



# **Draft Alternatives Development and Screening Results Report**

## **Kimball Junction Environmental Impact Statement**

Lead agency:  
Utah Department of Transportation

**February 26, 2024**

*The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by the Utah Department of Transportation pursuant to 23 United States Code Section 327 and a Memorandum of Understanding dated May 26, 2022, and executed by the Federal Highway Administration and UDOT.*

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## Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
Area Plan	<i>Kimball Junction and SR-224 Area Plan</i>
BRT	bus rapid transit
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
GIS	geographic information systems
HOV	high-occupancy vehicle
I-80	Interstate 80
LOS	level of service
LTS	level of traffic stress
MP	milepost
NA	not applicable
NEPA	National Environmental Policy Act
O-D	origin-destination (pair)
Section 4(f)	Section 4(f) of the Department of Transportation Act of 1966
Section 404	Section 404 of the Clean Water Act
SPUI	single-point urban interchange
SR	state route
TDM	travel demand management
TES	threatened and endangered species
TSM	transportation system management
U.S.	United States
UDOT	Utah Department of Transportation
USACE	United States Army Corps of Engineers
USDOT	United States Department of Transportation
WOTUS	waters of the United States

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# 1.0 Introduction

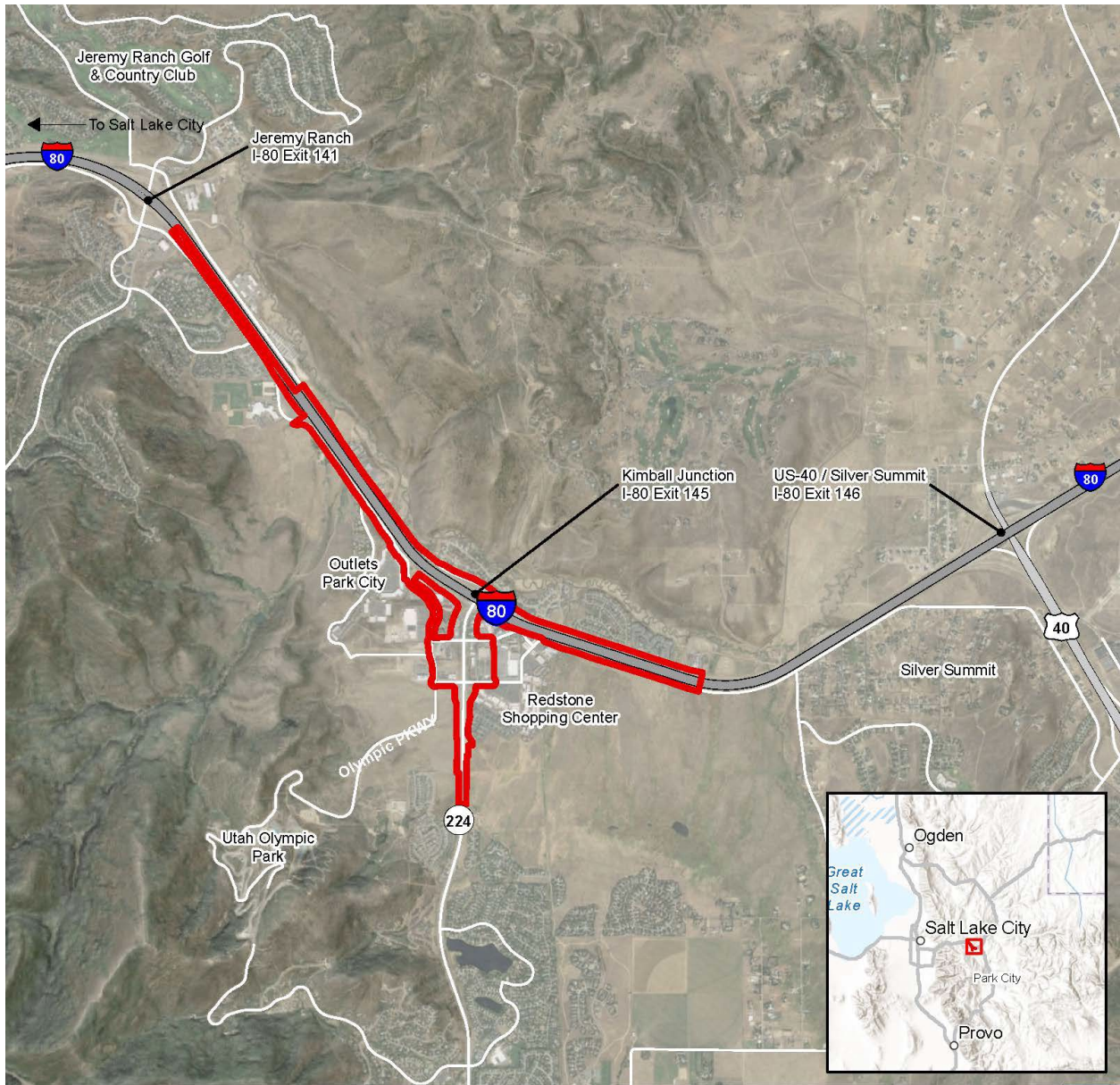
## 1.1 Report Purpose and Background Information

This report describes the alternatives development and screening process that was used for the Kimball Junction Environmental Impact Statement (EIS). The Utah Department of Transportation (UDOT) is preparing the EIS to evaluate proposed transportation improvements at the Interstate 80 (I-80) and State Route 224 (SR-224) interchange at Kimball Junction in Summit County, Utah. Figure 1-1 shows the needs assessment study area, which includes the I-80 and SR-224 interchange at Kimball Junction and SR-224 from Kimball Junction through the two at-grade intersections on SR-224 at Ute Boulevard and Olympic Parkway. The evaluation area also extends from milepost (MP) 143.2 to MP 145.6 on I-80. The alternatives studied in detail in the EIS will be located within this area. Improvements are needed to address transportation-related safety and mobility for all users of the Kimball Junction area.

The alternatives development and screening process results described in this report will provide critical information about how well an alternative satisfies the project's purpose and whether it is feasible and reasonable under the National Environmental Policy Act (NEPA), practicable under the Clean Water Act, and prudent and feasible under Section 4(f) of the Department of Transportation Act of 1966. [For more information regarding regulations considered in this screening process, see Section 3.2, *Reasons Why an Alternative Might Be Eliminated during the EIS Screening Process (Levels 3 and 4 Screening)*.]

The Federal Highway Administration (FHWA) has assigned its responsibilities under NEPA and other federal environmental laws to UDOT for highway projects in Utah, pursuant to 23 United States Code Section 327, in a Memorandum of Understanding dated May 26, 2022. In accordance with its responsibilities, UDOT is carrying out the environmental review process for the Kimball Junction Project in lieu of FHWA and serves as the lead agency in the NEPA process. The assignment of NEPA responsibilities to UDOT does not change the roles and responsibilities of any other federal agency whose review or approval is required for the project.

Figure 1-1. Kimball Junction EIS Needs Assessment Evaluation Area



Kimball Junction EIS Study Area Overview Map

 Kimball Junction EIS Needs Assessment Evaluation Area



## 1.2 Kimball Junction and SR-224 Area Plan

In partnership with Summit County, UDOT published the *Kimball Junction and SR-224 Area Plan* (Area Plan) in 2021. The Area Plan was developed using UDOT’s Solutions Development process, which is a local planning process that seeks to capture the unique context of an area or corridor and develop a set of solutions to meet its transportation needs. The Area Plan identified and evaluated future transportation improvements at the interchange of I-80 and SR-224 and through the two at-grade intersections on SR-224 (Ute Boulevard and Olympic Parkway) in Summit County. It also evaluated multimodal improvements to address congestion, mobility, safety, access, and travel time reliability at the Kimball Junction interchange and on SR-224 in the Kimball Junction area.

### What is the Kimball Junction area?

The Kimball Junction area includes the I-80 and SR-224 interchange through the two at-grade intersections on SR-224 (Ute Boulevard and Olympic Parkway).

The Area Plan process informed the draft purpose and need statement for the Kimball Junction EIS and the preliminary identification of project alternatives. The Area Plan applied a two-level screening process to analyze an initial set of 30 potential solutions. Eventually, the range of options was narrowed to three conceptual alternatives, which include highway, intersection, and pedestrian and bicyclist improvements.

The 2021 Area Plan is available on the Kimball Junction EIS website (<https://kimballjunctioneis.udot.utah.gov/resources>).

## 1.3 Alternatives Development and Screening Process Overview

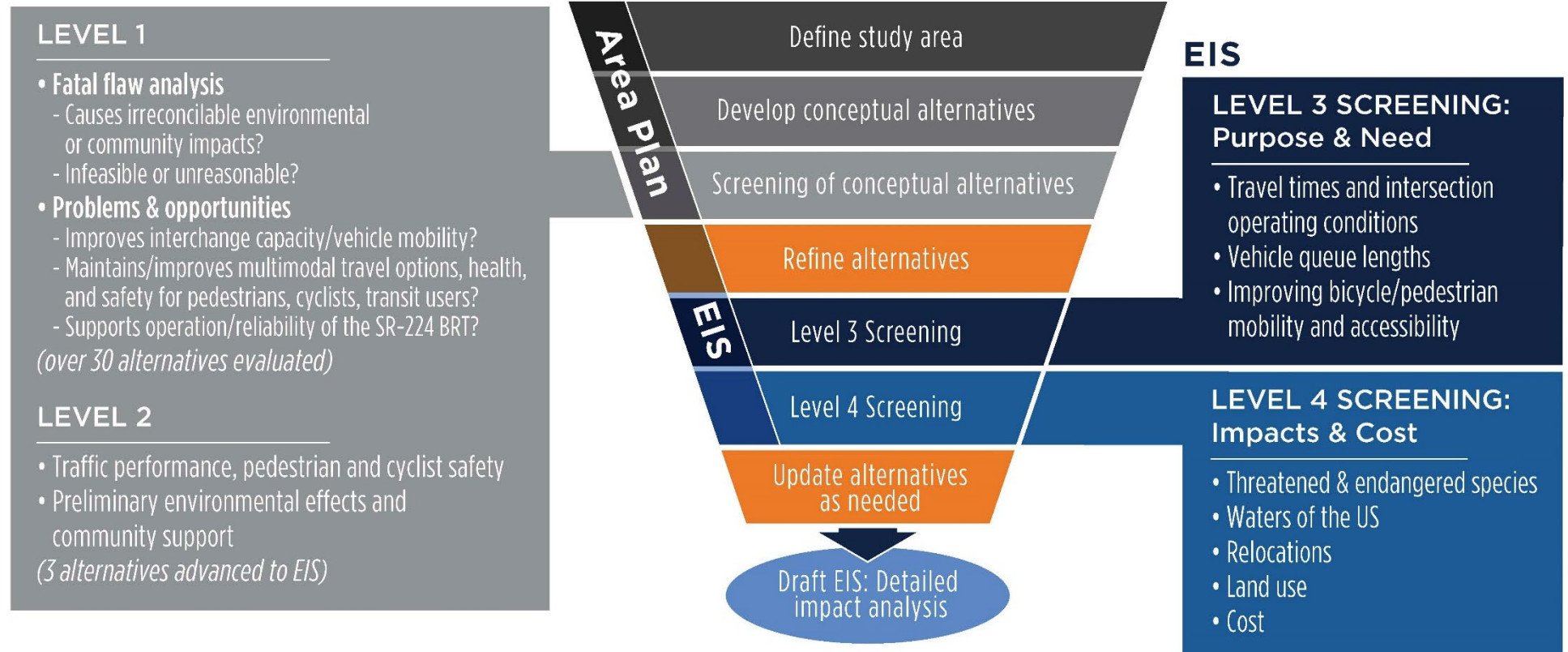
UDOT conducted a four-level screening evaluation of alternatives that spanned the Area Plan and EIS processes. The first two screening evaluations, Level 1 and Level 2 screening, were conducted during the 2021 Area Plan process, while the additional two screening evaluations, Level 3 and Level 4 screening, were conducted during the EIS process (Figure 1-2).

Public input occurred during the Level 1 and Level 2 screening conducted during the Area Plan and shown in Figure 1-2, and additional agency and public inputs in the form of formal scoping occurred just prior to the *Level 3 Screening* phase, also shown in the figure. A summary of the public and agency input received during the formal comment period held during the scoping phase is provided in the *Scoping Summary Report*, which is available on the Kimball Junction EIS website (<https://kimballjunctioneis.udot.utah.gov/resources>). Additional public input occurred after UDOT developed its alternatives screening criteria and methodology.

The release of this *Draft Alternatives Development and Screening Results Report* initiates another formal request for public and agency input.

Figure 1-2. Overview of the Kimball Junction EIS Alternatives Development and Screening Process

## Area Plan



## 2.0 Alternatives Development and Screening during the Area Plan

During the Area Plan, UDOT conducted the following two-level alternatives screening process for the 30 conceptual alternatives that were developed during the Area Plan:

- **Level 1 Screening.** Level 1 screening determined whether each conceptual alternative had a “fatal flaw” or whether it did not meet the problems and opportunities of the study. The alternatives that had a fatal flaw or did not meet the problems and opportunities were dismissed from further consideration.
- **Level 2 Screening.** Level 2 screening of the remaining conceptual alternatives included more-quantitative measures as well as a comparative evaluation of technical screening criteria.

More information regarding Level 1 and Level 2 screening criteria and measurements is available in the *Alternatives Development and Screening Methodology Report*, which is available on the Kimball Junction EIS website (<https://kimballjunctioneis.udot.utah.gov/alternative-screening-2>).

