needed for the 800 South connection through development agreements, corridor preservations funds, and other acquisition methods.

PEDESTRIAN AND BICYCLE FACILITIES



Figure 25. Preferred Alternative Active Transportation

As shown in Figure 25, the preferred alternative provides two opportunities for grade separated crossings at both bridge structures. Possible connections to the planned trail network are also shown. A small diversion on the north side of the railroad tracks may be necessary to take advantage of the grade separated crossing opportunity. The preferred alternative will include a paved trail and bike lanes along the corridor, as well as opportunities for tie in connections to the planned trail network adjacent to Spring Creek. The exact connections should be determined with additional study and cooperation with the land owners.

COST ESTIMATE

A cost estimate was completed for the refined 650 South Hybrid alternative. The detailed cost estimate was based on the concept design and included the following assumptions:

- Used the cross section identified in this study for the roadway and bridge crossing.
- Assumed MSE walls on the east railroad bridge approach (through Red Bridge development). Concept includes 15 foot maintenance areas for the walls.
- Assumed a full reconstruction of 800 South from 1700 West to the I-15 southbound ramps to provide a 5-lane cross section. The north edge of pavement was held constant.
- The estimate does not specifically account for sewer, water, or fiber.
- The typical section for the 800 South roadway was assumed to be 6 inches of HMA on 6 inches of untreated base course (UTBC), on 12 inches of granular borrow.
- The estimate includes a signal reconstruction at 1700 West. The estimate does not include future signals at 2900 West (SR-141) or 2400 West.
- Unit pricing is the average unit price from Masterworks over the last 12 months.
- Storm drain assumes a 42 inch trunk line with 18 inch laterals and associated structures every 500 feet beginning 300 feet from the railroad structures.
- The estimate does not include a box culvert for north/south connectivity between the Red Bridge development.
- The estimate does not include lighting.

The overall estimate for the roadway, including bridge structures is estimated at \$79,843,000 in 2021 dollars. By 2030, the estimated cost is anticipated to increase to \$112,174,000. The detailed cost estimate is included in Appendix E.

\$	2021:	\$79,843,000
	2030:	\$112,174,000

FUTURE ENVIRONMENTAL DOCUMENT

The next step in the process would be to complete an environmental document. An environmental document would re-evaluate in more detail potential alternatives, impacts, and traffic mobility of the proposed 800 South project. The scope and cost of an environmental study varies widely based on the timing, changes due to growth, and public opinion. If an environmental document is completed in the near future, it is anticipated that it could be done as a state environmental assessment. However, if this study doesn't take place for 15+ years, then future growth, public opinion, etc. could change and complicate the process.

It may also be federally funded and require a full environmental impact statement (EIS). At this point in time, it is included in MAG's long range plan as a Phase 3 (2041 – 2050) project. Due to the uncertainty in the timing, scope, and potential changes over time, the environmental document could range in cost from \$500,000 to over 3 million dollars. It is recommended that Payson City, MAG, and UDOT work together to identify a plan to fund an environmental study and potential construction in the future.

800 SOUTH TIMING

With the completion of the feasibility study, the next step in the process would be to complete an environmental document. This would be followed by the roadway design, and then construction of the roadway. However, the 800 South project has not been funded yet for any of these steps. The need for this project is growing, as shown by the ongoing development of the Red Bridge project, as well as several other nearby developments that are currently in the planning and review stages. As this growth continues, pressure will continue to build and the need for a better connection to I-15 and Payson City from the west will grow. Depending on decisions made by the state legislature, MAG, UDOT, and Payson City, funding for this project could be as soon as the next few years or may not come for many years in the future. The exact timing of this project is uncertain due to the current lack of funding. Therefore, it is recommended that Payson City, MAG, and UDOT work together to preserve right-of-way, acquire funding, and work together to make this project a reality. Figure 26 shows the next steps in the process, as well as the uncertainty of the timing.

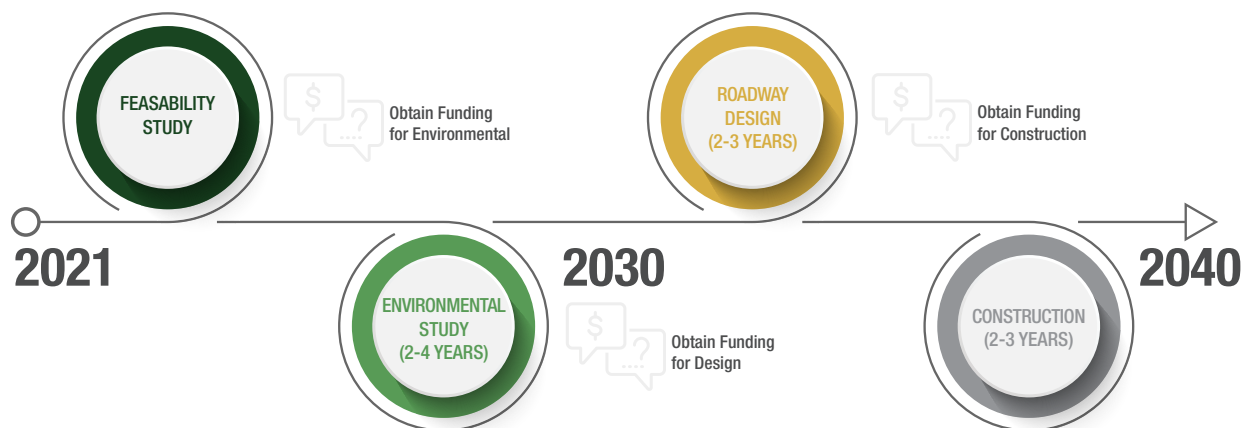


Figure 26. Funding Timeline

APPENDICES

Appendix A: Public Outreach Summary

Appendix B: Potential Environmental Impact Assessment

Appendix C: Right-of-Way Evaluation Summary

Appendix D: Preferred Alternative Horizontal and Vertical Alignment

Appendix E: Cost Estimate

APPENDIX A

Public Outreach Summary



Payson 800 South Corridor Study
Public Open House
August 19, 2021

<i>Meeting Type</i>	Public open house was conducted for impacted and affected stakeholders of Payson 800 South Corridor Study. Comment forms were available for public comments.
<i>When/Where</i>	The Public Open House was held Thursday, August 19, 2021, at Payson City Center located at 439 W. Utah Ave. in Payson, UT 84651
<i>Advertisement</i>	Advertisement for the open house included the following: <ul style="list-style-type: none"> • Public notice appearing in the Payson City Newsletter for July and August 2021 • Email invite to approximately 50 recipients
<i>Attendance</i>	Approximately 45 attendees at the open house
<i>Information Available at the Meeting</i>	Information available at the Public Open House included a large-scale printout (22' x 7') with project information (goals/objectives, timeline, screened alternatives, final alternatives, cross-sections, and a conceptual rendering. The format of the meeting was open house style. Attendees were encouraged to ask questions and make comments in writing. Jeremy Searle, Brent Schvaneveldt, Marty Asay, Andrea Moser, Dave Asay, Dave Tuckett, Jill Spencer, and Travis Jockumsen were present to answer questions.
<i>Comments</i>	Comments were shared by 12 attendees using the provided comment form.



To ensure as many of the critically impacted stakeholders as possible were contacted regarding the open house, WCG PI staff provided the following services:

- Updated project website (www.payson800southstudy.com).
- Production and emailing of invites (approximately 50) – delivered via Constant Contact on August 17, 2021, at 2:14 p.m. MDT
- Public notice in Payson City Newsletter – July and August 2021 Editions
- Phone call invites to emailed invitees who did not open emails.

- Provided a forum for public comment at the open house via comment cards.
- Communication directly with city officials and residents.

To facilitate clear communication a large-scale banner was produced featuring all concepts developed for this study. The room at Payson City Center (Banquet Hall) features a sign-in table, large display, comment forms, and a refreshment table. Study representatives were “floating” the room to answer questions.

Those in attendance had a range of questions and comments, most were general in nature. Attendees seemed happy with the options further north. They’d have more comments if it was further south. Other concerns included property value, access, development plans, traffic, and active and mass transportation. See attached comments.

YOU'RE INVITED!

Public Open House
800 South Corridor Study

*Mark your calendar for the Public Open House for
the 800 South Corridor Study*

Thursday, August 19

Payson City Center

(Enter from south doors)

439 W Utah Ave.

Payson, UT 84651

5:30 – 7:30 PM

HAVE QUESTIONS ABOUT THIS STUDY?

The open house features members of the project team and Payson City representatives who will be available to show you conceptual plans, schedule, and answer your questions.

We look forward to this opportunity to serve our community by providing improved transportation and increased safety for years to come!

Attendees

First	Last
Mike	Tanner
Jandy	Finch
Veronica	Sucher
Mark	Soffe
Diane	Soffe
Don	Helvey
Taresa	Hiatt
Jason	Eddie
Tyler	Moore
Mike	Horan
Diane	Jensen
Ryan	Frisby
David	Engle
Elaine	Engle
Ryan	Wiltshire
Corey	Jones
Amanda	Frutos
Eric	Reed
Lindsay	Reed
Doug	Finch
E	Malm
Brian	Hulet
Blair	Warner
Mirt	Michaelis
Susan	Fuller
Brent	Schvaneveldt
Jeremy	Searle
Marty	Asay
Dave	Asay
Andrea	Moser
Jill	Spencer
Travis	Jockumsen
Dave	Tuckett

First	Last	Comment
Ryan & Maggie	Wiltshire	We are against the 650 S. Hybrid. It is too close to Utah Ave. I feel 10900 S. is more in the middle of the area. I object also solely because it goes through my property!
Eric & Lindsay	Reed	Please send us the road information on email or of any changes. Roads directly over existing houses that don't want to see should not happen or roads should go around them. Huge compensation to the houses directly involved or built on, should be done way over market value in my opinion.
Jandy	Finch	Please send any info. on road development or any changes.
Robert	Finch	Please send any info. on road development or any changes.
Veronica	Suchur	I am very excited to see the growth of Traxx and improvements to our roads. However, I'm very concerned about the planning and how it affects existing homeowners. I lived near Vineyard before it became a nightmare to live. The influx of 2-4,000 cars on our side streets need to be addressed. I would like to see the infrastructure match. Parking for school, shops, high-density living. Being such a small rural community is a great place for families and long-term residents. If we become transient-based, Payson will lose its charm and life-time residents who are invested here. I'm very concerned that our roads are already heavily trafficked with North Santaquin, West Mountain, and West Payson already using 800 South to get to the freeway. Really need another exit for I-15 between 800 South Payson and Santaquin exit. Already without the influx of new builds, I hope that Spring Creek will be maintained and preserved as well. Growth and change can be great for communities they are hard but please don't make it a nightmare for us. I just left that 2 years ago and hoped I moved south enough to avoid this kind of overdevelopment.
Taresa	Hiatt	It sucks!! There needs to be a road that goes down around the red bridge area. It is too close to Utah Ave. It is too close to my house. I may put an agriculture protection on the ground forever!!!
Brian	Hulet	Like 1100 S 650 S.
Diane	Soffe	Please send to my email the copies of the road drawings you are considering.
Amanda	Frutos	Best plan of the proposed: 650 S. hybrid. I think the plan allows plenty of traffic flow to the West Mountain area. The least amount of road construction the better. However if the West Mountain area begins to foresee subdivision growth having the additional road as shown on the reject plan 1100 S. would be best to allow additional flow. My overall suggestion would be to build an overpass large and long enough to utilize the existing 790 S. and cross over the railroad crossing. (See drawing)
Jason	Eddie	I like the plan of adding a bicycle lane on 800 S. bridge. Utah Ave. west of I-15 near where the tracks used to be would be a great place to widen the road on because of people riding bicycles or walking to work. With plans to widen roads I hope we can do this without taking over homes and businesses.
Corey	Jones	I am against the 650 South hybrid. It is too close to Utah Ave. Please use the more feasible 10900 South as it matches up with 800 South.

Payson 800 South Corridor Study
Open House – Thursday, August 19, 2021
Comment Form



Please complete this comment form and leave it in the designated basket. You can also mail the completed form using the address on the reverse side of this form.

Name: Eric & Lindsay Reed

What are your comments regarding the Payson 800 South Corridor Study?

Please send us the road information on email
or of any changes.

thanks,

Ginsey & Eric Reed

Roads directly over existing houses
that don't want to sell should not
happen or roads should go around
them. Huge compensation to the houses
directly involved or built on, should
be done way over market value in
my opinion.

Payson 800 South Corridor Study
Open House – Thursday, August 19, 2021
Comment Form



Please complete this comment form and leave it in the designated basket. You can also mail the completed form using the address on the reverse side of this form.

Name: Ryan & Maggie Wiltshire 8-19-2021

What are your comments regarding the Payson 800 South Corridor Study?

We are against the 1650 South Hybrid. It is too close to Utah Ave. I feel 10900 South is more in the middle of the area. I object also solely because it goes through my property!

Maggie Wiltshire
Ryan Wiltshire

Please send all new and updated information to us via email as soon as updated
Thank you.

Payson 800 South Corridor Study
Open House – Thursday, August 19, 2021
Comment Form



Please complete this comment form and leave it in the designated basket. You can also mail the completed form using the address on the reverse side of this form.

Name: Jandy Finch

What are your comments regarding the Payson 800 South Corridor Study?

Please send any info on road development or any changes.

~~XXXXXXXXXX~~

Payson 800 South Corridor Study
Open House – Thursday, August 19, 2021
Comment Form



Please complete this comment form and leave it in the designated basket. You can also mail the completed form using the address on the reverse side of this form.

Name: Veronica Sucher

What are your comments regarding the Payson 800 South Corridor Study?

I am very excited to see the growth of town and improvements to our roads. However I'm very concerned about the planning and how it affects existing homeowners. I lived near vineyard before it became a nightmare to live. The influx of 2,000-4,000 cars on our side streets need to be addressed. I would like to see the infrastructure match. Parking for school, shops, high-density living. Being such a small rural community is a great place for families and long term residents. If we become so transient based, Payson will lose its charm and life-time residents who are invested here. I'm very concerned that our roads are already heavily trafficed with North Santiquin, West Mountain and West Payson already using 800 South to get to the freeway. Really need another exit for I-15 between 800 South Payson and Santiquin exit already without all the influx of new birds. I hope that Spring creek will be maintained and preserved as well. Growth and change can be great for communities they are hard but please don't make it nightmare for us. I just left that 2 years ago and hoped I moved south enough to avoid this kind of over development.

Payson 800 South Corridor Study
Open House – Thursday, August 19, 2021
Comment Form



Please complete this comment form and leave it in the designated basket. You can also mail the completed form using the address on the reverse side of this form.

Name: Teresa Hiatt

What are your comments regarding the Payson 800 South Corridor Study?

It sucks!!

There needs to be a road that goes down around the red bridge area.

It is too close to Utah Avenue.

It is too close to my house.

I may put an agriculture protection on the ground. Forever!!!

Payson 800 South Corridor Study
Open House – Thursday, August 19, 2021
Comment Form



Please complete this comment form and leave it in the designated basket. You can also mail the completed form using the address on the reverse side of this form.

Name: Brian Hulet

What are your comments regarding the Payson 800 South Corridor Study?

Like 1100 S.
650 S.

Payson 800 South Corridor Study
Open House – Thursday, August 19, 2021
Comment Form



Please complete this comment form and leave it in the designated basket. You can also mail the completed form using the address on the reverse side of this form.

Name: Diane Soffe

What are your comments regarding the Payson 800 South Corridor Study?

Please send to my email the copies of the road
drawings you are considering

Payson 800 South Corridor Study
Open House – Thursday, August 19, 2021
Comment Form



Please complete this comment form and leave it in the designated basket. You can also mail the completed form using the address on the reverse side of this form.

Name: Amanda Frutos

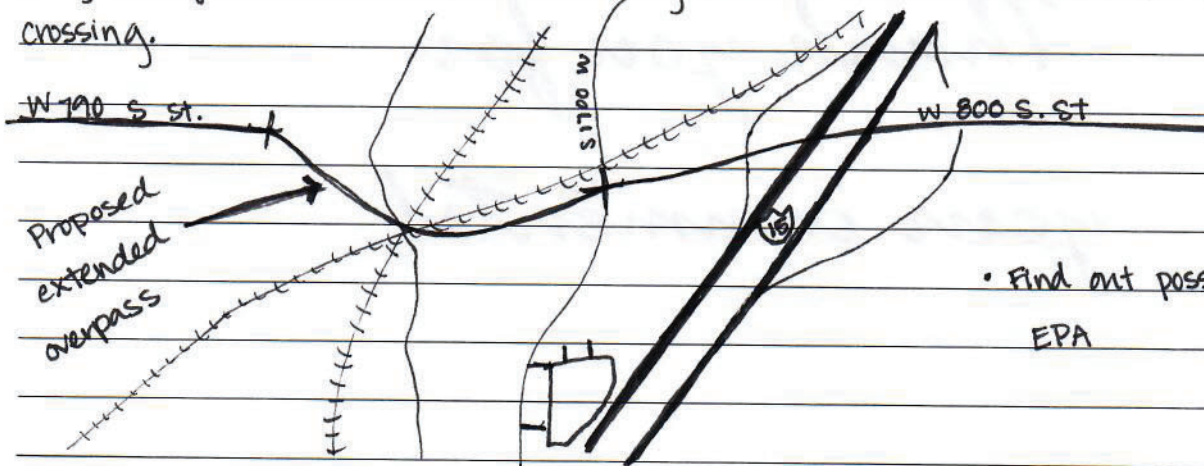
* Please email all slides from open house

What are your comments regarding the Payson 800 South Corridor Study?

Best plan of the proposed: 1050 S. Hybrid

I think the plan allows plenty of traffic flow to the west mountain area. The least amount of road ~~construction~~ construction the better. However if the west mountain area begins to foresee subdivision growth having the additional road as shown on the reject plan 1100 South would be best to allow additional flow.

My one overall suggestion would be to build an overpass large and long enough to utilize the existing ~~770~~ ⁷⁷⁰ S. and cross over ~~the~~ ^{the} railroad crossing.



• Find out possibility with EPA

Payson 800 South Corridor Study
Open House – Thursday, August 19, 2021
Comment Form



Please complete this comment form and leave it in the designated basket. You can also mail the completed form using the address on the reverse side of this form.

Name: Jason Eddie

What are your comments regarding the Payson 800 South Corridor Study?

I Like the plan of adding a Bicycle lane on 800 South
Bridge. Utah Avenue west of I-15 near where the
tracks used to be would be a great place to widen the
Road on Because of people Riding Bicycles or walking to work.

with Plans to widen Roads I hope we can do this without
taking over homes and businesses.

Payson 800 South Corridor Study
Open House – Thursday, August 19, 2021
Comment Form



Please complete this comment form and leave it in the designated basket. You can also mail the completed form using the address on the reverse side of this form.

Name: Corey D. Jones

What are your comments regarding the Payson 800 South Corridor Study?

I am against the 650 south hybrid
it is too close to Utah Ave.

Please use the more feasible 10900 south as
it matches up with 800 south.



Date: Monday, November 1st, 2021

To: Chad Eccles, AICP

From: Jeremy Searle, P.E., PTOE

Subject: Payson 800 South Study – Property Owner One-on-One Meetings

Introduction

The purpose of this memorandum is to provide a summary of the one-on-one meetings that were held for the Payson 800 South Study with the property owners in the study area. These meetings were held between March 4, and October 19, 2021. These meetings were to help the property owners understand the purpose of the Payson 800 South study, and to receive input and feedback on potential alignments, constraints, property details, future plans, etc. All meetings were attended by Jeremy Searle, Payson 800 South Study Project Manager. Meetings were also attended by at least one of the following: Nestor Gallo, Payson Development Engineer, Jill Spencer, Payson City Planner, Chis Van Aken, Payson Planner, and Travis Jockumsen, Payson Public Works Director.

One-on-One Property Owner Meetings

Douglas Finch, Mark & Diane Soffe

Thursday March 4, 2021

Payson City Office

10:00 – 11:30 a.m.

The following items were discussed at this meeting:

- The Finch's own the property on the northwest side of Red Bridge.
- Mark & Diane Soffe own the property directly north of Red Bridge adjacent to the canal detention pond.
 - They sold that detention pond to the Highline Canal in the past.
- The Finch's have an agreement providing Joe Spencer the option to purchase the triangle piece of land between the two railroad tracks in the future.
 - They are currently working with him to complete a utility agreement for a sewer line that would run north adjacent to the Union Pacific Railroad tracks.
- 5600 West (SR-141) is a narrow busy road, and will likely need improvements in the future.
- There are wetlands by Spring Creek that need to be considered.
- Finch's currently are having difficulties getting good access to their property. Doug would like to build a home on their land but they are trying to figure out the access to the property.
- If the extension of 800 South were to go along the northern boundary of their property, it would provide better access to their land.
- They all have a desire to keep things the way they are now, but understand that growth is coming quickly to the area. They understand the need to plan for the future.
- Their property is irrigated from water on West Mountain that is gravity fed to their property.
- They would prefer the area be developed with low density, such as 5-acre ranchettes. They would like to develop their land with 5-acre ranchettes for their family members in the future.
- Different potential alignments of 800 South were discussed. They noted that there are three main alternatives: pushing the alignment to the north, having the alignment along

the northern edge of their property, or pushing the alignment to the south around the wetlands along the southern edge of the Wright property.

- They expressed a desire to be kept informed of future progress on the study.

Casey Carson

Tuesday March 9, 2021

1:00 – 1:30 p.m.

Phone Call

The following items were discussed at this meeting:

- Casey owns the two-acre parcel west of the Finch properties, and is related to the Finch's.
- He expressed a strong desire to keep things the same. He doesn't want to see a lot of change in the area.
- Casey also would not want the new 800 South extension through or adjacent to his land. He likes living in a quiet place away from other people.
- Casey understands that growth is coming quickly to the area and that there is a need to plan for the future.
- When the area is developed, he would like to see it developed with low density residential on bigger lots.
- Different alignments were discussed. He was familiar with a proposed alignment just north of the Finch property. We also discussed having a south alignment and a north alignment.
- Casey mentioned that the Union Pacific railroad tracks are often used to park trains, and that a bridge would be required so that the trains don't block a potential roadway.
- He noted the wetlands, and that they would need to be avoided.
- Casey called Jeremy back on 3/11/2021 and said that he would support a road on the very northern alignment through the middle of Guy Larsen's and Hiatt's property. He felt we could use the existing railroad crossing on American Way and then we'd only have to have a bridge over one of the tracks.

Eric Reed

Tuesday March 9, 2021

4:15 – 4:45 p.m.