### 2.1 Conceptual Alternatives Development

An objective of the Area Plan process was to work with the study partners to analyze and develop a range of highway, intersection, and pedestrian and bicyclist improvements to improve capacity and multimodal transportation options in the Kimball Junction area and address the existing and long-term mobility needs of residents, commuters, and visitors between the I-80 interchange and the two at-grade traffic signals at Ute Boulevard and Olympic Parkway on SR-224.

As shown in Figure 2-1 below, the development of the Universe of Alternatives was the first step of the alternatives development and screening process and was completed as part of the Area Plan process. As shown in Table 2-1, the Universe of Alternatives included a wide array of ideas and suggestions for improvements to the Kimball Junction interchange area. These ideas were initiated by the study team in concert with the study partners and were based primarily on previous planning studies and through previous public and stakeholder input. Together with the study partners, the study team developed a wide range of potential solutions that could be implemented to address the study goals and identified problems and opportunities.

#### What is the Universe of Alternatives?

For the Kimball Junction Project, the Universe of Alternatives was developed during an alternatives development workshop with the study partners. The Universe of Alternatives included 30 conceptual alternatives ranging from stand-alone surface street improvements to new interchange configurations.

The conceptual alternatives developed and evaluated include a wide range of potential solutions including bypass lanes, new interchange locations and configurations, intersection improvements, and intersection and access point changes in the study area. Several solutions included transit/high-occupancy vehicle (HOV)-only travel lanes. Suggestions that were similar were combined; then the improvement ideas were grouped into four general improvement categories:

- I-80/SR-224 interchange alternatives with improvements focused on I-80 and the I-80 frontage road
- Alternatives focused on improvements along SR-224
- Alternatives that combine improvements on I-80 and along SR-224
- Stand-alone surface street improvement alternatives

Once the conceptual alternatives were screened to determine which alternative packages were most feasible for future study and possible implementation, a public survey was distributed during the winter of 2021 to solicit public feedback on the alternatives. A summary of the public and partner coordination and outreach efforts is included in the 2021 Area Plan, which is available on the Kimball Junction EIS website (<https://kimballjunctioneis.udot.utah.gov/resources>).

Figure 2-1. Overview of the Kimball Junction Area Plan's Alternatives Development and Screening Process

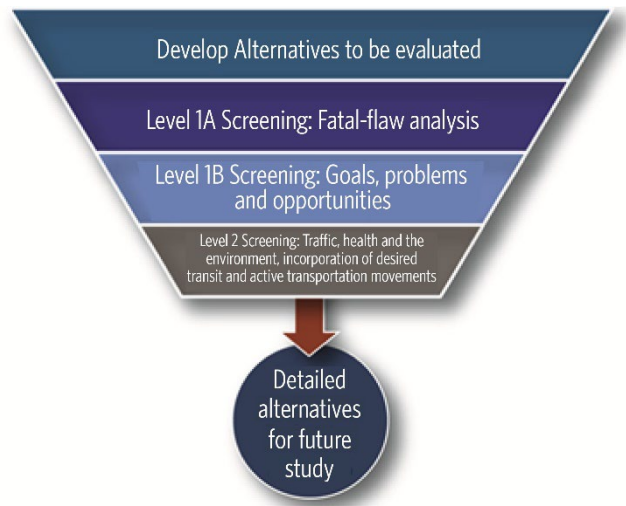


Table 2-1. Summary of Universe of Alternatives and Level 1 Screening Results

Alternative Name	Alternative Description	Level 1A Result	Level 1B Result
<b>Group A: I-80/SR-224 Interchange Alternatives with Improvements Focused on I-80 and the I-80 Frontage Road</b>			
<b>Alternative A-1:</b> Half-diamond interchange and tight-diamond interchange with thru movements and Texas U-turns <sup>a</sup>	Convert the existing single-point urban interchange (SPUI) to a tight diamond with U-turn movements, coupled with two new half-diamond interchanges on either side of the existing SR-224 interchange, all interconnected with one-way frontage roads. One-way frontage roads will provide new access points into Kimball Junction on the south side of I-80.  A transit/HOV-only ramp option was included in this alternative.	Passed	Passed
<b>Alternative A-2:</b> Offset single-point diamond interchange with direct ramps to elevated SR-224 bypass	Convert the existing SPUI to an offset single-point diamond (also referred to as a folded or collapsed diamond), coupled with new eastbound and westbound I-80 to southbound SR-224 direct ramps to an elevated southbound SR-224 bypass along the west side of SR-224, and eastbound I-80 off and on slip ramps to the existing two-way frontage road system.	Failed	NA
<b>Alternative A-3:</b> Bypass road	Construct an SR-224 bypass road through the southwest quadrant of the I-80/SR-224 interchange around the southwest edges of the Kimball Junction development and connect to I-80 with a new interchange about 1 mile west of the current SR-224 interchange.  A transit/HOV-only option was also considered for this alternative, which repurposes this new bypass alternative into a transit/HOV-only road that could connect to SR-224 south of Kimball Junction, and also provide “back-door” access to the transit center in Kimball Junction.	Failed <sup>c</sup>	NA
<b>Group B: Alternatives Focused on Improvements along SR-224</b>			
<b>Alternative B-1:</b> Grade-separated intersections with enhanced pedestrian crossings	Designed to provide improved pedestrian connectivity between the two halves of Kimball Junction, Alternative B-1 consists of grade-separated intersections with enhanced pedestrian crossing facilities at Ute Boulevard and Olympic Parkway. These grade-separated intersections could be signalized intersections or roundabout-style intersections and could either depress SR-224 under the intersections or elevate it over the intersections.	Failed	NA
<b>Group C: Alternatives That Combine Improvements on I-80 and along SR-224</b>			
<b>Alternative C-1:</b> Grade-separated intersections with enhanced pedestrian crossings and alternative connections to I-80	Identical to Alternative B-1 except combines with alternate connection methods at the I-80 interchange.  A transit/HOV-only ramp option was included in this alternative.	Failed <sup>b</sup>	NA

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Table 2-1. Summary of Universe of Alternatives and Level 1 Screening Results

Alternative Name	Alternative Description	Level 1A Result	Level 1B Result
<b>Alternative C-2:</b> Elevated northbound-only SR-224 bypass with new third-level flyover at I-80	Supplements the existing road system with an elevated northbound-only SR-224 bypass along the east side of SR-224 from north of Olympic Parkway to I-80, coupled with a new third-level northbound-to-westbound flyover at I-80 and a dedicated northbound-to-eastbound right turn to I-80. The existing SR-224 would be modified only to the extent necessary while accounting for removing the Park City northbound through traffic from that road.  A transit/HOV-only ramp option was included in this alternative.	Failed <sup>b</sup>	NA
<b>Alternative C-3:</b> Elevated two-way SR-224 bypass with new third-level flyover, one-way frontage roads, and an interchange at Olympic Parkway	Elevated two-way SR-224 bypass road up the median of SR-224 from north of Olympic Parkway to I-80, coupled with a new third-level northbound-to-westbound flyover at I-80, one-way frontage roads from I-80 to Olympic Parkway, an interchange at Olympic Parkway with a northbound-to-southbound U-turn, and right-in/right-out connections to the one-way frontage roads at Ute Boulevard.  A transit/HOV-only ramp option was included in this alternative.	Passed	Failed
<b>Alternative C-4:</b> Variation of elevated northbound-only SR-224 bypass with new third-level flyover at I-80	Variation of Alternative C-3. All features of Alternative C-3 are the same, except that the I-80 eastbound-to-southbound through movement is shifted to a circular flyover next to the I-80 northbound-to-westbound flyover. This design allows adding a northbound-to-southbound U-turn just north of Ute Boulevard to redirect the westbound Ute Boulevard traffic to the U-turn, creating a complete pair of one-way frontage roads.  A transit/HOV-only ramp option was included in this alternative.	Failed	NA
<b>Alternative C-5:</b> Variation of elevated northbound-only SR-224 bypass with new third-level flyover at I-80	Variation of Alternative C-3. A transit/HOV-only ramp option was included in this alternative.	Passed	Failed
<b>Alternative C-6:</b> SR-224 median trench with I-80 tunnel	Uses the SR-224 median trench concept but then continues the I-80 northbound-to-westbound movement through a tunnel under I-80.  A transit/HOV-only ramp option was included in this alternative.	Failed	NA

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Table 2-1. Summary of Universe of Alternatives and Level 1 Screening Results

Alternative Name	Alternative Description	Level 1A Result	Level 1B Result
<b>Alternative C-7:</b> SR-224 median trench with depressed I-80 eastbound-to-southbound movement	Similar to Alternative C-6, which uses the SR-224 median trench concept, but instead uses a depressed I-80 eastbound-to-southbound movement to route traffic into the trench.  A transit/HOV-only ramp option was included in this alternative.	Failed <sup>b</sup>	NA
<b>Alternative C-8:</b> SR-224 median trench with turbine-style I-80 interchange	Alternative C-8 uses the same SR-224 median trench or elevated concept as Alternative C-7 but, instead of constructing a third level of the I-80 interchange, it converts the I-80 interchange into a turbine-style configuration where these free-flow traffic movements can all be accommodated within the existing two levels of the interchange.  A transit/HOV-only lane option was also included in this alternative.	Failed	NA
<b>Group D: Stand-alone Surface Street Alternatives</b>			
<b>Alternative D-1</b>	Triple northbound left turns at I-80 interchange. Expand I-80 eastbound off-ramp for transit/HOV only.	Passed	Passed
<b>Alternative D-2</b>	Consolidate left turns. East/west left turns allowed only at Ute Boulevard, and north/south left turns allowed only at Olympic Parkway. Dual left-turn lanes would likely be needed.	Passed	Failed
<b>Alternative D-3</b>	Construct Ute Boulevard right-in/right-out and widen SR-224. Restrict Ute Boulevard to right-in/right-out, widen SR-224 to Olympic Parkway, and add dual lefts at Olympic Parkway.	Passed	Failed
<b>Alternative D-4</b>	Ute Boulevard bridge and right-in/right-out. Grade-separate Ute Boulevard with right-in/right-out to and from SR-224 (informal bow-tie intersection).	Failed	NA
<b>Alternative D-5</b>	Elevated intersection(s). Elevate intersection at Ute Boulevard and possibly Olympic Parkway as well.	Failed	NA
<b>Alternative D-6</b>	Diverging diamond interchange.	Passed	Failed
<b>Alternative D-7</b>	Dual left turns at Ute Boulevard and Olympic Parkway.	Passed	Passed
<b>Alternative D-8</b>	Add northbound left-turn lane at Olympic Parkway a transit/HOV-only lane as it directly ties into SR-224 bus rapid transit (BRT) route.	Passed	Failed
<b>Alternative D-9</b>	Add an additional northbound left turn-lane at the existing SPUI for transit/HOV. (There appears to be space using the existing bridge width). This alternative is similar to Alternative D-1 but incorporates the transit/HOV-only aspect.	Passed	Failed

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Table 2-1. Summary of Universe of Alternatives and Level 1 Screening Results

Alternative Name	Alternative Description	Level 1A Result	Level 1B Result
<b>Alternative D-10</b>	Add a pedestrian tunnel at Ute Boulevard, similar to existing tunnel at Olympic Parkway.	Passed	Passed
<b>Alternative D-11</b>	Northbound lane widening on SR-224 from Olympic Parkway to Ute Boulevard.	Passed	Passed
<b>Alternative D-12</b>	Southbound lane widening on SR-224 from Olympic Parkway to Ute Boulevard.	Passed	Passed
<b>Alternative D-13</b>	Construct direct-connect (bypass) lanes for the eastbound I-80 to southbound SR-224 and northbound SR-224 to westbound I-80 through movements. The northbound SR-224 to westbound I-80 portion would require a flyover bridge south of Olympic Parkway and also a flyover bridge over I-80.	Passed	Failed
<b>Alternative D-14</b>	New connection and possible traffic signal at Bear Cub Drive. Build straight-line spur off Olympic Parkway at the bend and connect to Bear Cub Drive with a new traffic signal at Bear Cub Drive and SR-224.	Passed	Passed
<b>Alternative D-15</b>	Incorporate a transit/HOV-only right-turn lane from the eastbound I-80 off-ramp to Ute Boulevard.	Passed	Passed
<b>Alternative D-16</b>	Extend westbound-to-northbound right-turn lane on Newpark Blvd.	Passed	Passed
<b>Alternative D-16A</b>	Close left turns at McDonald's and the Richens building to extend the left turn from Ute Boulevard to SR-224.	Passed	Passed

Definitions: HOV = high-occupancy vehicle; NA = not applicable; SPUI = single-point urban interchange

- <sup>a</sup> A Texas U-turn is a lane that allows vehicles to travel on one side of a one-way frontage road to perform a U-turn onto the opposite frontage road (typically crossing over or under a freeway).
- <sup>b</sup> Eliminated during Level 1 screening but moved forward into Level 2 screening when combined with Alternative C-7.
- <sup>c</sup> The general-purpose traffic bypass road concept was eliminated during Level 1 screening because the traffic circle would not likely accommodate all of the traffic using the bypass, and this lack of accommodation would be an irreconcilable community impact. The transit/HOV-only bypass road concept with modifications and combined with Alternative D-14 was moved to Level 2 screening.



## 2.1.1 Consideration of Transit, Travel Demand Management, and Transportation System Management Alternatives

No standalone transit, travel demand management (TDM), or transportation system management (TSM) alternatives were identified for the Kimball Junction Project. Standalone transit, TDM, or TSM alternatives would not meet the purpose of the project because they would not address the capacity, mobility, safety, and operational needs of the project.

Nonetheless, the Area Plan acknowledged that a variety of strategies, when used in combination, can effectively improve congestion and mobility. Strategies such as demand management and additional operational improvements, such as advanced signal systems, signal retiming and optimization, and signal priority for buses, can help manage travel demand in concert with capacity improvements and multimodal measures.