Payson City Office

The following items were discussed at this meeting:

- Eric owns the long skinny property in between the two railroads adjacent to the Tintic line.
- He does not feel like an extension of 800 South is necessary.
- He would prefer that the project doesn't happen.
- If the roadway extension does happen, he would prefer the alignment be further north to avoid his property.
- Eric does not want a big 5-lane road in front of his house, or a large bridge over the railroad tracks by his house.
- The Union Pacific railroad line is used as many as 3 – 5 times per day, mostly carrying coal.
- He feels that most people in the area would prefer that things not change.

Mike & Kathy Hiatt

Wednesday March 10, 2021

Payson City Office

10:00 – 11:00 a.m.

The following items were discussed at this meeting:

- Mike & Kathy own the property in between the railroad tracks south of the proposed Red Bridge development.
- They recently sold their dairy (located east of their property and south of the Red Bridge development) to the White Horse developers.
- The Hiatt's would prefer that the road not follow a south alignment near their property. They moved to this area for the rural feel and do not want to see a lot of high density / new roads near their home.
- The Hiatt's understand that growth is coming quickly to Payson and that the road will be needed in the future. They would prefer that the road follow a more northern alignment near Red Bridge.
- The wetlands and railroad were discussed.
- They would like to keep their land rural, with their family potentially building on large lots in the future.

Lynn & Taresa Hiatt

Wednesday March 10, 2021

Payson City Office

11:00 a.m. – 12:00 p.m.

The following items were discussed at this meeting:

- Lynn and Teresa own the large parcel between 5600 West (SR-141) and 5200 West north of 10900 South.
- They understand that growth is coming and how important it is to plan for the future. They want to identify the best route for the 800 South extension and understand the constraints that the railroad and wetlands bring.
- The Hiatt's talked about the dynamic between longtime residents and developers that are coming in and buying up property. They know growth is coming and that utilities, transportation, taxes, and impacts need to be considered.
- They felt that it would make the most sense for the road to cross the railroad tracks just north of Red Bridge and to follow along the southern boundary of their property.
- They Hiatt's noted that they may sell their land someday, and that good access to the west side is needed in this area.

Joe Spencer – Payson South Meadows

Wednesday March 24, 2021

Online via GoogleMeets

1:00 p.m. – 2:00 p.m.

The following items were discussed at this meeting:

- Payson South Meadows owns the parcel that is planned as the Red Bridge development.
- Joe talked about the planned Red Bridge development, and their desire to create a walkable community with on-street parking, slower traffic speeds, and pedestrian friendly

environment. A higher speed regional roadway would not be conducive to this type of environment.

- Joe would prefer swinging the 800 South connection as far north as possible, to better preserve the walkable nature of his development.
- He suggested that we use the existing at-grade railroad crossing on American Way.
 - We talked about the challenges of this since it is likely that expanding the existing at-grade crossing for a regional roadway would not be feasible.
- Joe felt that an alignment to the north would provide better business access and opportunities, since this would access areas that are close to Payson's business park area.
- We talked about the possibility of a southern alignment. He was against this option because it would significantly impact his planned development which they have been working on for a couple years. He requested that we study this early and eliminate it as an alternative.
- We discussed other possible alignments, and how those might impact the Red Bridge development.

White Horse Development Team

Wednesday March 24, 2021

Payson City Office

2:00 p.m. – 3:00 p.m.

The following items were discussed at this meeting:

- The White Horse Development team has been buying several properties in the area including the Hiatt Dairy, Guy Larsen's property, as well as others further north and south of the study area. In addition, they have talked with other property owners in the study area about the possibility of selling in the future.
- They have a rough build plan that would include 2,500 new homes over the next 6 years on ~500 acres.
- White Horse Development suggested a northern alignment using the existing rail crossing on American Way.
 - We talked about the challenges of this since it is likely that expanding the existing at-grade crossing for a regional roadway would not be feasible.
- Since expanding the existing at-grade crossing is likely not feasible, they suggested having multiple smaller routes. For example, they were in favor of having a smaller local connection on the north. This could begin at a new roundabout where the large bend on American Way is located just north of 800 South. From there, it would extend due west with a smaller 2-lane bridge over the Union Pacific rail line. They indicated that they would be willing to participate in funding the smaller, local connection. Then a separate 3-lane connection could be constructed along a southern alignment. They felt that providing multiple smaller connections could provide the same benefit as one large connection.
- They understand the need for a connection and are looking forward to getting answers on the recommended alternative so that they can finalize plans.

Michael Tanner

Wednesday March 24, 2021

Payson City Office

3:00 p.m. – 3:45 p.m.

The following items were discussed at this meeting:

- Michael Tanner grew up here and has lived in the same house in the study area for 55 years.
- Michael generally wishes that things wouldn't change out here but understands that growth is coming and that "you can't stop progress". With that in mind, he indicated that he would prefer to sell and move somewhere else.
- Since Michael is open to selling in the future, he is alright with an alignment that goes along his property or even that impacts his house.
- He felt like a southern alignment (near his home) would make the most sense since it would generally avoid the wetlands and have a clear way to cross the railroad tracks.
- Michael didn't have a lot of suggestions for alignment ideas, but felt that it would be a real challenge to get a new roadway through this area.

Guy Larson

Wednesday March 24, 2021

Phone Call w/ Marty Asay (WCG)

1:00 p.m. – 1:30 p.m.

Marty reached out to Guy Larsen to set up a meeting to discuss the 800 South project. Guy said that he didn't want to meet because he was already under contract with White Horse Development to buy his land and didn't care what the City did in that area because he was moving away.

Lloyd Stanton

Wednesday March 30, 2021

Phone Call w/ Marty Asay (WCG)

2:00 p.m. – 2:15 p.m.

Marty reached out to Lloyd Stanton to set up a meeting to discuss the 800 South project. Lloyd said that he didn't want to meet because he didn't think the project impacted him. Although Marty explained that there is possibility that it could impact him, he insisted on not wanting to meet with us.

Susan Fuller, Doug Finch, Diane Soffe

Wednesday April 14, 2021

Payson City Office

4:00 – 5:15 p.m.

The following items were discussed at this meeting:

- Susan Fuller owns the 1 acre parcel on the northeast corner of 10900 South / 5200 West. Susan lives there with her daughter and is good friends with the Finch family.
- She doesn't want to see anything change and would like to live in peace in her house. She also doesn't want to live next to a busy road.
- Susan indicated that there are sight distance issues near her house to pull out on to 5200 West and she would like those fixed.

- Susan said there is a large irrigation pipe that goes down 10900 South that would need to be considered if a larger road was built there.
 - She suggested talking to Jay Schaper from the Highline canal about the pipe, as well as researching all of the canal lines.
- We discussed why the road was needed, the approximate timing of the road, how big the road might be, and some potential alignments for the road.

Bill Wright (representing Dan Wright family)

Wednesday April 21, 2021

Payson City Office

2:00 – 3:00 p.m.

The following items were discussed at this meeting:

- The Wrights own the large parcel on the west end of the study area with the pivot.
- They understand that growth is coming to the area and that a roadway connection to the 800 South interchange is needed.
- The Wrights plan to develop their property at some point in the future. Their brother-in-law works in development and will be involved.
- They would prefer to see higher densities for future land use zoning in their area.
 - We discussed how a separate study was happening at the same time that would go into more detail on utilities and land use in the Spring Creek area.
- The Wrights are ok with a roadway on either the north or south of their property. They would prefer that it did not split their property.
- We also discussed access management on the future regional connection, and that there would likely be limited access along this roadway. The Wrights understood the need for access management.
- We discussed the need for bridges over the railroad tracks on how that might impact their property.
- We discussed the approximate timing of the roadway.

Loralee Carson

Wednesday May 26, 2021

Payson City Office

2:00 – 3:00 p.m.

The following items were discussed at this meeting:

- Lori Carson owns the home on the southeast corner of 5200 West / 10900 South (across the street from Susan Fuller).
- Lori emphasized that she would like the new road to be as far away from her property as possible.
- She also mentioned that her family members (who own the property to the east and south of her adjacent to the railroad) would also like to see the road as far away as possible.
- We discussed the need for bridges over the railroad tracks on how that might impact their property.
- We discussed the approximate timing of the roadway.
- We discussed possible alignments for the roadway.

Joe Spencer – Payson South Meadows

Thursday June 3, 2021

Online via GoogleMeets

1:00 p.m. – 2:00 p.m.

This meeting was attended by Jeremy Searle and Bryce Albrecht of WCG. No Payson City representatives attended this meeting. The following items were discussed at this meeting:

- Joe expressed his concern that all of the alternatives will have negative impacts to the Red Bridge development. He is concerned that they will all change the site plan that he has worked on.
- The first phase of the Red Bridge development is the southeast corner, which means the 1100 South alignment would go right through the middle of their first phase. They are very against this alternative for that reason.
- The 800 South alignment would provide much less access than they were hoping because it has to start rising up to get over the railroad tracks. Having fewer access points to 800 South and the large earth slopes required make this undesirable for the development team as well.
- The 650 South alignment provides no direct access to the Red Bridge development, has large earth slopes to accommodate the bridge structure, and leaves a remnant parcel that is difficult to develop.
- For the reasons outlined above, their development team does not like any of the alignments.
- The development team also outlined a few additional concerns including:
 - The Red Bridge development team has recently completed a roadway dedication for utilities. They are concerned that the roadway dedication will not be feasible with any of the alignments.
 - The Red Bridge development team is pursuing a bond to construct the infrastructure needed to support the proposed development. They anticipate that the bond could be completed by the end of the month. If the 800 South alignment changes their development plans, they are worried that the bond will be impacted.
 - They are also concerned about the potential UTA improvements in the future, including a FrontRunner station and maintenance station. Jeremy explained that these were unlikely at this site based on the feedback we've received from UTA, but they indicated that they had heard differently.

Joe Spencer – Payson South Meadows

Thursday June 3, 2021

Online via GoogleMeets

1:00 p.m. – 2:00 p.m.

The following items were discussed at this meeting:

- Jeremy explained the background of the 800 South project, as well as the constraints. He explained that we are still evaluating alternatives and are meeting with stakeholders and property owners to get feedback.
- MTECH's biggest concern is having good access to I-15. They weren't concerned about whether that access came from 1700 West, or directly to 800 South. As long as they had enough space (approximately 13 acres) and were able to have good access they were ok with any of the alignments.
- We discussed the alignments that we are studying and how access would work with each one. We also discussed transit and what UTA's future plans are for the area.

- MTECH indicated that they would likely have between 1,100 – 1,500 students per day at the site. These would be spread throughout the day with groups at 7:30 am, 11:30am, and 3:00 pm (subject to change). They also indicated that there would be approximately 50 – 60 faculty and staff that would be at the site each day.
- MTECH indicated that most of their students and faculty would be commuters. They estimated that 5 percent or less would relocate to be adjacent to the school.

White Horse Development – Payson South Meadows

Wednesday September 15, 2021

11:00 a.m. – 12:00 p.m.

White Horse Development Office – Lehi, UT

The following items were discussed at this meeting:

- White Horse Development staff asked Jeremy to review the different alternatives and why each one was either moved forward for additional study, or eliminated. They asked questions about the different alternatives, what the impacts were, and how that would impact traffic.
- Jeremy went through each of the alternatives and their associated impacts. He outlined the two alternatives that were identified for the final screening.

Payson South Meadows Team – Joe Spencer, Jerry Robinson, Sheila Michaelis, Ken Berg

Tuesday October 19, 2021

1:00 p.m. – 2:00 p.m.