The alternatives considered by UDOT will accommodate all current and proposed transit operations, including the planned SR-224 bus rapid transit (BRT), identified in local and regional transportation plans.

### What are TDM and TSM?

Travel demand management (TDM) is a set of strategies aimed at maximizing traveler choices, while transportation system management (TSM) is a set of techniques used to increase the capacity of transportation infrastructure without increasing its physical size.

## 2.2 Level 1 Screening

The preliminary alternatives were assessed using a two-step screening process to determine which alternatives were reasonable and feasible and should be considered for further study.

**Level 1A Screening.** After UDOT developed the conceptual alternatives that were based primarily on previous planning studies and through previous public and stakeholder input, it began the screening process with a preliminary (Level 1A) evaluation of conceptual alternatives to determine whether they had fatal flaws. Any alternative that didn't pass Level 1A screening was dismissed from continued study.

**Level 1B Screening.** Alternatives that were not screened out during the Level 1A fatal-flaw analysis were moved forward into Level 1B screening. UDOT developed the Level 1B screening criteria in the following areas: capacity, accessibility, mobility, safety and comfort, community health and environment, multimodal connections, consistency with adopted plans, public acceptance, and innovative operational and maintenance techniques. These areas align with the six goals developed by the study partners. The study area's goals and opportunities are the foundation of the evaluation criteria.

More information regarding Level 1 screening criteria and measurements is available in the *Alternatives Development and Screening Methodology Report*, which is available on the Kimball Junction EIS website (<https://kimballjunctioneis.udot.utah.gov/alternative-screening-2>).

## 2.2.1 Fatal-flaw Screening Questions for Level 1A Screening

Alternatives with fatal flaws—for example, alternatives that are not technically feasible—were determined to not be reasonable. If an alternative did not have fatal flaws, it was further developed so that Level 1B screening could be conducted.

The following yes-or-no, fatal-flaw questions were used in Level 1A screening:

- Does the alternative cause irreconcilable environmental impacts?
- Does the alternative cause irreconcilable community impacts?
- Is the alternative infeasible or unreasonable?

Any alternative with a “yes” answer to a screening question was dismissed from continued study.

## 2.2.2 Problems, Opportunities, and Goals Screening Questions for Level 1B Screening

The study goals and problems and opportunities were the basis for the remaining Level 1B yes-or-no screening questions that were used to screen the alternatives that passed Level 1A screening:

- Does the alternative improve interchange area capacity and vehicle mobility to/from I-80 and to/from SR-224 through the Kimball Junction area?
- Does the alternative maintain or improve multimodal travel options, health, and safety for pedestrians, cyclists, and transit users in the Kimball Junction area?
- Does the alternative support operation and reliability of the *Valley to Mountain (SR-224) Transit Project Alternatives Analysis* preferred alternative (side-running BRT) on both sides of SR-224?

Any alternative with a “no” answer to a screening question was dismissed from continued study.

## 2.2.3 Level 1 Screening Results

Thirty alternatives were developed at a conceptual level and put through the two-step Level 1 screening process during the Area Plan. As shown in Table 2-1, *Summary of Universe of Alternatives and Level 1 Screening Results*, above, 19 alternatives were eliminated during Level 1 screening. Eleven of those alternatives (A-2, A-3, B-1, C-1, C-2, C-4, C-6, C-7, C-8, D-4, and D-5) were dismissed during Level 1A screening because of at least one of the following three fatal flaws, or because an alternative did not meet FHWA’s design standards and guidelines:

- Insufficient merge and/or weave distance between Ute Boulevard and the I-80 interchange (in specific response to bridge or tunnel ramps off I-80)
- Extremely high construction cost, as defined on the scale extremely low – low – relatively low – high – relatively high – extremely high
- Construction that would severely impact the function of the I-80 mainline and/or the I-80 interchange, such as by creating congestion or increasing travel time due to lane closures and/or detours

An additional eight alternatives (Alternatives C-3, C-5, D-2, D-3, D-6, D-8, D-9, and D-13) were eliminated during Level 1B screening because they didn’t meet the study goals, including not maintaining or improving multimodal travel options or disrupting east-west connectivity.

Based on the two-step Level 1 screening evaluation, the following four alternatives were moved forward into Level 2 screening. These four alternatives comprise “bundles” of the 11 remaining alternatives that passed Level 1 screening.

- **Alternative 1:** Half-diamond interchange and tight-diamond interchange with through movements, Texas U-turns, and a pedestrian tunnel at Ute Boulevard (Alternative A-1+D-10 with possibility to incrementally add D-7, D-11, and D-12)
- **Alternative 2:** Transit/HOV-only bypass road concept with adjacent trail and extension of Olympic Parkway with a new connection to SR-224 at Bear Cub Drive (Alternative A-3 with D-14)
- **Alternative 3:** Grade-separated intersections with enhanced pedestrian crossing facilities at Ute Boulevard and Olympic Parkway and alternate connections to the I-80 interchange (Alternative C-7+C-1/C-2 plus braided ramp)
  - Note that Alternative 3 combines features from Alternatives C-1 and C-7, both of which were eliminated during Level 1 screening. The grade-separated intersections at Ute Boulevard and Olympic Parkway from C-1 were incorporated with the braided ramp concepts from C-7. This helps to solve issues with the individual alternatives that caused them to be eliminated. In addition, a braided ramp concept was added to this alternative to further resolve issues associated with the standalone alternatives.
- **Alternative 4:** Combination of stand-alone surface street improvements (combined remaining D alternatives)

An online public meeting and survey was held to present the Level 1 screening results and to ask the public for their feedback on the four alternative bundles moving into Level 2 screening. Based on public survey results and comments, community support for an alternative was one evaluation measure used during Level 2 screening to ensure that an alternative fit the character and scale of the community.

## 2.3 Level 2 Screening

During Level 2 screening, UDOT evaluated the four conceptual alternatives that passed Level 1 screening against criteria that focused on how well each alternative meets the problems and opportunities for the study from a traffic perspective, the alternative’s impacts to the natural and built environment, public sentiment, estimated project costs, logistical considerations, and overall feasibility.

The Level 2 screening was a more-detailed evaluation of the alternatives that passed Level 1 screening. The Level 2 screening either added additional measures or expanded measures for each of the criteria from Level 1 screening and I provided a method for comparing alternatives. Alternatives carried forward from Level 1 screening were reviewed and refined to add more definition to the proposed improvements, to better understand their operational benefits and costs, and to provide information so that the study team could further assess the alternatives in Level 2 screening.

### 2.3.1 Level 2 Screening Results

Based on the initial Level 2 screening traffic evaluation, Alternative 2, a transit/HOV-only bypass road through the interchange area's southwest quadrant, was removed from further study because it would not relieve the existing or forecasted future traffic problems in the study area. Travel demand modeling conducted as part of Level 2 screening showed that Alternative 2 would not relieve the existing or forecasted future traffic problems in the study area. Modeling showed that even if Alternative 2 were constructed, vehicles would still likely back onto the I-80 mainline, travel time through Kimball Junction would remain somewhat slow, and vehicle mobility through Kimball Junction would remain at level of service (LOS) F.

In addition to Alternative 2 failing Level 2 screening from a traffic perspective, the alternative did not have public support. During the second public survey held during the Area Plan to gauge community support and input regarding the alternatives being screened, Alternative 2 received the lowest overall rating among the four alternatives. There was almost universal community rejection for the alternative running through the edge of the Hi-Ute conservation easement. In addition, survey respondents didn't think that Alternative 2 would solve congestion or traffic build-up, felt that there were potential safety risks near Ecker Middle School, and felt that the alternative would reduce recreation options instead of expanding them by replacing trails with an HOV lane.

Alternatives 1, 3, and 4 passed Level 2 screening and were recommended by the study partners for further evaluation in the EIS.

More information regarding the Level 2 screening results is available in the Area Plan, which is available on the Kimball Junction EIS website (<https://kimballjunctioneis.udot.utah.gov/resources>).

More information regarding Level 1 and Level 2 screening criteria and measurements is available in the *Alternatives Development and Screening Methodology Report*, which is available on the Kimball Junction EIS website (<https://kimballjunctioneis.udot.utah.gov/alternative-screening-2>).

### 3.0 Alternatives Refinement and Screening Process during the EIS Process

Building on the results of the 2021 Area Plan, the alternatives development and screening process for the Kimball Junction EIS consisted of the following phases:

- Refine Alternatives.** As part of the alternatives refinement process, the conceptual alternatives resulting from the Area Plan and introduced to the public during the EIS scoping phases were further developed based on additional topographic information and traffic analysis performed during the Level 3 and Level 4 screening processes.
- Level 3 Screening.** Screening criteria were applied to eliminate alternatives that do not meet the project’s purpose and need. Refine the alternative options that pass this screening for further evaluation.
- Level 4 Screening.** Screening criteria were applied to eliminate alternatives that meet the purpose of and need for the project but would be unreasonable for other reasons—for example, an alternative that would have unreasonable impacts to the natural and human environment, would not meet regulatory requirements, or duplicates the benefits of a less costly alternative with similar impacts to the natural and human environment.

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

#### 3.1 New Alternative Names for the EIS Process

Moving forward in the EIS process, UDOT simplified the names of the three conceptual alternatives that were recommended by the study partners in the Area Plan for further study in the EIS (Table 3-1). The conceptual alternatives are shown in Appendix A, *Conceptual Alternatives Resulting from the Area Plan and Refinements Made to Those Alternatives*.

Table 3-1. New Alternative Names for the EIS

Area Plan Name	EIS Name
<b>Alternative 1:</b> Half-diamond interchange and tight-diamond interchange with through movements, Texas U-turns, and a pedestrian tunnel at Ute Boulevard (Alternative A-1+D-10 with possibility to incrementally add D-7, D-11, and D-12)	<b>Alternative A:</b> Split Diamond Interchange with Intersection Improvements
<b>Alternative 3:</b> Grade-separated intersections with enhanced pedestrian crossing facilities at Ute Boulevard and Olympic Parkway and alternate connections to the I-80 interchange (Alternative C-7+C-1/C-2 plus braided ramp)	<b>Alternative B:</b> Grade-separated Intersections with One-way Frontage Roads to the I-80 Interchange
<b>Alternative 4:</b> Combination of stand-alone surface street improvements (combined remaining D alternatives)	<b>Alternative C:</b> Intersection Improvements with Pedestrian Enhancements

## 3.2 Reasons Why an Alternative Might Be Eliminated during the EIS Screening Process (Levels 3 and 4 Screening)

This section describes the laws and applicable regulations and guidance used to determine whether a concept might be eliminated during the EIS screening process.

### 3.2.1 Council on Environmental Quality Regulations and Guidance

The Council on Environmental Quality's NEPA regulations and guidance suggest three primary reasons why an alternative might be determined to be infeasible or not reasonable and eliminated from further consideration.

1. The alternative does not satisfy the purpose of the project (this was evaluated in Level 3 screening).
2. The alternative is determined to be not practical or feasible from a technical and/or economic standpoint (this was evaluated in Level 4 screening).
3. The alternative substantially duplicates another alternative; that is, it is otherwise reasonable but offers little or no advantage for satisfying the project's purpose, and it has impacts and/or costs that are similar to or greater than those of other, similar alternatives (this was evaluated in Level 4 screening).<sup>1</sup>

### 3.2.2 Clean Water Act Requirements

Because federally regulated wetlands or other waters of the United States might be present in the study area, UDOT will also consider the *Clean Water Act Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material* and Executive Order 11990, *Protection of Wetlands*, during the alternatives development phase. The U.S. Army Corps of Engineers is responsible for determining compliance with the Section 404(b)(1) Guidelines and may permit only the least environmentally damaging practicable alternative.

The Section 404(b)(1) Guidelines state that "no discharge of dredged or fill material [to Section 404-regulated waters] shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences" [Section 230.10(a)]. This section of the guidelines further states that:

1. For the purpose of this requirement, practicable alternatives include but are not limited to:
  - a. Activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters;
  - b. Discharges of dredged or fill material at other locations in waters of the United States or ocean waters;
2. An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it

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<sup>1</sup> American Association of State Highway and Transportation Officials (AASHTO) Center for Environmental Excellence, "Defining the Purpose and Need and Determining the Range of Alternatives for Transportation Projects," AASHTO Practitioner's Handbook 07, August 2016.

is otherwise a practicable alternative, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded, or managed in order to fulfill the basic purpose of the proposed activity may be considered.

3. Where the activity associated with a discharge which is proposed for a special aquatic site (as defined in Subpart E of the guidelines) does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not water dependent), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.

### 3.2.3 Section 4(f) Requirements

Section 4(f) of the Department of Transportation Act of 1966 (49 United States Code Section 303) applies to publicly owned parks, recreation areas, and wildlife and waterfowl refuges and publicly or privately owned significant historic properties. The requirements of Section 4(f) apply only to agencies within the U.S. Department of Transportation (USDOT)—for example, FHWA.

Section 4(f) prohibits USDOT agencies from approving the use of any Section 4(f) land for a transportation project, except as follows:

- First, the USDOT agency can approve the use of Section 4(f) land by making a determination that (1) there is no prudent and feasible alternative that would avoid the use of the Section 4(f) resource *and* (2) the project includes all possible planning to minimize harm to that property.
- Second, the USDOT agency can approve the use of Section 4(f) property by making a finding of *de minimis* impact for that property.

An alternative that would not be available to the USDOT agency because of the severity of Section 4(f) impacts could be eliminated during Level 2 screening.

The *Alternatives Development and Screening Methodology Report* provides additional information regarding the methodology and process for developing and screening alternatives for the Kimball Junction Project. This report is available on the Kimball Junction EIS website (<https://kimballjunctioneis.udot.utah.gov/alternative-screening-2>).

#### What is a *de minimis* impact?

For publicly owned public parks, recreation areas, and wildlife and waterfowl refuges, a *de minimis* impact is one that would not adversely affect the activities, features, or attributes of the property.

For historic sites, a finding of *de minimis* impact means FHWA has determined that either the project would not affect the historic property or the project would have “no adverse effect” on the historic property.

### 3.3 Summary of the Kimball Junction Project’s Purpose and Need (for Level 3 Screening)

#### 3.3.1 Need for the Project

For the Kimball Junction Project, UDOT looked at the expected transportation mobility needs in the needs assessment evaluation area in 2050. These mobility needs are related primarily to traffic delay during morning (AM) and afternoon (PM) peak hours due to projected growth in population, employment, tourism, and development in the Kimball Junction area, in surrounding areas, and regionally.

This projected growth in the area will lead to the following issues:

- Future (2050) failing conditions at the intersections of SR-224 and I-80, Ute Boulevard, and Olympic Parkway will create delay and unreliable travel times.
- Vehicle queues on the I-80 off-ramps will extend back onto mainline I-80, resulting in unsafe travel conditions.

#### What are the AM and PM peak hours?

The AM and PM peak hours are the 1-hour periods of the morning and afternoon, respectively, during which there is the greatest number of vehicles on the roadway system. The peak hours that were modeled in the analysis were 8:00 to 9:00 AM and 4:00 to 5:00 PM. Peak hours are looked at by transportation officials when examining the need for a project.

In addition, UDOT looked at expected active transportation mobility needs in the evaluation area, also during 2050. The active transportation mobility needs are related in part to future upgrades in transit service in the evaluation area, as well as to growth of the regional trail system, community interest in walking and bicycling in the evaluation area and to access local recreation amenities, and developing land uses in the evaluation area. These factors will lead to the following issue:

- Growing east-west active transportation (walking and bicycling) demand across SR-224 will require additional crossing facilities.

Finally, due to projected growth in the area, Summit County has proposed transit improvements to alleviate vehicle travel demand and improve transit mobility and reliability as part of a separate project on SR-224. Although the proposed SR-224 Bus Rapid Transit Project has independent utility from this project, the project partners will consider ways to integrate any alternatives with the SR-224 Bus Rapid Transit Project.

#### 3.3.2 Purpose of the Project

The project purpose is to address transportation-related safety and mobility for all users of the Kimball Junction area by:

- Improving operations and travel times on SR-224 from the I-80 interchange through Olympic Parkway;
- Improving safety by reducing vehicle queues on I-80 off-ramps;
- Improving pedestrian and bicyclist mobility and accessibility throughout the evaluation area; and
- Maintaining or improving transit travel times through the evaluation area.



## 3.4 Public and Agency Engagement during the EIS Process

At the start of the EIS process, public and agency input on the three conceptual alternatives resulting from the Area Plan was gathered during the formal NEPA scoping period. Additional public comment to date was sought when UDOT released the *Alternatives Development and Screening Methodology Report*.

### 3.4.1 Scoping

Scoping is the first step in the NEPA process and involves using public and agency participation to determine the scope of the issues to be addressed and identify important issues related to the proposed action. The Notice of Intent to prepare the Kimball Junction EIS was published on December 21, 2022, which initiated the formal NEPA scoping period. The scoping period lasted 37 days until January 27, 2023.

UDOT held two public scoping meetings in January 2023 that had about 100 total attendees. Scoping materials presented included an overview of the Area Plan process, draft purpose and need statement, conceptual alternatives resulting from the Area Plan, draft alternative screening process and criteria, and project timeline. These meetings also gave members of the public the chance to ask UDOT clarifying questions regarding the conceptual alternatives and the alternatives development process. Similarly, an agency scoping meeting was held on January 9, 2023, for interested state and federal agencies and local governments.

The *Scoping Summary Report* provides a summary of the scoping activities, outreach materials, and public and agency scoping comments received. This report is available on the Kimball Junction EIS website (<https://kimballjunctioneis.udot.utah.gov/resources>).

During the scoping process, UDOT received over 170 individual comment submissions from the public and agencies on the conceptual alternatives resulting from the Area Plan. Many comments were related to concerns about congestion, concerns about noise impacts, wildlife crossings and general wildlife protection, the source of possible funding, pedestrian options and safety, public transit options, how alternatives might affect development and existing businesses, and the cost of the alternatives.

Comments and/or suggestions specific to the conceptual alternatives included changes to existing intersections, improvements to other existing roads, new bridges, additional pedestrian enhancements, and various new bypass roads. Some commenters suggested new alternatives, or new concepts or variations to the existing conceptual alternatives. Most of these suggestions had been analyzed during the Area Plan and eliminated during Level 1 or Level 2 screening. However, several new concepts suggested by the public were added to one or more of the conceptual alternatives and then analyzed for feasibility by UDOT. These new concepts are discussed in Section 3.5, *Evaluation of New Concepts Identified by the Public*.

### 3.4.2 Alternatives Screening Methodology

UDOT held a 30-day comment period for the public and agencies from April 28 to May 28, 2023, on the *Alternatives Development and Screening Methodology Report*. This report identifies criteria and measures for evaluation and guides which alternative(s) is (are) carried forward for detailed evaluation in the EIS. The *Alternatives Development and Screening Methodology Report* is available on the Kimball Junction EIS website (<https://kimballjunctioneis.udot.utah.gov/alternative-screening-2>).

A variety of methods were used to notify the public of the availability of the *Alternatives Development and Screening Methodology Report* and of the 30-day comment period, including advertisements and legal notices in regional and local newspapers, notifications and reminders posted on the Kimball Junction Project website, and notices posted on UDOT's social media sites. In addition, an email notice was sent to the Kimball Junction EIS mailing list. Copies of the notification materials listed above are included in Appendix B, *Public and Agency Engagement Materials*.

During the 30-day comment period on the *Alternatives Development and Screening Methodology Report*, UDOT received 77 public comments. Most comments did not pertain to the proposed alternatives screening methodology, criteria, or measures but instead referred to preferences for one or more of the conceptual alternatives presented at the January 2023 scoping meetings, or invoked environmental issues that will be studied in the EIS as part of any alternative moving forward for detailed study rather than used as criteria for screening. Many comments were related to concerns about congestion, concerns about noise impacts, pedestrian options and safety, public transit options, how alternatives might affect existing businesses, and the cost of the alternatives.

UDOT did not receive any comments from agency representatives regarding the screening methodology, criteria, or measures, nor were any new alternatives proposed that had not already been considered and screened during the Level 1 and Level 2 screening processes.

No public commenter disagreed with the proposed screening methodology, criteria, or measures presented in the *Alternatives Development and Screening Methodology Report*, and a few public commenters reiterated using the screening criteria that UDOT proposed in the report. Additional issues for consideration were suggested by the public; these are described in Table 3-2. UDOT did not include these issues for consideration in either Level 3 or Level 4 screening; however, during the alternatives analysis, UDOT evaluated additional logistical considerations and overall feasibility of the conceptual alternatives, which include several of the issues raised by the public.

All comments that were received between April 28 and May 28, 2023, are included in Appendix B, *Public and Agency Engagement Materials*. Each comment was reviewed by UDOT as it was received and assigned a number. Appendix B includes a list of commenters presented chronologically and the corresponding comment number. Comments received after the formal comment period and before the development of the Draft EIS will be reviewed by UDOT and considered during the development of the Draft EIS.

Table 3-2. Issues for Consideration Identified by the Public

Issue to be Considered	UDOT Response
Snow removal plans need to be considered.	All alternatives that pass Levels 3 and 4 screening will be designed to accommodate snow removal.
Water table, drainage, flood risk and mitigation need to be considered.	All alternatives that pass Levels 3 and 4 screening will be designed to current UDOT standards. See the water table and drainage and flood risk sections below for more detail.
Access for emergency services needs to be considered.	All alternatives that pass Levels 3 and 4 screening will be designed to current UDOT standards.
The time to complete the project and the disruption of major construction need to be considered.	<p>Construction of Alternative A would have minor impacts to SR-224 and moderate impacts to I-80.</p> <p>Construction of Alternative B would have major impacts to SR-224, Ute Boulevard, and Olympic Parkway and minor impacts to I-80.</p> <p>Construction of Alternative C would have minor impacts to traffic on SR-224 and I-80.</p> <p>See the constructability section below for more detail.</p>
Noise pollution needs to be more heavily considered.	All alternatives that pass Levels 3 and 4 screening will be analyzed for potential noise impacts in the Draft EIS.
Light pollution needs to be more heavily considered.	All alternatives that pass Levels 3 and 4 screening will be analyzed for potential light pollution.
Wildlife impacts and the resulting safety issues need to be more heavily considered.	Driver-wildlife safety will be considered in the Draft EIS.

## Water Table

Shallow groundwater can cause problems during construction, and groundwater management can significantly increase construction duration and costs. For these reasons, UDOT placed piezometers at the intersections of SR-224 with Ute Boulevard and Olympic Parkway to determine whether groundwater would be an issue during and after construction. This issue is especially important for Alternative B because part of the roadway would be depressed just north of Bear Cub Drive to the SR-224 and I-80 interchange (that is, under the Olympic Parkway and Ute Boulevard cross streets). If there is shallow groundwater in the depressed section of Alternative B, the depressed roadway could create a barrier to groundwater movement and/or create a conduit to convey groundwater, potentially lowering the water table and removing a water source for nearby wetlands and other waters of the United States.

### What is a piezometer?

A piezometer is a pressure-sensitive, submersible measurement sensor designed to detect pore water pressure and groundwater levels.

The piezometer readings show no groundwater to 35 feet, though the clay soil was very moist, which indicates that there could be a perched layer of groundwater between 13 and 27 feet. The perched layer of groundwater is most challenging for Alternative B, because UDOT would need a way to transport the water that comes to the back of the trench walls to the face of the walls and then move the water away for proper handling. A detailed hydrogeologic study would be needed to definitively describe the groundwater flow conditions in the construction area for Alternative B if this alternative is carried forward for detailed analysis in the EIS.

UDOT will also evaluate the depth of groundwater at the pedestrian tunnels for Alternatives A and C if they are carried forward for detailed analysis in the EIS.

## Drainage and Flood Risk

For all alternatives, UDOT conducted preliminary design of drainage features that would remove stormwater runoff from the roadway. Unlike with Alternatives A and C, designing drainage features for Alternative B would be extremely challenging because very deep pipes would be needed to drain stormwater runoff toward I-80. In addition, pumps would likely be needed since a blockage in the pipes could flood the depressed roadway section of Alternative B.

## Constructability

During the final design of the selected alternative, UDOT would create a maintenance of traffic plan to describe guidelines and directions for controlling traffic during construction to safely and efficiently move traffic through and around the construction zones. Based on the refined designs that were developed during this alternatives development and screening phase, UDOT assumes that the following would be issues during construction.

**Alternative A.** The estimated time to construct this alternative is 2 years. SR-224, Olympic Parkway, and Ute Boulevard would have shoulder closures during construction and lane closures during some phases of construction. The shoulder and lane closures would affect drivers' ability to make turning movements, would extend vehicle queue lengths at the traffic signals, and would require detouring pedestrian and bicyclist traffic along the trail system. The shoulder and lane closures would vary from overnight closures to several weeks depending on construction activity.

The I-80 ramps would be reconstructed with new profiles to tie into the proposed bridge across I-80. Temporary ramps would be built to accommodate traffic during construction. Ramp closures for up to 2 weeks would still be required to make appropriate tie-ins. The ramps would likely be closed one at a time to reduce traffic interruptions at Kimball Junction. When the ramps are closed, traffic would need to be detoured to the next or previous exit and use the existing frontage roads to get to Kimball Junction, which would increase congestion on the frontage roads and cause delays. Constructing the new bridge across I-80 could require lane closures on I-80 or occasional full closures overnight during key milestones for constructing the bridge.

**Alternative B.** The estimated time to construct this alternative is 3 years. The new northbound and southbound frontage roads on SR-224 would be constructed to the sides of the existing pavement. After the frontage roads are complete, traffic would be detoured onto them, and the existing lanes of SR-224 would be closed in the area of the depressed roadway. A trench for the depressed roadway would be excavated, and the proposed bridges at Ute Boulevard and Olympic Parkway would be placed over SR-224. During the trenching phase, Ute Boulevard and Olympic Parkway would be closed to east-west traffic across SR-224 until the bridges are completed, and Ute Boulevard and Olympic Parkway would be accessible only through right turns from the frontage roads. These bridges would be constructed at different times so that at least one crossing of SR-224 would remain open during construction. The Ute Boulevard and Olympic Parkway crossings would each be closed for 6 months. This phasing would require detours for drivers to access the local businesses and to access residences in the Kimball Junction area. Pedestrian and bike traffic would also be detoured around the area and would be unable to cross the trench until the bridges are complete. There would be 4-to-6-month shoulder closures on both the on- and off-ramps for I-80 while the ramps are being widened.

**Alternative C.** The estimated time to construct this alternative is one to 2 years. SR-224, Olympic Parkway, and Ute Boulevard would have shoulder closures during construction and lane closures during some phases of construction. The lane closures would affect drivers' ability to make turning movements, would extend vehicle queue lengths at the traffic signals, and would require detouring pedestrian and bicyclist traffic along the trail system. The shoulder and lane closures would vary from overnight closures to several weeks depending on construction activity. There would be 4-to-6-month shoulder closures on both the on- and off-ramps for I-80 while the ramps are being widened.