Payson City Office

The following items were discussed at this meeting:

- Jeremy reviewed the different alignment alternatives for the 800 South study.
- The alignments that made it through all three screening stages have some impacts to the Red Bridge development. Several modifications were discussed.
- Jeremy explained the analysis that was completed for the alternatives, and why significant modifications are not feasible based on other impacts that occur.
- The impacts of a modified alignment proposed by the Red Bridge team were discussed. It was determined that this alignment was not feasible due to significant increases to the slope, reduced sight distance, and intersection impacts.
- It was agreed to evaluate whether the first curve in the final alternatives could be moved further east slightly to reduce impacts to the development. This was later found to be a feasible solution.
- A proposed roundabout and new roadway through the Red Bridge development were also discussed. It was determined that a traffic impact study (TIS) should be completed to ensure that all intersections would operate well with the new development and roadway layout.

APPENDIX B

Potential Environmental Impact Assessment





BIO-WEST, Inc.

1063 West 1400 North
Logan, Utah
84321-2291
Ph: 435.752.4202
Fx: 435.752.0507
www.bio-west.com

MEMORANDUM

TO: Jeremy Searle, Transportation and Planning Group Manager, Wall Consultant Group
FROM: Andrea Moser, Senior Environmental Planner, BIO-WEST, Inc.
DATE: December 16, 2021
SUBJECT: GIS Analyses and Potential Impact Assessments for the Preliminary Alignments of the Payson 800 South Study, Mountainland Association of Governments and Payson City, Utah
ATTACHMENT: GIS Data Source List

Introduction

BIO-WEST assisted Wall Consulting Group (WCG) in evaluating three conceptual alignments for the Payson 800 South Study. The alignments are illustrated in Figure 1.

Subsequently, two hybrid alignments of the 650 South and 800 South concepts were also evaluated and, following a public meeting and discussions with stakeholders, a final preferred alignment was evaluated.

Alignments were evaluated for potential impacts to the resources listed in Table 1. Data obtained for each resource is discussed in the sections of this memo that follow. An attachment provides details regarding GIS data sources obtained from available resources or originally created for this analysis.

Water Resources

The water resources evaluated were wetlands, streams, canals, and water right diversions.

Wetlands

Two sources of GIS data for wetlands were used to compare estimated impact footprints of conceptual alternatives. Data from a previously completed wetland delineation for Payson City were provided by the city's consultant, Western-Enviro, Inc. To estimate wetlands in other areas, polygons of potential wetlands were developed using the National Wetland Inventory and available aerial imagery. The footprint of the 800 South conceptual alignment had the most estimated wetland impact, 2.46 acres, and the 650 South the least, 0.70 acre.

The 1100 South design had an estimated 1.17-acre wetland impact. Each of the hybrid designs impact the same wetlands with an estimated 0.81-acre impact. All of these exceed 0.5-acre of impact and would likely require an Individual Permit from the U.S. Army Corps of Engineers and compensatory mitigation.

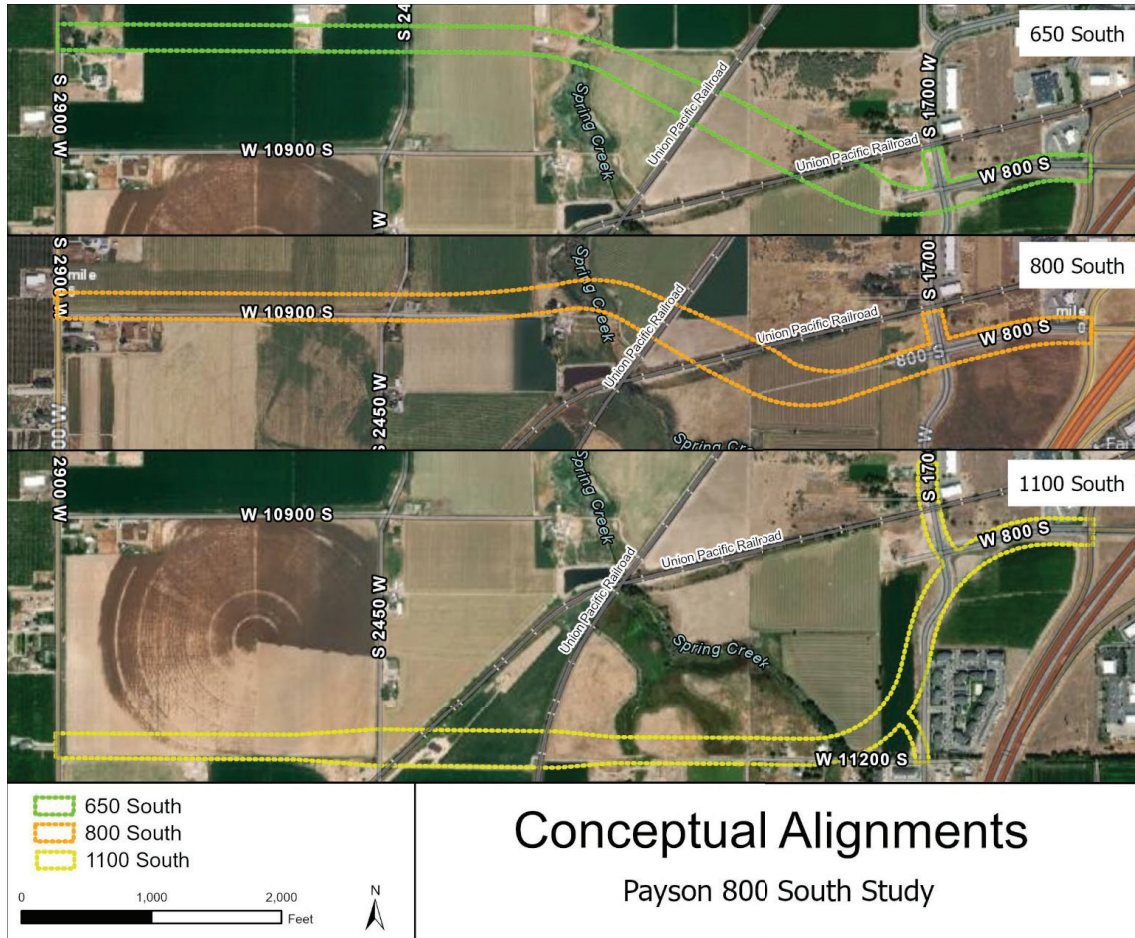


Figure 1. Payson 800 South Study Conceptual Alignments

Wetlands would need to be formally delineated in the potential impact area as the funded project moves closer to design and implementation. Additional wetland avoidance and minimization may be possible in the design process. Also, the extent of jurisdictional wetlands can change over time with land development and changes in surface and groundwater hydrology.

Streams and Canals

Data for streams and canals were obtained from the Utah Geospatial Resource Center (UGRC) and were supplemented with interpretation from aerial imagery and a map screenshot provided by the Strawberry Highline Canal Company. Streams and canals near the 650 South and 800 South hybrid alignments are illustrated in Figure 2.

Table 1. Resources Evaluated

Resource Indicators	Conceptual Alternatives			Hybrid Designs		Preferred Alignment
	650 South	800 South	1100 South	650 South Hybrid	800 South Hybrid	
Water Resources						
Delineated wetland, acres	---	0.37	1.05	0.27	0.27	--
Potential wetland, acres	0.70	2.09	0.12	0.54	0.54	0.56
Total wetland, acres	0.70	2.46	1.17	0.81	0.81	0.56
Potential streams, acres	0.12	0.16	0.08	0.15	0.15	0.15
New stream crossings, number	0	1	0	0	0	0
Existing stream crossings, number	1	0	3	1	1	1
Canals/pipelines intersected, linear feet	1,238.8	4,298.2	4,454.1	1,238.8	3,085.2	1,238.8
Water right diversions intersected, number	1	3	4	1	2	1
Protected and Special Status Species						
June sucker (fish)	Unlikely to occur					
Ute ladies'-tresses (flower)	Potential to occur in any of the intersected wetlands					
Northern leopard frog	Potential to occur in any of the intersected wetlands					
Social and Historic						
Potential residential relocations, number	1	3	6	1	1	1
Potential noise-impacted receptors, number	1	1	18	0	4	0
Potential historic structures, number	2	1	4	3	0	3
Land Use and Agriculture						
Partial acquisition parcels, number	34	32	41	32	39	32
Barns/outbuildings within 15 ft., number	3	5	5	4	4	4
Prime farmland, acres	44.3	42.3	47.3	45.3	48.3	33.6
Agricultural Protection Areas	None identified					
Entitled Properties	None identified					

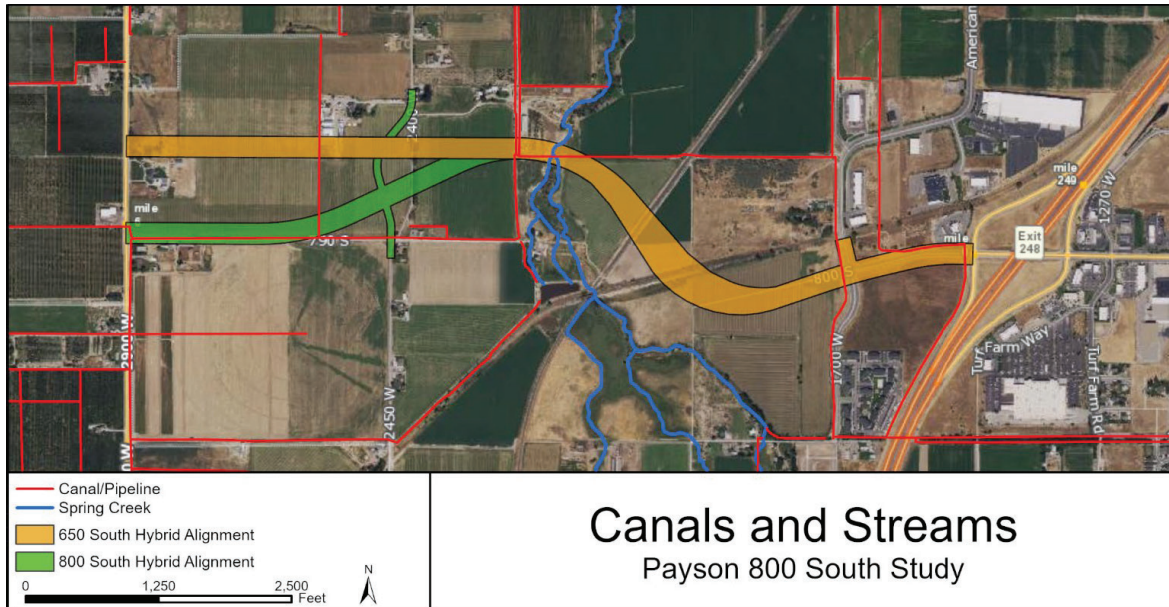


Figure 2. Canals and Streams with the 650 South and 800 South Hybrid Alignments

One stream, Spring Creek, occurs in the study area. Spring Creek flows northward toward Utah Lake. There are several branches of the stream in the study area. Existing bridges and culverts overlapping streams within the project area were identified using aerial photography. Conceptual alternatives were compared with previously identified streams and existing bridges or culverts as well as aerial photography. Any new stream crossings were identified. Crossings that already have a culvert or bridge, even if the alignment footprint would exceed the current crossing, were not counted as new stream crossings.

Canals in the area belong to the Strawberry Highline Canal Company and deliver water to the company's water users. In some locations, canals have been piped underground. Some of the canals and pipelines are located on rights-of-way obtained by the U.S. Bureau of Reclamation (BOR). Perpendicular crossings are not likely to be problematic, and parallel intersections could likely be resolved by either shifting the alignment of the roadway during the design process or by proposing replacement of the canals or pipelines segment that would be intersected. The 650 South and 800 South hybrid alignments both intersect pipelines near where these alignments cross Spring Creek, shown in the figure below. These are 30-inch buried pipelines and the BOR maintains a 30-foot-wide easement over them.