### 3.5 Evaluation of New Concepts Identified by the Public

During the public comment scoping period for the EIS, no new alternatives were suggested that hadn't already been evaluated during the Area Plan. However, several new concepts or variations on the three conceptual alternatives being evaluated in the EIS (Alternatives A, B, and C) were suggested. These suggested concepts were developed and evaluated to determine whether they would pass Level 3 screening. Table 3-3 describes the new concepts or variations on existing conceptual alternatives that were identified during the public comment period. As shown in Table 3-3, this evaluation determined that the public concepts would not meet the purpose of the project, would not maintain all existing traffic movements, and/or could not be feasibly designed to meet American Association of State Highway and Transportation Officials (AASHTO) standards,<sup>2</sup> which UDOT follows, or FHWA policy and guidance.<sup>3</sup>

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<sup>2</sup> AASHTO, *A Policy on Geometric Design of Highways and Streets*, 7th Edition, 2018.

<sup>3</sup> FHWA, *Policy on Access to the Interstate System*, May 22, 2017.

**Table 3-3. Evaluation of New Concepts Identified during the Public and Agency Comment Period**

Description	Evaluation
<p><b>Alternative B:</b> Consider roundabouts rather than lights for the east-west connections at Ute Boulevard and Olympic Parkway and consider how the roundabouts would work with pedestrian and bicyclist traffic.</p>	<p>Traffic modeling was performed on this concept. Specifically, based on the projected traffic in the area and guidance in National Cooperative Highway Research Program (NCHRP) Report 672, <i>Roundabouts: An Informational Guide, 2nd Edition</i>, the roundabouts would require three or more circulating lanes. A roundabout with three or more circulating lanes has a large footprint and is complex for drivers to navigate. Additionally, they are challenging for pedestrians to cross because drivers exiting the roundabout are less likely to yield. Finally, roundabouts with three or more lanes are not common, their functionality for traffic operations are unproven in the United States, and such a roundabout would not meet the expectations of local drivers or drivers visiting the area.</p> <p><b>The concept was eliminated because it would not meet the purpose of the project.</b></p>
<p><b>Alternative B:</b> Consider a one-way ring route that is raised over SR-224 around the four existing roundabouts. Ute Boulevard and Olympic Parkway would be over SR-224, and the ring road would allow right turns only. This concept removes the frontage roads between Ute Boulevard and Olympic Parkway.</p>	<p>Traffic modeling was performed on this concept. Specifically, eliminating the frontage roads between Ute Boulevard and Olympic Parkway would create congestion on internal neighborhood roads in Kimball Junction.</p> <p><b>The concept was eliminated because it would not meet the purpose of the project.</b></p>
<p><b>Alternative C:</b> Consider a flyover ramp (that is, a grade-separated ramp that crosses over the roadway it exits) from SR-224 to westbound I-80.</p>	<p>Traffic modeling was performed on this concept and the flyover alignment, and a preliminary profile was created to check clearances and slopes. The proposed flyover ramp would be on a third level above the existing I-80 bridge, and, to meet AASHTO Green Book<sup>a</sup> ramp maximum vertical grade standards, it would pass through the existing location of the pedestrian trail overpass over I-80. To be compatible with the flyover ramp, the trail overpass would need to be relocated about 1,100 feet to the west. The future westbound on-ramp would require minor widening for about 1,600 feet for proper merge distances to accommodate the new flyover lane.</p> <p>Traffic performance with Alternative C with Flyover in 2050 would be poor compared to Alternative C. Alternative C with Flyover combines the flyover traffic and the traffic turning right to travel east on I-80 into the right-most lanes on northbound SR-224. The combined traffic from both travel movements would create long lines of vehicles that would increase traffic delays at the Ute Boulevard and Olympic Parkway intersections on SR-224.</p> <p><b>The concept was eliminated because it would not meet the purpose of the project.</b></p>
<p><b>Alternative C:</b> Evaluate a slip ramp off eastbound I-80 at the truck parking area, known as the Eastbound Rest Area, to provide access to the park-and-ride lot.</p>	<p>The existing ramps at this location allow access to and from the rest area only, and because of this it isn't considered an "access to the Interstate System."<sup>b</sup> Providing additional access at this location would constitute adding an interchange (interstate access), which would subject it to additional guidelines. AASHTO Green Book<sup>a</sup> Section 10.9.5.3, <i>Interchange Spacing</i>, calls for 1-mile spacing between accesses in urban areas and 3-mile spacing in rural areas. The distance between the rest area exit ramp gore and the existing Kimball Junction exit ramp gore is 0.8 mile. FHWA would need to approve this new access and sign an exception waiver, and it is very unlikely to be approved.</p> <p><b>The concept was eliminated due to FHWA policy and guidance constraints.</b></p>

<sup>a</sup> AASHTO, *A Policy on Geometric Design of Highways and Streets*, 7th Edition, 2018

<sup>b</sup> FHWA, *Policy on Access to the Interstate System*, May 22, 2017

### 3.6 Refined Alternatives for Level 3 Screening

At the start of the alternatives refinement and screening process, UDOT conducted an initial traffic evaluation on the conceptual alternatives resulting from the Area Plan to determine whether they met applicable design criteria as well as the purpose of the project by screening for initial traffic measures for Level 3 screening. Based on initial traffic results, UDOT refined the conceptual alternative designs to establish an adequate number of lanes, median spacing, lane widths, and safe curve geometry for the proposed travel speeds and estimated travel demand. The alternatives were developed in enough detail to allow UDOT to use Summit County's Summit-Wasatch travel demand model version v1 – 2020-09-14 to forecast future traffic in 2050 for the roadway alternatives. Engineers also performed additional design work for horizontal and vertical alignments, right-of-way needs, intersection design, pedestrian and bicyclist accommodations, access design, and potential drainage designs including stormwater management. Access design included road, driveway, or parking lot revisions for properties that would be intersected by an alternative.

Based on this additional engineering, cut-and-fill lines (that is, the additional excavation and embankment area needed for construction) were also generated to estimate the footprint required to build each alternative (a 15-foot buffer was added to account for potential construction impacts and equipment access), and right-of-way lines were estimated. The footprint and right-of-way area were used to calculate impact values for Level 4 screening.

Table 3-4 describes the components of the refined alternatives, as well as a description of the No-Action Alternative, that moved into Level 3 screening. See Appendix A, *Conceptual Alternatives Resulting from the Area Plan and Refinements Made to Those Alternatives*, for engineering refinements for each alternative and Appendix C, *Refined Alternatives Exhibits*, for the engineering drawings of the refined alternatives carried through screening.

Table 3-4. Refined Alternatives for Level 3 Screening

Alt.	Description
No-Action Alternative	<p>With this alternative, no improvements would be made to the Kimball Junction interchange with I-80 or on SR-224 between the interchange and Olympic Parkway except for routine maintenance and the programmed improvement by UDOT to add dual northbound and southbound left-turn lanes at the Ute Boulevard/SR-224 intersection as well as SR-224 BRT improvements as identified in the SR-224 BRT Categorical Exclusion that was approved by the Federal Transit Administration in January 2023. Projects identified in the Mountainland Association of Governments' 2019–2050 regional transportation plan, except for the Kimball Junction Project, are assumed to have been constructed as part of the No-Action Alternative.</p>
Refined Alternative A	<p>Includes the following concepts:</p> <ul style="list-style-type: none"> <li>• Split diamond interchange with bridge crossings over I-80</li> <li>• One-way frontage roads north and south of I-80</li> <li>• Intersection improvements at the intersections of Ute Boulevard and Olympic Parkway with SR-224</li> <li>• Pedestrian tunnel just south of Ute Boulevard</li> <li>• Widened northbound and southbound lanes on SR-224 between Ute Boulevard and Olympic Parkway</li> <li>• Dual left-turn lanes on SR-224 at both Ute Boulevard and Olympic Parkway</li> <li>• Signalized intersection at Ute Boulevard/Landmark Drive to replace the existing roundabout</li> <li>• Additional lane eastbound on Newpark Boulevard from SR-224 to the Uinta Way roundabout (ends in right turn only)</li> </ul>
Refined Alternative B	<p>Includes the following concepts:</p> <ul style="list-style-type: none"> <li>• Interchange improvements</li> <li>• Additional lane added on I-80 eastbound off-ramp</li> <li>• Additional northbound right-turn lane at the SR-224 and I-80 interchange</li> <li>• Third lane added on the eastbound I-80 on-ramp from the SPUJ</li> <li>• SR-224 depressed from just north of Bear Cub Drive to the SR-224 and I-80 interchange</li> <li>• Grade-separated signalized intersections, including turn lanes, at Ute Boulevard and Olympic Parkway with bridges</li> <li>• One-way frontage roads east and west of depressed SR-224</li> <li>• Existing grade-separated pedestrian crossing near Olympic Parkway relocated to the south</li> <li>• Additional lane on the northbound approach at the Ute Boulevard/Landmark Drive roundabout</li> </ul>
Refined Alternative C	<p>Includes the following concepts:</p> <ul style="list-style-type: none"> <li>• Additional lane on I-80 eastbound off-ramp</li> <li>• Right-turn lane added from the eastbound I-80 off-ramp to Ute Boulevard</li> <li>• Additional northbound right turn lane at the SR-224 and I-80 interchange</li> <li>• Additional westbound through lane at the intersection of SR-224 and Ute Boulevard</li> <li>• Dual left-turn lanes on SR-224 at both Ute Boulevard and Olympic Parkway</li> <li>• Additional lane on the northbound approach at the Ute Boulevard/Landmark Drive roundabout</li> <li>• Additional lane eastbound on Newpark Boulevard from SR-224 to the Uinta Way roundabout (ends in right turn only)</li> <li>• Extended left-turn lane on westbound Ute Boulevard</li> <li>• Pedestrian tunnel added just south of Ute Boulevard and east-west crosswalks across SR-224 removed at Ute Boulevard and Olympic Parkway</li> <li>• Extended right-turn lane added on westbound Newpark Boulevard</li> <li>• Widened northbound and southbound lanes on SR-224 between Olympic Parkway and Ute Boulevard</li> </ul>



### 3.7 Level 3 Screening

The Level 3 screening process is based on the project’s purpose and need, which is summarized above in Section 3.3, *Summary of the Kimball Junction Project’s Purpose and Need (for Level 3 Screening)*. The project’s purpose is to address transportation-related safety and mobility for all users of the Kimball Junction area. The refined alternatives that passed Level 3 screening were determined to satisfy the project’s purpose and were then evaluated with Level 4 screening criteria to determine their expected impacts to key resources. Alternatives that do not satisfy the project’s purpose or that have unacceptable impacts were determined to not be reasonable.

The purpose of Level 3 screening was to identify alternatives that would meet the overall purpose of the project. Alternatives that were determined to not meet the overall purpose of the project were considered unreasonable for NEPA purposes and not practicable under the Clean Water Act and were not carried forward for further analysis in Level 4 screening.

During Level 3 screening, the refined alternatives resulting from the Area Plan process were screened using criteria based on the need to maintain or improve transit travel times through the evaluation area. The initial alternatives were screened against criteria pertaining to travel time, intersection level of service, percent served, length of vehicle queues, level of traffic stress, and walking and transit travel times (Table 3-5). To accommodate Level 3 screening, UDOT developed the initial refined alternatives in enough detail to allow UDOT to use the Summit-Wasatch travel demand model to forecast the future traffic volumes and associated congestion for the evaluation area. Appendix D, *Kimball Junction EIS Traffic Memorandum*, includes the traffic and active transportation modeling methodology, data, and figures used for Level 3 screening.

Note that no single Level 3 screening criterion is more important than another. In Level 3 screening, criteria and measures used for vehicle traffic are equally as important as criteria and measures used for active transportation. An alternative must pass each measure to pass Level 3 screening, and the 2050 no-action measurement is used as the basis (that is, the resulting measure needs to be better than the transportation conditions in 2050 without the proposed improvements to the Kimball Junction interchange).

#### What is a travel demand model?

A travel demand model is a computer model that predicts the number of transportation trips (travel demand) in an area at a given time. This prediction is based on the expected population, employment, household, and land-use conditions in the area. The travel demand model used for the Kimball Junction Project is maintained by the Mountainland Association of Governments.

Table 3-5. Level 3 Screening Criteria – Purpose and Need

Criterion	Measure	Data Used
Improving operations and travel times on SR-224 from the I-80 interchange through Olympic Parkway	Does the alternative provide reliable through-traffic travel time on SR-224 during the AM and PM peak hours? (yes/no)	Travel time (look at average speeds on SR-224 to equate to arterial LOS)
	Meets a level of service of LOS D for as many intersections as possible.	Intersection LOS (overall LOS and turning LOS) <sup>a</sup>
	Is the percent served improved during the AM and PM peak hours? (yes/no)	Percent served <sup>b</sup>
Improving safety by eliminating vehicle queues on I-80 off-ramps	Are the off-ramp vehicle queue lengths eliminated on I-80 mainline through lanes? (yes/no)	Length of vehicle queue (feet)
Improving pedestrian and bicyclist mobility and accessibility throughout the evaluation area	Does the level of traffic stress improve in the vicinity of SR-224? (yes/no) <sup>c</sup>	Level of traffic stress <sup>c</sup>
	Do the walk times improve for key origin-destination pairs? (yes/no) <sup>d</sup>	Walk times
Maintaining or improving transit travel times through the evaluation area	Does the alternative maintain or improve the SR-224 BRT transit travel times through the evaluation area? (yes/no)	Travel times

Definitions: AM = morning; BRT = bus rapid transit; LOS = level of service; LTS = level of traffic stress; O-D = origin-destination; PM = afternoon

- <sup>a</sup> Level of service is a measure of the operating conditions on a road or at an intersection. Level of service is represented by a letter “grade” ranging from A (free-flowing traffic and little delay) to F (extremely congested, stop-and-go traffic and excessive delay). LOS B through LOS E represent progressively worse operating conditions.
- <sup>b</sup> Percent served is the percent of traffic demand that can move through the transportation network during the analysis period as measured by a traffic analysis model.
- <sup>c</sup> Level of traffic stress (LTS) is a 1-to-4 rating for the amount of traffic stress imposed on bicyclists or pedestrians on a transportation facility. LTS 1 represents the least stress, and LTS 4 represents the most stress.
- <sup>d</sup> An origin-destination pair (also referred to as a travel time pair) is a selected beginning and ending point for a trip on the transportation network.