Intersecting the BOR pipeline easements requires a use-authorization under federal regulation 43 CFR 429. The process is described on BOR's website (<https://www.usbr.gov/lands/index.html>). A permit application (Standard Form 299) would need to be submitted to BOR's Provo Area Office during the design/environmental phases of project development. Design details would be reviewed by BOR engineers to ensure that the road would not interfere with the pipeline operation or maintenance. Under the regulation, use-authorizations for easements and rights-of-way for periods in excess of 25 years are also subject to approval from water-user organizations; in this case, the Strawberry Highline Canal Company is the water-user organization. At a minimum, the appropriate water-user organizations must be notified of all use-authorizations prior to their issuance to avoid potential



conflicts between the requested use-authorization and the water user-organizations' need to operate and maintain the facilities for which they have contractual responsibility (43 CFR 429.6(b)).

Water Right Diversions

Data for water-rights diversions were obtained from Utah Division of Water Rights through UGRC. The 1100 South conceptual alignment directly intersects the most diversions (four) and the 650 South the least (one). Diversions could be avoided with design modifications, or they could be relocated if not avoidable. This would be determined through the property acquisition process.

Protected and Special Status Species

Databases available from the U.S. Fish and Wildlife Service (USFWS) and the Utah Natural Heritage Program (UNHP) were searched for potential occurrences of federally listed threatened and endangered species and state-listed sensitive species. The USFWS lists two potentially occurring federally listed threatened species, the June sucker fish species (*Chasmistes liorus*) and the Ute ladies'-tresses orchid flower (*Spiranthes diluvialis*).

June sucker is endemic to Utah Lake and portions of the Provo River are designated as critical habitat for spawning. Spring Creek is hydrologically connected to Utah Lake but is unlikely to provide spawning habitat. It is therefore unlikely that June sucker would occur here, and it is unlikely that any of the conceptual alternatives would adversely affect June sucker.

Suitable habitat for Ute ladies'-tresses can include riparian areas, and wetlands situated on low floodplain shelves and oxbow wetlands along medium-to-large streams and rivers of moderate gradient, wet meadows, and irrigated pastures. Wetlands and irrigated pastures in the study area could be suitable habitat for Ute ladies'-tresses.

The UNHP lists four state-sensitive species with known occurrences within 2 miles of the study area. These are Columbia spotted frog (*Rana luteiventris*), Utah milksnake (*Lampropeltis triangulum*), northern leopard frog (*Lithobates pipiens*), and southern leatherside chub (*Lepidomeda aliciae*). Of these, only the northern leopard frog is likely to occur based on habitats in the study area and known distributions of the species.

Because the two potentially occurring species in the study area, Ute ladies'-tresses and Northern leopard frog, are both wetland/riparian species, conceptual alternatives with the fewest effects to wetlands and streams are also the least likely to adversely affect these species. As previously noted, of the three conceptual alternatives, the 800 South alternative has the most potential wetland impacts and the 650 South alternative the least. However, the 1100 South alternative has the most existing stream crossings and has 1.17 acres of potential wetland impacts. The two hybrid alignments have the same wetland and stream impacts. A closer examination of habitat suitability and the potential need to complete a No Effect Determination or Biological Assessment can be determined as the funded project moves closer to design and implementation.

Social and Historic Resources

Social and historic indicators evaluated were potential residential relocations, noise-impacted residences, and historic-period structures. Residential structures within 15 feet of a conceptual alignment footprint were identified as potential relocations. Residential properties within 100 feet were identified as potentially noise-impacted. Structures (residential and other) within 15 feet that were 45 years old or older, based on county parcel records, were considered potentially historically eligible.



In general, because the study area is mostly undeveloped at the present time, there are few potential social and historic impacts overall. The 1100 South conceptual alternative has the greatest social and historic impact potential with 6 potential relocations, 18 potential noise-impacted residences (including multi-unit properties), and 4 potential historic structures. The 650 South conceptual alternative has the least, with one potential relocation, one potential noise-impact, and two potential historic structures. Although the 800 South conceptual alternative has only one potential historic structure and one potential noise-impacted residence, it has three potential residential relocations.

The hybrid designs for 650 South and 800 South each have one potential residential relocation, but differ in terms of potential noise-impacted (none for the 650 South hybrid alignment but four for the 800 South hybrid alignment) and potential historic structures (three for 650 South and none for 800 South). Again, overall the study area appears to have low potential for social and historic impacts; however, development of the area may change before a project moves closer to design and implementation, and additional issues may be identified during the design phase. Also, potential archaeological resources have not been identified. Formal archaeological and architectural reconnaissance surveys would be needed.

Land Use and Agriculture

Potential land use and agricultural impacts were assessed using parcel data to examine the number of properties intersected (partial acquisitions), using aerial photography to identify barns and other outbuildings that would be potentially removed, and obtaining soils data to identify acres of prime farmlands that would be potentially converted. GIS datasets were also queried for potential county-designated Agricultural Protection Areas and land entitlements (such as conservation easements). None of these were identified in the study area.

Based on existing conditions, all of the conceptual alignments would have similar effects to land use and agriculture. The 1100 South conceptual alignment would have the largest number of partial property acquisitions, 41. The 650 South conceptual alignment intersects 34 parcels that would be partial acquisitions and the 800 South conceptual alignment intersects 32 parcels that would be partial acquisitions. These numbers do not include the residential relocations (full acquisitions) described for social impacts.

Few barns or outbuildings were identified within 15 feet of the conceptual alignments (which would indicate probable need to remove the structure). The 1100 South and 800 South conceptual alignments each have five barns/outbuildings within 15 feet. The 650 South conceptual alignment has three barns or outbuildings.

All of the conceptual alignments have more than 40 acres of prime farmlands intersected, with the 1100 South conceptual alignment having the most, 47.3 acres.

The hybrid alignments of 650 South and 800 South are similar in terms of land use and agricultural impacts. The 800 South hybrid alignment has 7 more partial acquisition properties (39) compared to the 650 South alignment (32). Each of the hybrid alignments has four barns or outbuildings within 15 feet. The 800 South hybrid alignment has 48.3 acres of prime farmlands and the 650 South hybrid alignment has 45.3 acres of prime farmlands.

Preferred Alignment

Following presentation of the alignments at a public meeting, modifications to the 650 South hybrid alignment were made to reduce impacts to planned development. The alignment of the first curve was shifted to the east, and retaining walls were added to the preliminary design between 1700 West and the first railroad crossing to reduce land use impacts that would be caused by large embankments. Another adjustment was specification of how the

road centerline would meet with the existing 800 South centerline. The proposed north edge-of-pavement was modified to match the existing 800 South north edge-of-pavement east of 1700 West. Although the existing right-of-way east of 1700 West is narrower (approximately 82 feet) than the proposed 120-foot-wide corridor, aligning the north edge of pavement best fit the existing infrastructure. Future corridor widening could be accomplished by widening to the undeveloped parcels on the south side of 800 South (between 1700 West and I-15). These modifications of the 650 South hybrid alignment were identified as the preferred alignment resulting from the study. The preferred alignment is illustrated in Figure 3.

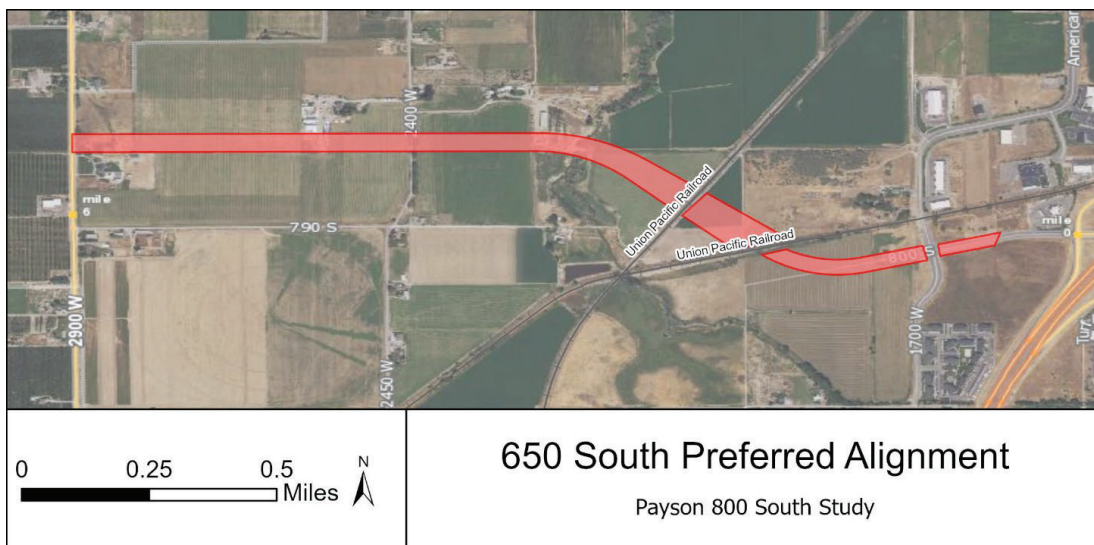


Figure 3. Preferred Alignment

In terms of resource indicators evaluated, the adjustments for the preferred alignment differ from the previously evaluated 650 South hybrid alignment by:

- Reducing the potential wetland impact estimate from 0.81 acre to 0.56 acre
- Reducing estimated prime farmland impact from 45.3 acres to 33.6 acres

As previously described, a formal wetland delineation would be needed to confirm the quantity and type of wetland impacts, including possible consideration of the jurisdictional status of specific wetlands. If jurisdictional wetland impacts could be reduced to less than 0.5 acre, the project could potentially be permitted under a nationwide wetland permit rather than an individual permit, which could facilitate the permitting process and reduce additional need to consider alternatives with less impact to wetlands. Reduction of wetland impacts would also reduce the type and quantity of compensatory wetland mitigation required and project costs.

It would also be necessary to determine if any wetlands or other undeveloped lands have characteristics of being suitable habitat for Ute ladies'-tresses and, if so, to consult with the USFWS.

Site-specific archaeological and architectural surveys would be needed to formally determine potentially eligible historic resources if the project required compliance with the National Historic Preservation Act.



BIO-WEST, Inc.

December 16, 2021

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If federally funded, the project would also require compliance with the Farmland Protection Policy Act and, depending on the quantity and quality of impacts, may require consideration of alternatives or modifications to reduce farmland impacts. Consideration of the alternatives alignments in the current planning study could potentially be adapted to demonstrate compliance with the Farmland Protection Policy Act.

ATTACHMENT
Payson 800 South Study – Resource Evaluation Memorandum, BIO-WEST, Inc.
GIS Data Sources

Indicator: Delineated Wetlands

Data Layer: Delineated Wetlands

Source: Payson City, Western-Enviro

Data Date: August 2020

Processing: Converted from Adobe Acrobat documents provided by Payson City, wetland delineation completed by Western-Enviro. Original survey performed by Bridget Atkin. The provided maps were georeferenced and wetland polygons were created from these images.

Indicator: Waters of US

Data Layer: Waters of US

Source: <https://waterdata.usgs.gov/>

Data Date: Unknown

Processing: No processing

Indicator: Potential Wetlands identified by aerial

Data Layer: Potential Wetlands identified by aerial

Source: Utah Geospatial Resource Center (UGRC) 15 cm Hexagon Color Aerial Photography

Data Date: 11/04/2019

Processing: Wetlands were digitized within the project impact polygon using current aerial imagery.