### 3.7.1 Level 3 Screening Results

Table 3-6 shows the final Level 3 screening results. Traffic modeling data and figures for these refined alternatives are included in Appendix D, *Kimball Junction EIS Traffic Memorandum*.

Table 3-6 also shows limited results for the conceptual Alternative B resulting from the Area Plan (prior to refinements), since that conceptual alternative required the most refinements of the three alternatives. Initial traffic results showed that the conceptual Alternative B, as defined in the Area Plan, would not meet the Level 3 screening traffic criteria. As shown in Table 3-6, multiple intersections would fail, and vehicle queues would back onto the I-80 mainline. At this point, the design of Alternative B was refined to determine whether Alternative B could operate with better traffic metrics and thereby pass Level 3 screening. The conceptual Alternative B resulting from the Area Plan was not evaluated for the remaining Level 3 screening metrics since it failed initial screening measures and was not evaluated further during the alternatives screening process. The concept of the depressed roadway with frontage roads is consistent with both the conceptual and refined Alternative B, even though the refined Alternative B has a wider footprint.

As shown in Table 3-6, although the refined Alternative B meets traffic criteria, it does not improve pedestrian and bicyclist mobility and accessibility throughout the evaluation area compared to the No-Action Alternative, and therefore it does not meet the overall purpose of the project. Alternatives that are determined to not meet the purpose of the project are typically considered unreasonable for NEPA purposes. The refined Alternatives A and C both met the purpose of the project by performing better than the No-Action Alternative for all Level 3 screening measures.

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Table 3-6. Level 3 Screening Results

Criterion	Level 3 Screening: Purpose and Need						
	Improve operations and travel times on SR-224 from I-80 interchange through Olympic Parkway			Improve safety by eliminating vehicle queues on I-80 off-ramps	Maintain or improve transit travel times through the evaluation area	Improve pedestrian and bicyclist mobility and accessibility throughout the evaluation area	
Measure	Provides reliable through-traffic travel time on SR-224 during the AM and PM peak hours? (yes/no) <sup>a</sup>	Meets a level of service of LOS D for as many intersections as possible <sup>b</sup>	Is the percent served improved during the AM and PM peak hours? (yes/no) <sup>c</sup>	Are the off-ramp vehicle queue lengths eliminated on I-80 mainline through lanes? (yes/no)	Does the alternative maintain or improve the SR-224 BRT transit travel times through the evaluation area? (yes/no)	Does the level of traffic stress improve in the vicinity of SR-224? (yes/no) <sup>d</sup>	Do the walk times improve for key origin-destination pairs? (yes/no) <sup>e</sup>
What does this mean for me?	I'm not stuck in slow-moving traffic	I'm not sitting through multiple light cycles all the time	I'm able to travel through the area	Traffic isn't backed up on the I-80 mainline	Public transportation will work more efficiently	Pedestrians and bicyclists have higher level of comfort	Pedestrians and bicyclists can travel better in the area
Measure	Travel time (average speed in mph)	Number of intersections at LOS E or F	Percent served	Length of vehicle queue	Total BRT travel time (NB+SB, AM+PM) savings from no-action (min:sec)	Level of traffic stress	Total walk time savings from no-action for 4 O-D pairs (min:sec)
<b>Existing Conditions (2022)</b>	AM SB – 6:15 (17) PM NB – 7:45 (13)	AM – 1 PM – 2	99% (AM and PM)	2,600 feet	Not applicable	SR-224 trail – LTS1 SR-224 intersections – LTS3	53:30
<b>2050 No-Action Alternative</b>	AM SB – 11:30 (9) PM NB – 9:30 (11)	AM – 1 PM – 5	86% (AM and PM)	>5,000 feet	16:30	SR-224 trail – LTS1 SR-224 intersections – LTS3	54:00
<b>Alternative A (Refined)</b> Split Diamond Interchange with Intersection Improvements	<b>Yes:</b> AM SB – 4:30 (25) PM NB – 4:15 (23)	AM – 1 PM – 0	<b>Yes:</b> 100%	<b>Yes:</b> 600 feet	14:00 <b>Yes</b> (–2:30)	<b>Yes:</b> SR-224 pedestrian tunnel improves Ute Boulevard crossing to LTS1	52:30 <b>Yes</b> (–1:30)
<b>Alternative B (Conceptual) resulting from the Area Plan</b> <i>(not fully evaluated because intersections fail)</i>	Not evaluated	AM – 2 PM – 8	<b>No:</b> 92% AM, 79% PM	<b>No:</b> >5,000 feet	Not evaluated	Not evaluated	Not evaluated
<b>Alternative B (Refined)</b> Grade-separated Intersections with One-way Frontage Roads to the I-80 Interchange	<b>Yes:</b> AM SB – 3:15 (33) PM NB – 2:45 (37)	AM – 0 PM – 0	<b>Yes:</b> 100%	<b>Yes:</b> 900 feet	14:15 <b>Yes</b> (–2:15)	<b>No (Same as No-Action):</b> SR-224 trail – LTS1 SR-224 intersections – LTS3	57:45 <b>No</b> (+3:45)
<b>Alternative C (Refined)</b> Intersection Improvements with Pedestrian Enhancements	<b>Yes:</b> AM SB – 3:15 (33) PM NB – 3:45 (26)	AM – 0 PM – 0	<b>Yes:</b> 100%	<b>Yes:</b> 400 feet	14:30 <b>Yes</b> (–2:00)	<b>Yes:</b> SR-224 pedestrian tunnel improves Ute Boulevard crossing to LTS1	53:45 <b>Yes</b> (–0:15)

Definitions: AM = morning; BRT = bus rapid transit; LOS = level of service; LTS = level of traffic stress; min:sec = minutes:seconds; mph = miles per hour; NB = northbound; O-D = origin-destination; PM = afternoon; SB = southbound

- <sup>a</sup> The AM and PM peak hours are the 1-hour periods of the morning and afternoon, respectively, during which there is the greatest number of vehicles on the roadway system. The peak hours that were modeled in the analysis were 8:00 to 9:00 AM and 4:00 to 5:00 PM.
- <sup>b</sup> Level of service (LOS) is a measure of the operating conditions on a road or at an intersection. Level of service is represented by a letter “grade” ranging from A (free-flowing traffic and little delay) to F (extremely congested, stop-and-go traffic and excessive delay). LOS B through LOS E represent progressively worse operating conditions.

- <sup>c</sup> Percent served is the percent of traffic demand that can move through the transportation network during the analysis period as measured by a traffic analysis model.
- <sup>d</sup> Level of traffic stress (LTS) is a 1-to-4 rating for the amount of traffic stress imposed on bicyclists or pedestrians on a transportation facility. LTS 1 represents the least stress, and LTS 4 represents the most stress. Note that LTS was measured for the entire Kimball Junction area active transportation network. Most of the network stays the same under all scenarios; that is, there would be no change from existing conditions and the No-Action Alternative. This table reports only those network measures that are different from existing conditions and the No-Action Alternative.
- <sup>e</sup> An origin-destination (O-D) pair (also referred to as a travel time pair) is a selected beginning and ending point for a trip on the transportation network.

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### 3.8 Level 4 Screening

As a result of Level 3 screening, two refined alternatives (Alternatives A and C) were determined to meet the purpose of the project and therefore were advanced to Level 4 screening. Refined Alternative B was determined not to meet the project purpose because, compared to the No-Action Alternative, it would increase pedestrian and bicycle travel time. In addition, pedestrian and bicyclist comfort would be the same as with the No-Action Alternative but would not be improved. However, because Refined Alternative B had the best performance of the three alternatives with regard to vehicle travel times and speeds, UDOT still evaluated Refined Alternative B in Level 4 screening. The purpose of Level 4 screening was to eliminate alternatives that perform similarly in meeting the purpose of the project compared to other alternatives but would result in greater impacts. During Level 4 screening, UDOT collectively evaluated the refined alternatives that passed Level 3 screening against criteria that focus on the alternative’s impacts to the natural and built environment, including property acquisitions and relocations and estimated project costs. Table 3-7 lists the Level 4 screening criteria.

Table 3-7. Level 4 Screening Criteria and Measures

Criterion	Measure
Threatened and endangered species	<ul style="list-style-type: none"> <li>• Acres and types of habitat</li> </ul>
Waters of the United States	<ul style="list-style-type: none"> <li>• Acres and types of aquatic resources</li> <li>• Linear feet of creeks affected</li> </ul>
Section 4(f) resources	<ul style="list-style-type: none"> <li>• Number and type of Section 4(f) uses</li> </ul>
Relocations	<ul style="list-style-type: none"> <li>• Number of potential residential or business relocations</li> </ul>
Land use	<ul style="list-style-type: none"> <li>• Compatibility with current land use plans (yes/no)</li> </ul>
Cost	<ul style="list-style-type: none"> <li>• Estimated project cost</li> </ul>

The overall process for Level 4 screening was as follows:

- Estimate the impacts on key resources of each refined alternative.
- Evaluate the alternatives’ costs.
- Consider additional logistical considerations and overall feasibility.
- Determine whether any of the alternatives would have substantially greater impacts or costs without having substantially greater benefits in meeting the purpose of the project.

**Estimate Impacts to Key Resources and Private Property.** Using geographic information systems (GIS) software, UDOT estimated how each refined alternative that passed Level 3 screening might affect key resources such as threatened and endangered species, wetlands and other potential waters of the United States, and Section 4(f) resources. The expected impacts were determined by overlaying the estimated right-of-way for each alternative over the GIS datasets for these resources. UDOT used the same approach to identify the potential property acquisitions and relocations. For alternatives that are carried forward for analysis in the EIS, UDOT will conduct additional engineering refinement and resource impact analysis. For more information about Section 4(f) resources and the Clean Water Act, see Section 3.2, *Reasons Why an Alternative Might Be Eliminated during the EIS Screening Process (Levels 3 and 4 Screening)*.

**Compare Impacts and Costs to Benefits.** UDOT used the screening results to determine whether any of the refined alternatives would have substantially greater impacts to key resources or costs without having substantially greater benefits in meeting the purpose of the project. Alternatives that would have the same or similar benefits as other alternatives but would have substantially greater impacts or costs were eliminated and considered unreasonable for NEPA purposes.

### 3.8.1 Level 4 Screening Results

The Level 4 screening results for each criterion are described below and summarized in Table 3-8. Table 3-9 provides a breakdown of the cost components for each alternative.



Table 3-8. Level 4 Screening Results

Criterion or Alternative	Level 4 Screening: Cost and Impacts to the Built and Natural Environment					
	Threatened and Endangered Species	Wetlands and Waters of the United States	Section 4(f) Resources	Land Use	Relocations	Cost
What does this mean for me?	How would this impact protected plant and animal species in the area?	How would this impact federally protected wetlands and waters?	Would lands from a historic site or protected public resources be affected?	Would it meet the community's land use goals?	Would there be potential property impacts to community members?	How much would it cost to build?
Measure	Acres	Acres and types of aquatic resources (ditches, open water, wetlands, and perennial streams)	Number and type of Section 4(f) uses	Compatibility with current land use plans	Number of potential residential or business relocations	Construction cost estimate (\$2023)
<b>Existing Conditions (2022)</b>	—	—	—	—	—	—
<b>No-Action Alternative</b>	—	—	—	—	—	—
<b>Alternative A (Refined)</b> Split Diamond Interchange with Intersection Improvements	0	Ditch – 0.010 Open Water – 0.060 Wetland – 0.061 Perennial Stream – 0 <b>Total impacts – 0.131</b>	0	Yes	0	\$108M
<b>Alternative B (Refined)</b> Grade-separated Intersections with One-way Frontage Roads to the I-80 Interchange	0.001	Ditch – 0.102 Open Water – 0.015 Wetland – 0.065 Perennial Stream – 0.004 <b>Total impacts – 0.186</b>	0	No	3 business 0 residential	\$201M
<b>Alternative C (Refined)</b> Intersection Improvements with Pedestrian Enhancements	0.001	Ditch – 0.009 Open Water – 0 Wetland – 0.001 Perennial Stream – 0.002 <b>Total impacts – 0.012</b>	0	Yes	0	\$41M

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**Table 3-9. Costs by Alternative**

In 2023 dollars

<b>Alternative Cost Category</b>	<b>Alternative A (Refined) Split Diamond Interchange with Intersection Improvements</b>	<b>Alternative B (Refined) Grade-separated Intersections with One-way Frontage Roads to the I-80 Interchange</b>	<b>Alternative C (Refined) Intersection Improvements with Pedestrian Enhancements</b>
Right-of-way (strip takes)	\$34,000,000	\$12,130,000	\$2,200,000
Right-of-way (relocations)	\$0	\$16,300,000	\$0
Roadway/structure	\$50,300,000	\$71,600,000	\$16,900,000
Utilities	\$11,500,000	\$17,900,000	\$5,900,000
Drainage	\$8,200,000	\$19,900,000	\$3,700,000
Traffic control and maintenance of traffic	\$2,100,000	\$10,200,000	\$800,000
Miscellaneous (CE, PE, and contingency)	\$32,000,000	\$53,700,000	\$11,300,000
<b>Total cost</b>	<b>\$107,900,000</b>	<b>\$200,400,000</b>	<b>\$40,600,000</b>

Definitions: CE = construction engineering phase; PE = preliminary engineering phase

**Threatened and Endangered Species.** All three refined alternatives are substantially the same in terms of their impacts to threatened and endangered species (TES). Alternative A would have no impacts to TES habitat, and Alternatives B and C would have negligible (0.001 acre) impacts to TES habitat.

**Waters of the United States.** Waters of the United States (WOTUS) are protected by Section 404 of the Clean Water Act. A Section 404 permit from the U.S. Army Corps of Engineers (USACE) is required for projects that would impact WOTUS. Water quality impacts to WOTUS are considered by USACE in its permitting process. USACE cannot issue a permit if a practicable alternative exists that would have less adverse impacts. Table 3-8, *Level 4 Screening Results*, above summarizes the potential WOTUS that would be intersected by the three alternatives. Wetland delineation fieldwork was finalized in the summer and fall of 2023 and is based on wetland delineation data that were collected in accordance with applicable USACE delineation standards. Although the refined Alternatives A and B would be substantially the same in terms of their impacts to WOTUS, the refined Alternative B would have 0.05 acre more impacts. Alternative C would have the smallest impacts to WOTUS at 0.012 acre. Although there is no threshold for jurisdictional status, USACE typically considers impacts under 0.5 acre to be minimal if mitigation is incorporated (if required); from 0.5 to 1 acre is considered minor; and 1 acre or more is considered significant.<sup>4</sup>

**Section 4(f) Resources.** None of the refined alternatives would have a Section 4(f) use.

<sup>4</sup> USACE Sacramento District, "Permitting Overview," <https://www.spk.usace.army.mil/Missions/Regulatory/Permitting>.

**Land Use.** The *Kimball Junction Neighborhood Master Plan*<sup>5</sup> identifies several potential transportation-related opportunities for enhancing Kimball Junction’s built environment, including improving the flow of the regional through traffic; re-establishing a traditional, neighborhood building-street pattern; and improving overall neighborhood connectivity and walkability. Key transportation-related components of the neighborhood master plan are to improve regional north-south vehicle flow through the Kimball Junction neighborhood as well as to enhance safe pedestrian, bicycle, transit, and vehicle connections between the east and west sides of the neighborhood and beyond.

When reviewing the neighborhood master plan as part of Level 4 screening, UDOT considered consistency with several opportunities in the plan related to multimodal transportation, including improving the flow of the regional through traffic and improving overall neighborhood connectivity and walkability. All three refined alternatives meet the goal of improving the flow of regional through traffic, as shown in the Level 3 screening results.

The refined Alternatives A and C would both add a new proposed pedestrian tunnel under Ute Boulevard and, therefore, combined with the existing pedestrian tunnel at Olympic Parkway, would further help connect the neighborhoods on each side of SR-224 and enhance walkability in the area. With the refined Alternative B, pedestrians and cyclists would need to cross the two-plus-lane frontage roads (that is, two travel lanes between Ute Boulevard and Olympic Parkway as well as the taper required for left- and right-turn lanes at the intersections). This lane configuration (four lanes at the intersections) would not meet the objective of a seamlessly connected neighborhood as well as the other two refined alternatives would. Alternative B would be partially compatible with the Kimball Junction neighborhood plan but would not improve pedestrian and bicyclist connections as well as Alternatives A and C because of the wider cross section of the Alternative B design.

None of the refined alternatives would disrupt current zoning, and all three alternatives would adequately accommodate transit travel times. All three alternatives would convert some land zoned for non-transportation uses to a transportation use; however, Alternative B would have the most impact on commercially zoned properties and would convert the most land to a transportation use. Future land use plans in the area are not well defined, so it’s unclear whether any one of the refined alternatives would disrupt or better meet future land use plans.

**Property Acquisition and Relocations.** UDOT analyzed each refined alternative for its potential impacts to residential and commercial property and construction costs. For screening purposes, *relocations* were identified as properties with large potential impacts where the alternative would intersect with structures on the parcel and change the primary use, access, or function of the parcel, or there would be no useable remainder.

If an action alternative that requires acquisitions is ultimately selected in the project’s Record of Decision, UDOT would work with property owners to acquire the right-of-way. Properties would be acquired in accordance with the federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970<sup>6</sup>; Title VI of the Civil Rights Act of 1964, as amended; and the State of Utah Relocation Program (under the Utah Relocation Assistance Act, Utah Code, Section 57-12).

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<sup>5</sup> Summit County, *Kimball Junction Neighborhood Master Plan*, <https://summitcounty.org/DocumentCenter/View/9150/Kimball-Junction-Neighborhood-Plan-20-4-24-19?bidId=>, 2019.

<sup>6</sup> This is a federal law that establishes minimum standards for federally funded programs and projects that require the acquisition of property or that displace persons from their homes, businesses, or farms.

The refined alternatives would require the following property acquisition and relocations.

- Alternative A (Refined) would impact parking at the Taco Bell but would not require any businesses relocations. About 2 parking spaces (out of 21 spaces) at the Taco Bell would be removed to reconstruct the Landmark Drive intersection, but the parking impacts would not be great enough to make the business inoperable.
- Alternative B (Refined)'s footprint is twice as large as that of the other refined alternatives, and it would require three business relocations: McDonald's, Mister Car Wash, and Wells Fargo Bank. More than 50% of the McDonald's parking would be removed, and the drive-through at both McDonald's and Wells Fargo Bank would be removed. The driveway access to Mister Car Wash from SR-224 would be removed to construct a ramp, which would eliminate access to the car wash from SR-224 and require a major circulation change at the car wash. This elimination of access would likely make the business inoperable.
- Alternative C (Refined) would require minor property strip takes (acquisition of a strip of land on the edge of a parcel), but no relocations would be needed.

**Cost.** The potential property acquisitions of an alternative (described above) and its construction costs are included in its cost estimate. The construction cost was estimated at a high level for each refined alternative using standard assumptions of cost per lane-mile and per acre of right-of-way. Construction costs will be refined after design refinements are made as part of the EIS process. Table 3-9, *Costs by Alternative*, above summarizes the right-of-way and cost information by alternative.

Alternative B has the highest cost of the three refined alternatives for several reasons. The right-of-way and property impacts shown in Table 3-9 above are predictably greater for the refined Alternative B because it has a wider footprint along SR-224 compared to refined Alternatives A and C. Alternative B also has structures to grade-separate the through lanes at Ute Boulevard and Olympic Parkway and 1,800 feet of retaining walls on both sides of the depressed roadway section.

Alternative A would cost less than Alternative B but more than Alternative C. This is due to the additional bridge, partial interchange, and one-way frontage roads west of the existing Kimball Junction interchange. Alternative A also includes widening of Landmark Drive and adding a traffic signal in place of the existing traffic circle at the intersection of Ute Boulevard and Landmark Drive.

**Summary.** Because the refined Alternatives A and C would have similar levels of impacts, the Level 4 screening analysis did not give UDOT a reason to eliminate either alternative. Therefore, UDOT advanced both refined Alternatives A and C for detailed evaluation in the Draft EIS. Because the refined Alternative B does not meet the purpose of the project (because it failed Level 3 screening for pedestrian and bicyclist mobility and comfort) and would have the most WOTUS impacts, the most relocations, and the highest cost, it was not advanced for further evaluation in the Draft EIS.

### 3.9 Summary of the Results of the Alternatives Refinement and Level 3 and Level 4 Screening Process

Based on the results of the alternatives refinement and the Level 3 and Level 4 screening process, UDOT advanced the following alternatives for further study in the EIS:

- No-Action Alternative
- Alternative A (Refined)
- Alternative C (Refined)

Table 3-10 combines the Level 3 and Level 4 screening results.

Table 3-10. Alternatives Screening Summary

Criterion	Level 3 – Purpose and Need						Level 4 – Impacts and Cost					Cost
	Improve operations and travel times on SR-224 from I-80 interchange through Olympic Parkway		Improve safety by eliminating vehicle queues on I-80 off-ramps	Maintain or improve transit travel times through evaluation area	Does the level of traffic stress improve in the vicinity of SR-224? (yes/no) <sup>a</sup>	Improve pedestrian and bicyclist mobility and accessibility through evaluation area	Threatened and endangered species	Wetlands and waters of the United States	Section 4(f) resources	Land use	Relocations	
What does this mean for me?	I'm not stuck in slow-moving traffic	I'm not sitting through multiple light cycles all the time	Traffic isn't backed up on the I-80 mainline	Public transportation will work more efficiently	Pedestrians and bicyclists have higher level of comfort	Pedestrians and bicyclists can travel better in the area	How will this impact protected species in the area?	How will this impact federally protected wetlands and waters?	Would lands from a historic site or protected public resources be affected?	Would it meet our community land use goals?	Would there be potential property impacts to community members?	How much would it cost to build?
Measure	Travel time (average speed in mph)	Number of intersections at LOS E or F <sup>b</sup>	Length of vehicle queue	Total BRT travel time (NB+SB, AM+PM) savings from no-action (min:sec)	Level of traffic stress	Total walk time savings from no-action for 4 O-D pairs (min:sec) <sup>c</sup>	Acres	Acres and types of aquatic resources (ditches, open water, wetlands, and perennial streams)	Number and type of Section 4(f) uses	Compatibility with current land use plans	Number of potential residential or business relocations	Construction cost estimate (\$2023)
<b>Existing Conditions (2022)</b>	AM SB – 6:15 (17) PM NB – 7:45 (13)	AM – 1 PM – 2	2,600 feet	—	SR-224 trail – LTS1 SR-224 intersections – LTS3	53:30	—	—	—	—	—	—
<b>2050 No-Action Alternative</b>	AM SB – 11:30 (9) PM NB – 9:30 (11)	AM – 1 PM – 5	>5,000 feet	16:30	SR-224 trail – LTS1 SR-224 intersections – LTS3	54:00	—	—	—	—	—	—
<b>Alternative A (Refined)</b> Split Diamond Interchange with Intersection Improvements	AM SB – 4:30 (25) PM NB – 4:15 (23)	AM – 10 PM – 0	600 feet	-2:30	<b>Yes:</b> SR-224 pedestrian tunnel improves Ute Boulevard crossing to LTS1	52:30 (-1:30)	0	0.131	0	Yes	0	\$108M
<b>Alternative B (Refined)</b> Grade-separated Intersections with One-way Frontage Roads to the I-80 Interchange	AM SB – 3:15 (33) PM NB – 2:45 (37)	AM – 0 PM – 0	900 feet	-2:15	<b>No: Same as No-Action:</b> SR-224 trail – LTS1 SR-224 intersections – LTS3	57:45 (+3:45)	0.047	0.186	0	No	3	\$201M
<b>Alternative C (Refined)</b> Intersection Improvements with Pedestrian Enhancements	AM SB – 3:15 (33) PM NB – 3:45 (26)	AM – 0 PM – 0	400 feet	-2:00	<b>Yes:</b> SR-224 pedestrian tunnel improves Ute Boulevard crossing to LTS1	53:45 (-0:15)	0.001	0.012	0	Yes	0	\$41M

Definitions: AM = morning; BRT = bus rapid transit; LOS = level of service; LTS = level of traffic stress; min:sec = minutes:seconds; mph = miles per hour; NB = northbound; O-D = origin-destination; PM = afternoon; SB = southbound

<sup>a</sup> Level of traffic stress (LTS) is a 1-to-4 rating for the amount of traffic stress imposed on bicyclists or pedestrians on a transportation facility. LTS 1 represents the least stress, and LTS 4 represents the most stress. Note that LTS was measured for the entire Kimball Junction area active transportation network. Most of the network stays the same under all scenarios; that is, there would be no change from existing conditions and the No-Action Alternative. This table reports only those network measures that are different from existing conditions and the No-Action Alternative.

<sup>b</sup> Level of service (LOS) is a measure of the operating conditions on a road or at an intersection. Level of service is represented by a letter "grade" ranging from A (free-flowing traffic and little delay) to F (extremely congested, stop-and-go traffic and excessive delay). LOS B through LOS E represent progressively worse operating conditions.

<sup>c</sup> An origin-destination (O-D) pair (also referred to as a travel time pair) is a selected beginning and ending point for a trip on the transportation network.