Indicator: Potential Streams identified by aerial

Data Layer: Potential Streams identified by aerial

Source: UGRC 15 cm Hexagon Color Aerial Photography

Data Date: 11/04/2019

Processing: Wetlands were digitized within the project impact polygon using current aerial imagery.

Indicator: Existing stream crossings

Data Layer: Existing roadway stream crossings, via bridge or culvert

Source: UGRC 15 cm Hexagon Color Aerial Photography

Data Date: 11/04/2019

Processing: Existing bridges and culverts overlapping streams within the project area were identified using aerial photography.

Indicator: New stream crossings

Data Layer: New roadway stream crossings

Source: UGRC 15 cm Hexagon Color Aerial Photography

Data Date: 11/04/2019

Processing: Alignment alternatives were compared with previously identified streams and existing bridges or culverts as well as aerial photography. Any new stream crossings were identified. Crossings that already have a culvert or bridge, even if the alignment footprint would exceed the current crossing, were not counted as new stream crossings.

Indicator: Strawberry Highline Canal Company Canals

Data Layer: Canals Intersected

Source: Strawberry Highline Canal Company

Data Date: 9/13/2021

Processing: Jay Staheli, Field Operations Manager of the Strawberry Highline Canal Company provided a map of company canals and pipelines in the study area. BIO-WEST georeferenced the map and digitized only those segments of canals and pipelines intersected by the conceptual alternatives to quantify linear feet intersected.

Indicator: Water Right Points of Diversion

Data Layer: UDNR.WRT.PointsOfDiversion

Source: Utah Division of Water Rights

Data Date: 9/13/2021, updated continuously on UGRC

Processing: None

Indicator: Number of structures within 15 feet

Data Layer: Number of structures within 15 feet

Source: UGRC 15 cm Hexagon Color Aerial Photography with a publication date of January 2020.

Data Date: 11/04/2019, January 2020

Processing: Structure footprints were created using aerial photography. Structure age was determined using Utah County parcel data obtained from the Utah County Recorder and UGRC. (parcels.utah.gov).

Indicator: Number of structures within 15 feet, age potential to be historic (circa 1976)

Data Layer: Number of structures within 15 feet, age potential to be historic (circa 1976)

Source: UGRC 15 cm Hexagon Color Aerial Photography

Data Date: 11/04/2019

Processing: Structure footprints were created using aerial photography. Structure age was determined using Utah County parcel data obtained from the Utah County Recorder and UGRC. (parcels.utah.gov).

Indicator: Protected and Special Status Species

Data Layer: None

Sources: U.S Fish and Wildlife Service Information for Planning and Consulting (IPAC) and Utah Natural Heritage Database.

Data Date: Databases queried 6/7/2021

Processing: None

Indicator: Potential residential relocations

Data Layer: Potential residential relocations

Source: UGRC with a publication date of January 2020. UGRC 15 cm Hexagon Color Aerial Photography

Data Date: 11/04/2019

Processing: Structure footprints were created using aerial photography. Structure age was determined using Utah County parcel data obtained from the Utah County Recorder and UGRC. (parcels.utah.gov).

Indicator: Partial acquisition parcels (footprint enters into a parcel and is not within 15 feet of a structure)

Data Layer: Partial acquisition parcels

Source: Utah Parcel Data, Utah County.

Data Date:

Processing: Structure footprints were created using aerial photography. Structure age was determined using Utah County parcel data obtained from the Utah County Recorder and UGRC. (parcels.utah.gov)

Indicator: Prime Farmland

Data Layer: Soils

Source: Natural Resources Conservation Service, Web Soil Survey

Data Date: unknown

Processing: Prime and statewide soils are derived from the NRCS SSURGO soil dataset.

Indicator: Noise potentially impacted receptors (residential within 100 feet)

Data Layer: Noise potentially impacted receptors

Source: Structures identified on UGRC 15 cm Hexagon Color Aerial Photography with a publication date of January 2020.

Data Date: January 2020

Processing: BIO-WEST used aerial imagery and Google Street View to identify residences within 100 feet of conceptual alignments, 6/1/2021.

APPENDIX C

Right-of-Way Evaluation Summary





PROJECT NUMBER:

PROJECT NAME: 650 South ROW Impacts

A - EARLY ACQ.

B - HIGH

C - MEDIUM

D - LOW

MITIGATION SCHEDULE

PARCEL NUMBER	COUNTY TAX ID NO.	PROPERTY TYPE (APPARENT USE)	OWNER'S CONTACT INFORMATION				PROPERTY LOCATION INFORMATION			RW Sheet	SQUARE FEET OF ROW TAKE	SQUARE FEET OF SEVERED TRACT	SQUARE FEET TEMP EASE	TOTAL AREA	APPROX COST
			MAILING ADDRESS	CITY	STATE	ZIP	PROPERTY ADDRESS	CITY	COUNTY						
98	Railroad A										10,696		16070		
99	Railroad B										17,746		29125		
107	29:010:0050	Residential	647 South 2900 West	Payson	UT	84651	647 South 2900 West	Payson	Utah		55,417	25,766	17,549		
108	29:010:0042 29:010:0047	Residential	10726 South 5200 West	Payson	UT	84651-9607	Approximate 700 South 2400 West	Payson	Utah		155,075		102,508		
109	29:010:0030	Residential	586 South 2400 West	Payson	UT	84651	586 South 2400 West	Payson	Utah		51,970	19,408	16,457		
110	29:010:0029	Residential	594 South 2400 West	Payson	UT	84651	594 South 2400 West	Payson	Utah		56,324	19,236	17,607		
120	29:011:0013, 29:012:0002, 29:012:0003	Residential	601 South 2400 West	Payson	UT	84651	601 South 2400 West	Payson	Utah		278,503		214,531		
121	29:011:0011	Residential	601 South 2400 West	Payson	UT	84651	601 South 2400 West	Payson	Utah				11,585		
125	51:622:0002	Residential	2170 South Alveo Drive	Washington	UT	84780	744 South 1700 West	Payson	Utah		42,905	74,500	42,151		
130	30:060:0056	Commercial	815 East Silver Shadow Drive	Murray	UT	84107	Approximate 1800 West 1130 South	Payson	Utah		44,793	23,907	51,209		
131	30:060:0012, 30:060:0010	Residential	6088 West 10000 South	Payson	UT	84651-9756	738 South 1700 West	Payson	Utah		73,431	74,517	78,981		
132	30:060:0030	Residential	439 West Utah Avenue	Payson	UT	84651-2042	Approximate 1700 West 1130 South	Payson	Utah		16,716	18,685	9,603		
135	30:060:0037, 30:060:0053	Commercial	97 Professional Way	Payson	UT	84651-1614	Approximate 1600 West 800 South	Payson	Utah		31,233		18,350		
136	30:060:0034, 30:060:0049, 30:060:0077	Commercial	97 Professional Way	Payson	UT	84651-1614	Approximate 1750 West 800 South	Payson	Utah		18,672		13,055		
138	30:060:0048	Commercial	97 Professional Way	Payson	UT	84651-1614	Approximate 1751 West 800 South	Payson	Utah		563		11,668		
139	30:060:0042	Commercial	4024 East Gail Court	Gilbert	AZ	85296	Approximate 1695 West 800 South	Payson	Utah				5,358		
140	66:519:0001 66:519:0002	Commercial	1250 West 100 North	Provo	UT	84601	1626 West 800 South, 1602 West 800 South	Payson	Utah				4,540		
141	30:060:0052	Commercial	820 North Mountain Avenue # 100	Upland	CA	91786	Approximate 1521 West 800 South	Payson	Utah		22,266	106	24,906		
142	66:519:0004	Commercial	1568 West 800 South	Payson	UT	84651	1568 West 800 South	Payson	Utah		1,197		10,065		
143	30:060:0054	Commercial	1722 Routh Street Suite 1000	Dallas	TX	75201	1522 West 800 South	Payson	Utah		919		8,539		
147	29:011:0006	Residential	PO BOX 511196	Salt Lake City	UT	84151-1196	Approximate 1900 West 200 South	Payson	Utah				2,626		
Totals											878,424	256,125	706,482	1,841,031	\$ 1,417,142



PROJECT NUMBER:

PROJECT NAME: 800 South ROW Impacts

RISK ASSESSMENT

A - EARLY ACQ.
B - HIGH
C - MEDIUM
D - LOW

MITIGATION SCHEDULE

PARCEL NUMBER	COUNTY TAX ID NO.	PROPERTY TYPE (APPARENT USE)	OWNER'S CONTACT INFORMATION				PROPERTY LOCATION INFORMATION			RW Sheet	SQUARE FEET OF ROW TAKE	SQUARE FEET OF SEVERED TRACT	SQUARE FEET PERP EASE	SQUARE FEET TEMP EASE	TOTAL AREA	APPROX COST
			MAILING ADDRESS	CITY	STATE	ZIP	PROPERTY ADDRESS	CITY	COUNTY							
98	Railroad A												16,798			
99	Railroad B												39,972			
105	29:009:0010 29:009:0023	Residential	2895 West 790 South	Payson	UT	84651	2853 West 790 South	Payson	Utah				28,660			
108	29:009:0019	Residential	10726 South 5200 West	Payson	UT	84651-9607	Approximate 758 South 2900 West	Payson	Utah		316,699	23,898	100,288			
112	29:009:0025	Residential	801 South 2450 West	Payson	UT	84651	801 South 2450 West	Payson	Utah				4,026			
117	29:012:0021	Residential	2170 South Alveo Drive	Washington	UT	84780	Approximate 2107 West 790 South	Payson	Utah		1,265		26,969			
119	29:012:0007	Residential	2418 West 790 South	Payson	UT	84651	2418 West 790 South	Payson	Utah		39,275	3,943	0			
120	29:012:0002	Residential	601 South 2400 West	Payson	UT	84651	601 South 2400 West	Payson	Utah		199,408	144,871	98,663			
124	29:012:0020	Residential	754 East 1200 North	Pleasant Grove	UT	84062-1953	Approximate 2050 West 1130 South	Payson	Utah		8,948		35,610			
125	51:622:0002	Residential	2170 South Alveo Drive	Washington	UT	84780	744 South 1700 West	Payson	Utah		55,996	81,424	65,818			
130	30:060:0056	Commercial	815 East Silver Shadow Drive	Murray	UT	84107	Approximate 1800 West 1130 South	Payson	Utah		126,885		150,593			
131	30:060:0012	Residential	6088 West 10000 South	Payson	UT	84651-9756	738 South 1700 West	Payson	Utah				1,260			
132	30:060:0030	Agriculture	439 West Utah Avenue	Payson	UT	84651-2042	Approximate 1700 West 1130 South	Payson	Utah		18,276	28,969	7,268			
135	30:060:0037, 30:060:0053	Commercial	97 Professional Way	Payson	UT	84651-1614	Approximate 1600 West 800 South	Payson	Utah		14,663		18,812			
136	30:060:0034, 30:060:0049, 30:060:0077	Commercial	97 Professional Way	Payson	UT	84651-1614	Approximate 1750 West 800 South	Payson	Utah		14,399		12,435			
138	30:060:0078 30:060:0035 30:060:0046 30:060:0048	Commercial	97 Professional Way	Payson	UT	84651-1614	Approximate 1751 West 800 South	Payson	Utah				11,767			
139	30:060:0042	Commercial	4024 East Gail Court	Gilbert	AZ	85296	Approximate 1695 West 800 South	Payson	Utah		790		12,060			
140	66:519:0001, 66:519:0002	Commercial	1250 West 100 North	Provo	UT	84601	1626 West 800 South	Payson	Utah		1,578		12,204			
141	30:060:0052	Commercial	820 North Mountain Avenue # 100	Upland	CA	91786	Approximate 1521 West 800 South	Payson	Utah		19,855		24,632			
142	66:519:0004	Commercial	1568 West 800 South	Payson	UT	84651	1568 West 800 South	Payson	Utah		1,231		11,307			
143	30:060:0054	Commercial	1722 Routh Street Suite 1000	Dallas	TX	75201	1522 West 800 South	Payson	Utah		554		8,547			
Totals											819,823	283,105	0	630,922	1,733,849	\$ 1,355,297



PROJECT NUMBER:		PROJECT NAME: 1100 South ROW Impacts						RISK ASSESSMENT			MITIGATION SCHEDULE				
								A - EARLY ACQ.							
								B - HIGH							
								C - MEDIUM							
								D - LOW							
PARCEL NUMBER	COUNTY TAX ID NO.	PROPERTY OWNER	PROPERTY TYPE (APPARENT USE)	OWNER'S CONTACT INFORMATION		PROPERTY LOCATION INFORMATION			RW Sheet	SQUARE FEET OF ROW TAKE	SQUARE FEET OF SEVERED TRACT	SQUARE FEET PERP EASE	SQUARE FEET TEMP EASE	TOTAL AREA	APPROX COST
				MAILING ADDRESS	PROPERTY ADDRESS	CITY	COUNTY								
98	Railroad A	Railroad A								9,782			13,077		
99	Railroad B	Railroad B								17,296			22,730		
102	29:022:0056 29:022:0052	Elaine Wolfe	Residential	1848 Skyline Drive	Approximate 11215 South 5600 West	Payson	Utah						6,813		
103	29:022:0033	Leah May Tanner (ET AL)	Residential	11206 South 5250 West	11206 South 5250 West	Payson	Utah						25,927		
105	29:009:0023	Dan L Wright Heber LLC	Residential	2895 West 790 South	2853 West 790 South	Payson	Utah		289,210	70,291			93,452		
113	49:701:0001	Jandy L and Robert L Finch	Residential	1025 South 2450 West	1025 South 2450 West	Payson	Utah		15,811	2,335			17,993		
114	29:012:0016	Eric Reed	Residential	203 East Range Road	2378 West 1140 South	Payson	Utah		31,236	24,983			18,582		
115	29:012:0015	Shane W Hansen	Residential	PO Box 194	Approximate 993 South 2500 West	Payson	Utah		79,073	68,098			44,934		
123	29:023:0021	Kathleen M an Michael Earl Hiatt	Residential	740 South 700 West	Approximate 1152 South 1950 West	Payson	Utah						68,237		
124	29:012:0020	Caminath LLC (ET AL)	Residential	754 East 1200 North	Approximate 2050 West 1130 South	Payson	Utah		186,450	8,882			67,240		
126	30:065:0002	Lopez, Edgar Velasco (ET AL)	Residential	1923 West 1130 South	1923 West 1130 South	Payson	Utah						10,888		
127	30:065:0081	Brown Family Trust 04-18-2016 The (ET AL)	Residential	430 East Utah Avenue	1853 West 1130 South	Payson	Utah						11,297		
128	30:065:0060	Erik Huff (ET AL)	Residential	1899 West 1130 South	1899 West 1130 South	Payson	Utah						605		
129	30:060:0014 30:060:0060	Towne & Country Investments LLC	Residential	PO Box 992	1826 West 1130 South	Payson	Utah		40,802	75,921					
129B	30:060:0040	Towne & Country Investments LLC	Residential	PO Box 992	1828 West 1130 South	Payson	Utah		34,210	37,785					
130	30:060:0056	BBOP Associates LLC (ET AL)	Commercial	815 East Silver Shadow Drive	Approximate 1800 West 1130 South	Payson	Utah		39,367	23,482			15,219		
131	30:060:0010	Lloud and Tamara Stanton	Residential	6088 West 1000 South	766 South 1700 West	Payson	Utah						2,376		
132	30:060:0030	Redevelopment Agency of Payson City	Agriculture	439 West Utah Avenue	Approximate 1700 West 1130 South	Payson	Utah		102,014	27,723			43,506		
135	30:060:0057 30:060:0052	Payson Business Center LLC	Commercial	97 Professional Way	Approximate 1600 West 800 South	Payson	Utah		43,758	523			33,212		
136	30:060:0034 30:060:0034	Payson Business Center LLC	Commercial	97 Professional Way	Approximate 1750 West 800 South	Payson	Utah		28,802				17,463		
138	30:060:0078	Payson Business Center LLC	Commercial	97 Professional Way	Approximate 1751 West 800 South	Payson	Utah						4,151		
139	30:060:0042	Payson Business Center LLC (ET AL)	Commercial	4024 East Gail Court	Approximate 1695 West 800 South	Payson	Utah		1,254				5,249		
140	30:060:0002 66:510:0001	Jones Leasing Company LLC	Commercial	1250 West 100 North	1602 West 800 South	Payson	Utah		1,013				8,759		
141	30:060:0052	MMP Payson INC	Commercial	820 North Mountain Avenue # 100	Approximate 1521 West 800 South	Payson	Utah		15,399				24,671		
142	66:519:0004	FV Properties LLC	Commercial	1568 West 800 South	1568 West 800 South	Payson	Utah		4,893				11,449		
143	30:060:0054	7-Eleven INC	Commercial	1722 Routh Street Suite 1000	1522 West 800 South	Payson	Utah		1,029				8,547		
144	30:060:0013	Stanley John and Lynette W Goodrich	Residential	5487 West 12800 South	724 South 1700 West	Payson	Utah						2,191		
145	30:060:0011	Donald H and Melissa H Peterson	Residential	958 East 1100 North	Approximate 700 South 1700 West	Payson	Utah						396		
146	30:060:0014	Redbridge Properties LC	Residential	100 East Center Street	Approximate 720 South 1700 West	Payson	Utah		338				6,268		
149	30:060:0045	UNION Pacific Railroad (ET AL)	Commercial	1400 Douglas Street # 1640	Approximate 800 South 1700 West	Payson	Utah		468				469		
Totals									941,402	340,024	0	576,378	1,857,804	\$ 1,511,977	



PROJECT NUMBER:

PROJECT NAME: 650 South Hybrid ROW Impacts

RISK ASSESSMENT

A - EARLY ACQ.
B - HIGH
C - MEDIUM
D - LOW

MITIGATION SCHEDULE

PARCEL NUMBER	COUNTY TAX ID NO.	PROPERTY TYPE (APPARENT USE)	OWNER'S CONTACT INFORMATION		PROPERTY LOCATION INFORMATION			RW Sheet	SQUARE FEET OF ROW TAKE	SQUARE FEET OF SEVERED TRACT	SQUARE FEET PERP EASE	SQUARE FEET TEMP EASE	TOTAL AREA	APPROX COST
			MAILING ADDRESS	PROPERTY ADDRESS	CITY	COUNTY								
98	Railroad A							27,527						
99	Railroad B							47,903						
107	29:010:0050	Residential	647 South 2900 West	647 South 2900 West	Payson	Utah		55,417	25,764		18,468			
108	29:010:0042	Residential	10726 South 5200 West	Approximate 700 South 2400 West	Payson	Utah		155,075			103,229			
109	29:010:0030	Residential	586 South 2400 West	586 South 2400 West	Payson	Utah		51,970	19,408		16,457			
110	29:010:0029	Residential	594 South 2400 West	594 South 2400 West	Payson	Utah		56,324	19,236		17,607			
120	29:011:0013	Residential	601 South 2400 West	601 South 2400 West	Payson	Utah		370,555			111,033			
121	29:011:0011	Residential	601 South 2400 West	601 South 2400 West	Payson	Utah					13,665			
124	29:012:0020	Residential	754 East 1200 North	Approximate 2050 West 1130 South	Payson	Utah		39,708						
125	51:622:0002	Residential	2170 South Alveo Drive	744 South 1700 West	Payson	Utah		174,263	98,278					
130	30:060:0056	Commercial	815 East Silver Shadow Drive	Approximate 1800 West 1130 South	Payson	Utah		254,405			16,164			
131	30:060:0012	Residential	6088 West 10000 South	738 South 1700 West	Payson	Utah		73,431	74,517		78,981			
132	30:060:0030	Residential	439 West Utah Avenue	Approximate 1700 West 1130 South	Payson	Utah		18,295	29,019		7,261			
135	30:060:0037	Commercial	97 Professional Way	Approximate 1600 West 800 South	Payson	Utah		14,816			18,445			
136	30:060:0034	Commercial	97 Professional Way	Approximate 1750 West 800 South	Payson	Utah		14,474			12,439			
138	30:060:0048	Commercial	97 Professional Way	Approximate 1751 West 800 South	Payson	Utah					12,013			
139	30:060:0042	Commercial	4024 East Gail Court	Approximate 1695 West 800 South	Payson	Utah		788			12,172			
140	66:519:0001	Commercial	1250 West 100 North	1626 West 800 South	Payson	Utah		1,561			12,216			
141	30:060:0052	Commercial	820 North Mountain Avenue # 100	Approximate 1521 West 800 South	Payson	Utah		19,867			24,485			
142	66:519:0004	Commercial	1568 West 800 South	1568 West 800 South	Payson	Utah		1,222			11,340			
143	30:060:0054	Commercial	1722 Routh Street Suite 1000	1522 West 800 South	Payson	Utah		548			8,526			
147	29:011:0006	Residential	PO BOX 511196	Approximate 1900 West 200 South	Payson	Utah		1,858			2,461			
Totals								1,380,006	266,222	0	496,961	2,143,189	\$ 1,845,013	



PROJECT NUMBER:

PROJECT NAME: 800 South Hybrid ROW Impacts

RISK ASSESSMENT

A - EARLY ACQ.
B - HIGH
C - MEDIUM
D - LOW

MITIGATION SCHEDULE

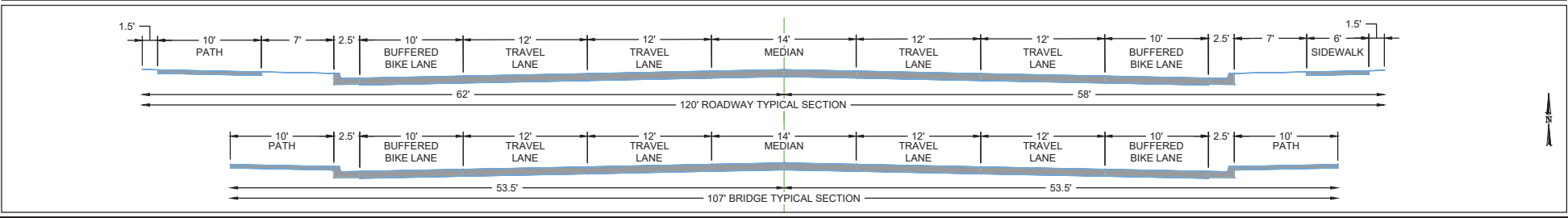
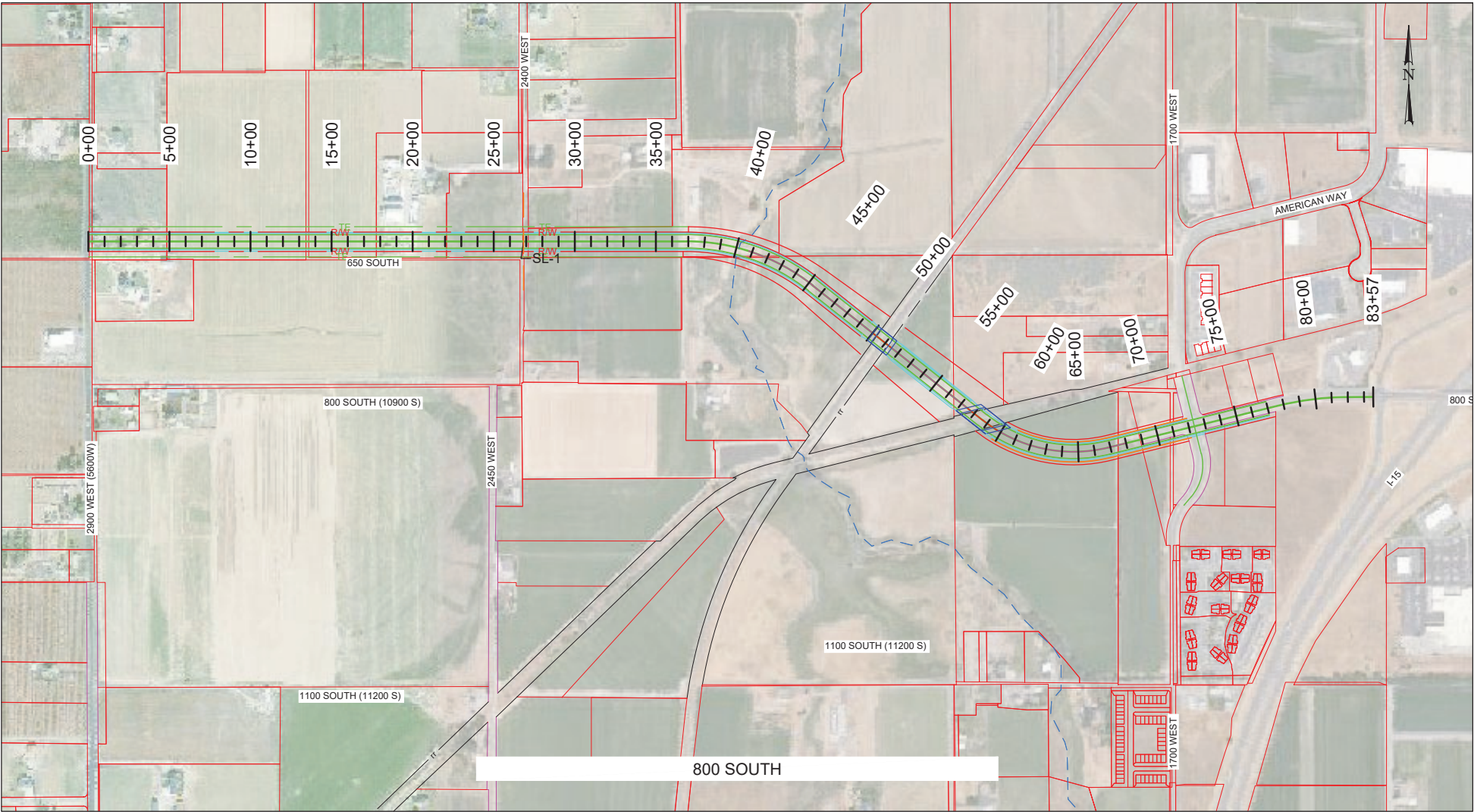
PARCEL NUMBER	COUNTY TAX ID NO.	PROPERTY TYPE (APPARENT USE)	OWNER'S CONTACT INFORMATION		PROPERTY LOCATION INFORMATION			RW Sheet	SQUARE FEET OF ROW TAKE	SQUARE FEET OF SEVERED TRACT	SQUARE FEET PERP EASE	SQUARE FEET TEMP EASE	TOTAL AREA	APPROX COST
			MAILING ADDRESS	PROPERTY ADDRESS	CITY	COUNTY								
98	Railroad A							26,805						
99	Railroad B							47,771			39,972			
105	29:009:0010 29:009:0023	Residential	2895 West 790 South	2853 West 790 South	Payson	Utah					9,061			
108	29:009:0019	Residential	10726 South 5200 West	Approximate 758 South 2900 West	Payson	Utah		375,993	121,432		147,625			
110	29:010:0029	Residential	594 South 2400 West	594 South 2400 West	Payson	Utah		41,728						
120	29:012:0002	Residential	601 South 2400 West	601 South 2400 West	Payson	Utah		381,964			131,397			
121	29:011:0011	Residential	601 South 2400 West	601 South 2400 West	Payson	Utah					328			
124	29:012:0020	Residential	754 East 1200 North	Approximate 2050 West 1130 South	Payson	Utah		39,651						
125	51:622:0002	Residential	2170 South Alveo Drive	744 South 1700 West	Payson	Utah		174,648	98,278					
130	30:060:0056	Commercial	815 East Silver Shadow Drive	Approximate 1800 West 1130 South	Payson	Utah		255,073			16,176			
131	30:060:0012	Residential	6088 West 10000 South	738 South 1700 West	Payson	Utah		2,052						
132	30:060:0030	Agriculture	439 West Utah Avenue	Approximate 1700 West 1130 South	Payson	Utah		18,276	28,969		7,268			
135	30:060:0037, 30:060:0052	Commercial	97 Professional Way	Approximate 1600 West 800 South	Payson	Utah		14,663			18,812			
136	30:060:0034, 30:060:0049, 30:060:0077	Commercial	97 Professional Way	Approximate 1750 West 800 South	Payson	Utah		14,663			18,812			
138	30:060:0078 30:060:0035 30:060:0046 30:060:0048	Commercial	97 Professional Way	Approximate 1751 West 800 South	Payson	Utah					11,767			
139	30:060:0042	Commercial	4024 East Gail Court	Approximate 1695 West 800 South	Payson	Utah		790			12,060			
140	05:519:0001, 66:540:0002	Commercial	1250 West 100 North	1626 West 800 South	Payson	Utah		1,578			12,204			
141	30:060:0052	Commercial	820 North Mountain Avenue # 100	Approximate 1521 West 800 South	Payson	Utah		19,855			24,632			
142	66:519:0004	Commercial	1568 West 800 South	1568 West 800 South	Payson	Utah		1,231			11,307			
143	30:060:0054	Commercial	1722 Routh Street Suite 1000	1522 West 800 South	Payson	Utah		554			8,547			
Totals								1,342,721	248,678	0	429,997	2,021,396	\$ 1,763,398	


APPENDIX D

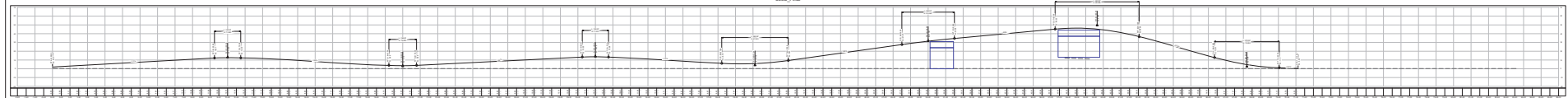
Preferred Alternative Horizontal and Vertical Alignment



File Path: G:\Shared drives\Projects\2021-11-15\UDOT\Projects\800 South\800 South_VP.dwg Jan 11, 2022 - 11:04am



PRELIMINARY NOT FOR CONSTRUCTION	
PAYSON CITY 600 S SANDY UT 84070 PAYSON, UTAH (801) 465-5200	CHECKED BY: ##### DESIGNED BY: ##### DATE: ###-##-## SCALE: 600
 WALL CONSULTANT GROUP 600 S SANDY UT 84070 PAYSON, UTAH (801) 465-3817	
PAYSON 800 SOUTH STUDY PRELIMINARY	PROFESSIONAL ENGINEER APPROVED 21-115 ALIGNMENT
PROJECT	SHEET NO. EX-01



APPENDIX E

Cost Estimate



**PIN: 18994 PROJECT # PROJECT NAME: Payson 800 South Extension
Cost Estimate - Concept Level**

Prepared By: Bryce Albrecht

Date 12/3/2021

Proposed Project Scope: Extension of 800 South from 1700W to 5600W

Approximate Route Reference Mile Post (BEGIN) =	0.000	(END) =	1.583
Project Length =	1.583	miles	8,360 ft
Current FY Year (July-June) =	2021		
Assumed Construction FY Year =	2030		
Construction Items Inflation Factor =	1.41	9 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	3.25%		
Assumed Yearly Inflation for Right of Way (%/yr) =	4.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	4.0%		
Construction Engineering (% of Construction + Incentives) =	6.5%		

Construction Items	Cost	Remarks
Public Information Services	\$55,000	
Roadway and Drainage	\$24,908,548	
Traffic and Safety	\$440,213	
Structures	\$18,123,097	
Environmental Mitigation	\$524,894	
ITS	\$0	
	Subtotal	\$44,051,752
	Items not Estimated (20%)	\$8,810,350
	Construction Subtotal	\$52,862,102
P.E. Cost	P.E. Subtotal	\$2,122,845 4%
C.E. Cost	C.E. Subtotal	\$3,449,623 7%
Right of Way	Right of Way Subtotal	\$15,660,038
Utilities	Utilities Subtotal	\$350,000
Incentives	Incentives Subtotal	\$209,027
Miscellaneous	Miscellaneous Subtotal	\$0

Cost Estimate (ePM screen 505)	2021	2030
P.E.	\$2,123,000	\$2,831,000
Right of Way	\$15,660,000	\$22,289,000
Utilities	\$350,000	\$492,000
Construction	\$52,862,000	\$74,367,000
C.E.	\$3,450,000	\$4,601,000
Incentives	\$209,000	\$294,000
Aesthetics	0.75% \$396,000	\$557,000
Change Order Contingency	9.00% \$4,793,000	\$6,743,000
UDOT Oversight	\$0	\$0
Miscellaneous	\$0	\$0
TOTAL	\$79,843,000	\$112,174,000

PROPOSED COMMISSION REQUEST	TOTAL \$79,843,000	TOTAL \$112,174,000
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Project Assumptions/Risks

- | | |
|--|--|
| <p>1 5 Lane Corridor (Roadway -</p> <hr/> <p>2 5 Lane Corridor (Bridge -</p> <hr/> <p>3 2 RR Structures</p> <hr/> <p>4 Walls on east RR Bridge approach, Concept includes 15ft maintenance areas and access to/from</p> <hr/> <p>5 Reconstruction of 800S from 1700W to I-15 ramps (hold the north EOP)</p> <hr/> <p>6 Does not account for Sewer, Water or Fiber</p> <hr/> <p>7 6 HMA, 6 UTBC, 12 GB, (Geotechnical Analysis and Report were not conducted)</p> <hr/> | <p>8 Includes Signal reconstruction at 1700W. Does not include future signals at 5600W (SR-141) or 5200W.</p> <hr/> <p>9 Unit pricing is the average unit price from Masterworks over the last 12 months</p> <hr/> <p>10 Storm Drain assumes a 42" trunk line, with 18inch laterals and associated structures every 500 ft beginning 300 ft from RR Structures</p> <hr/> <p>11 Does not include Box Culvert for north/South connectivity between the Red Bridge development.</p> <hr/> <p>12 Does not include lighting</p> <hr/> <p>13</p> <hr/> <p>14</p> <hr/> |
|--|--|