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## **APPENDIX A**

### Conceptual Alternatives Resulting from the Area Plan and Refinements Made to Those Alternatives

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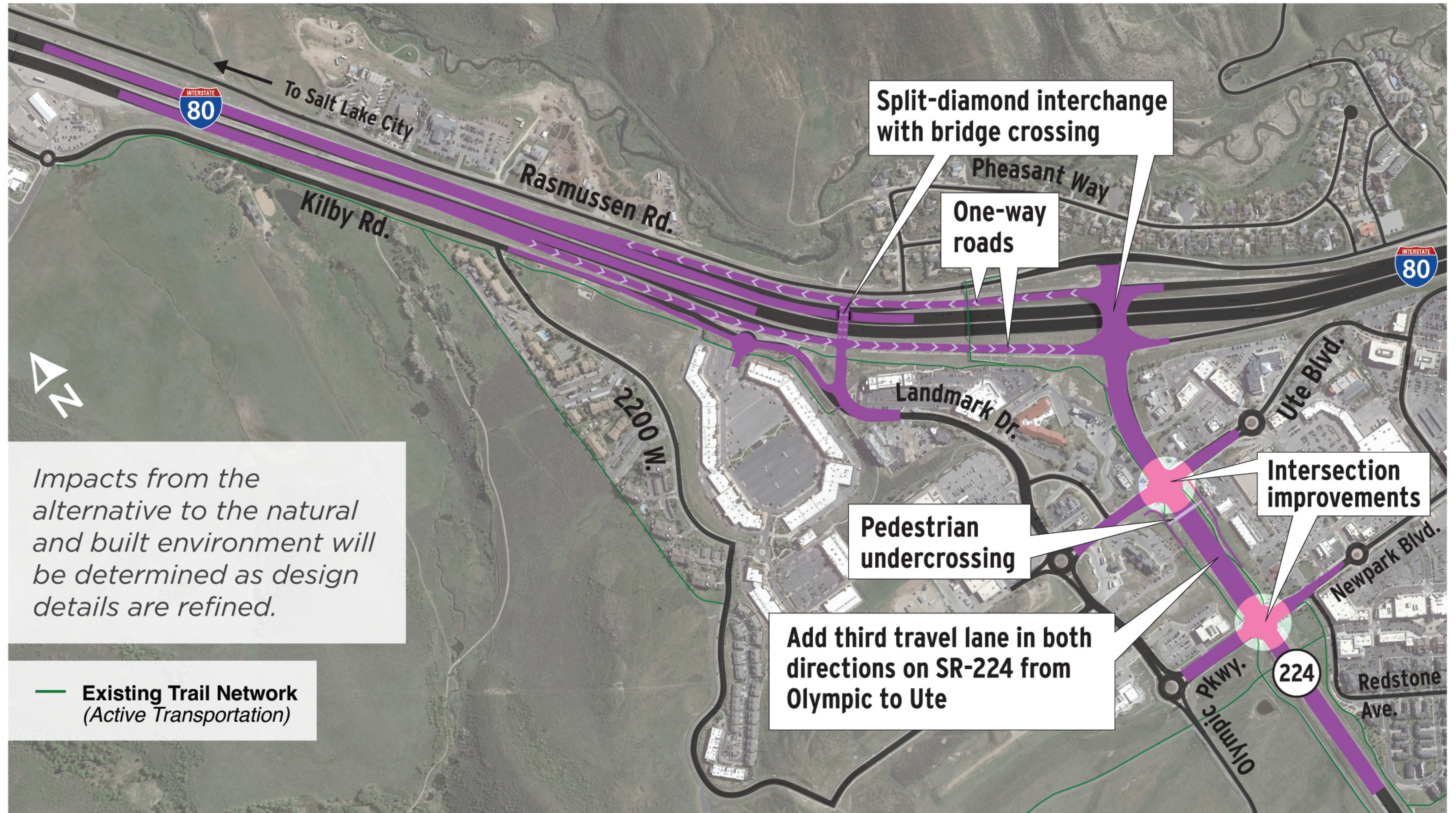
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## Conceptual Alternatives Resulting from the Area Plan

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# ALTERNATIVE A

## SPLIT-DIAMOND INTERCHANGE WITH INTERSECTION IMPROVEMENTS



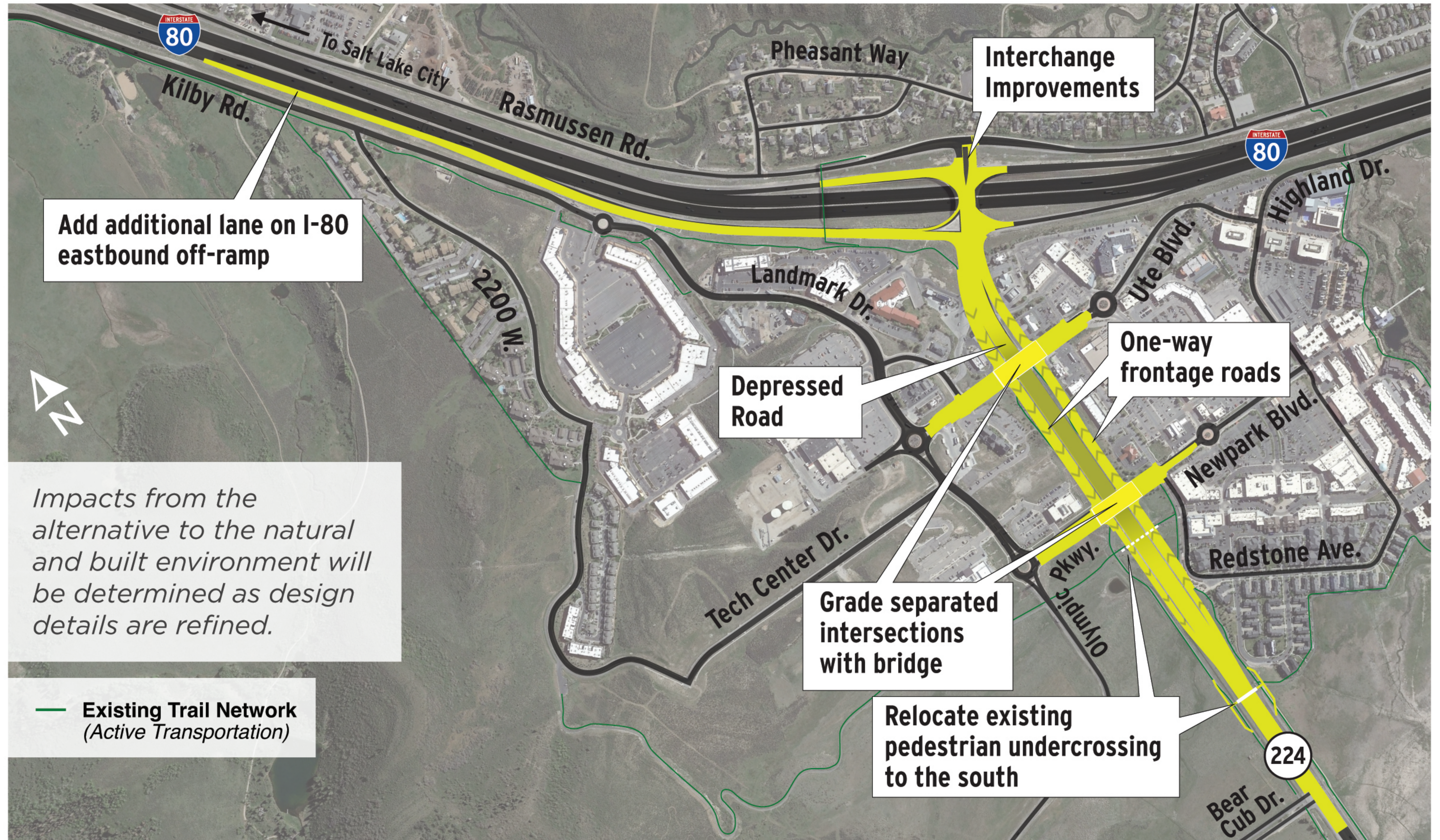
*Impacts from the alternative to the natural and built environment will be determined as design details are refined.*

**Existing Trail Network**  
(Active Transportation)

**Add third travel lane in both directions on SR-224 from Olympic to Ute**

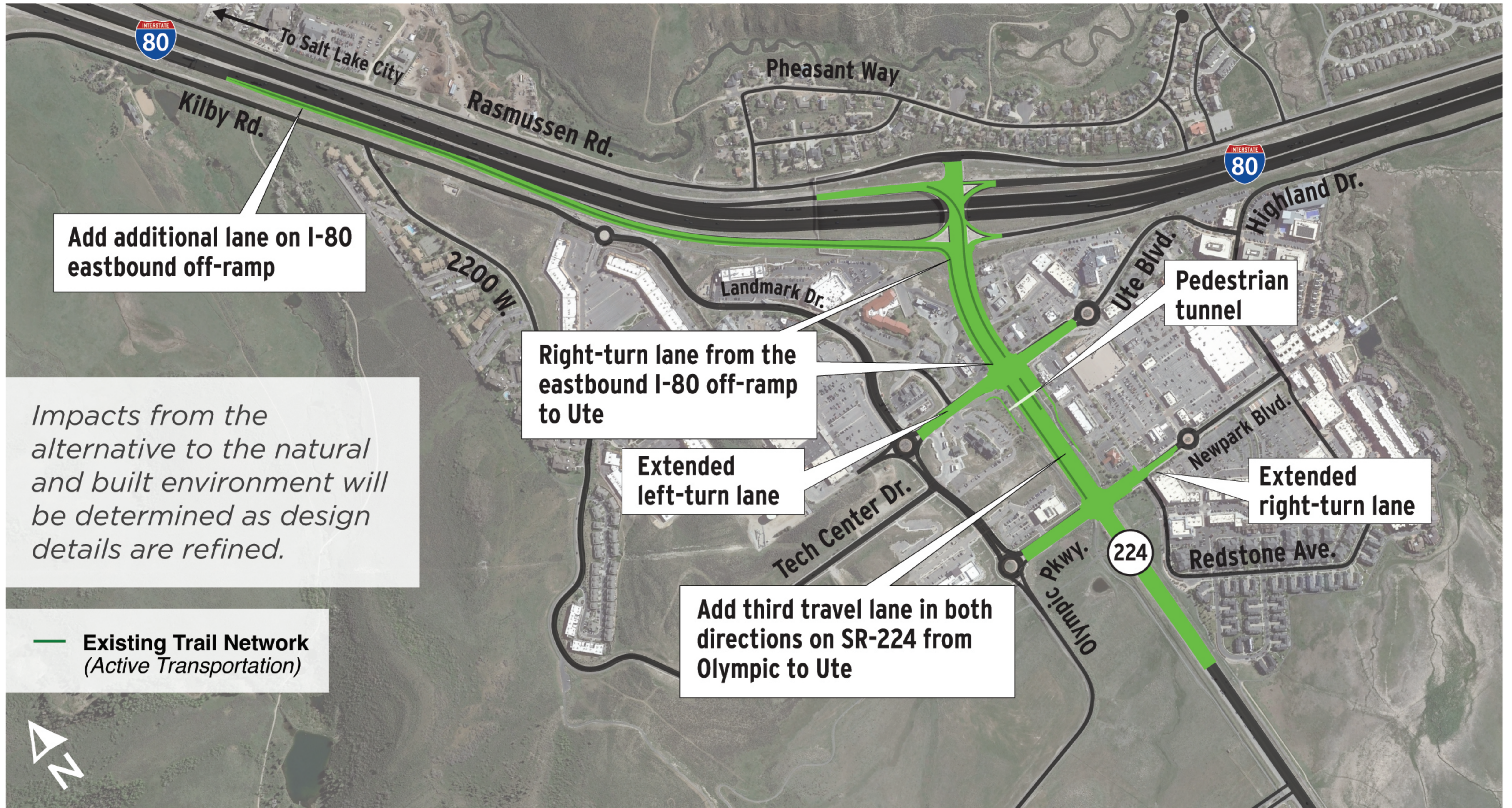
# ALTERNATIVE B

GRADE-SEPARATED INTERSECTIONS WITH ONE-WAY FRONTAGE ROADS TO THE I-80 INTERCHANGE



# ALTERNATIVE C

## INTERSECTION IMPROVEMENTS WITH PEDESTRIAN ENHANCEMENTS



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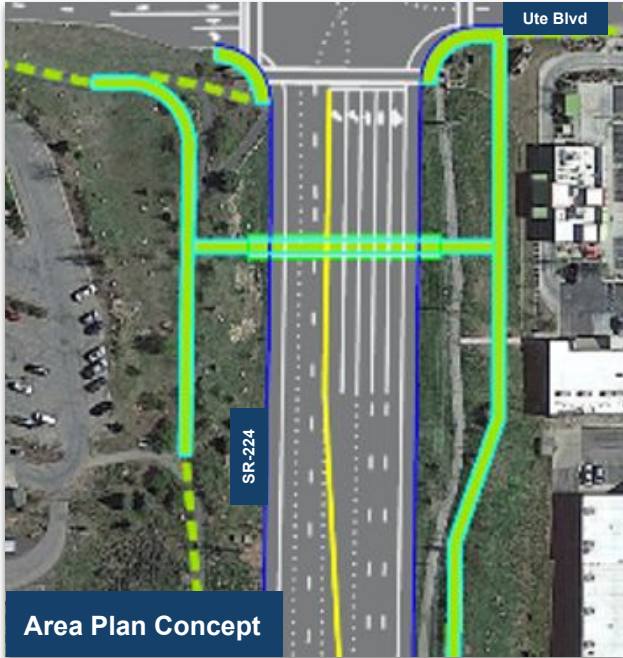


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Refinements Made to Conceptual Alternatives  
Resulting from the Area Plan

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# Refinements to Alternative A



North-South trail between Ute and Olympic shifted away from SR-224 and ped ramps lengthened based on aerial survey data



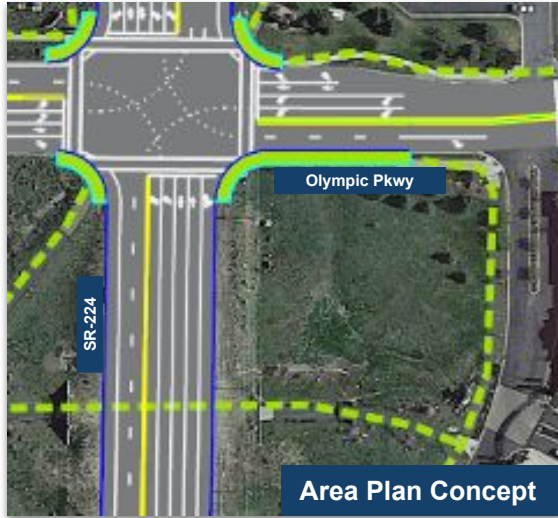
# Refinements to Alternative A



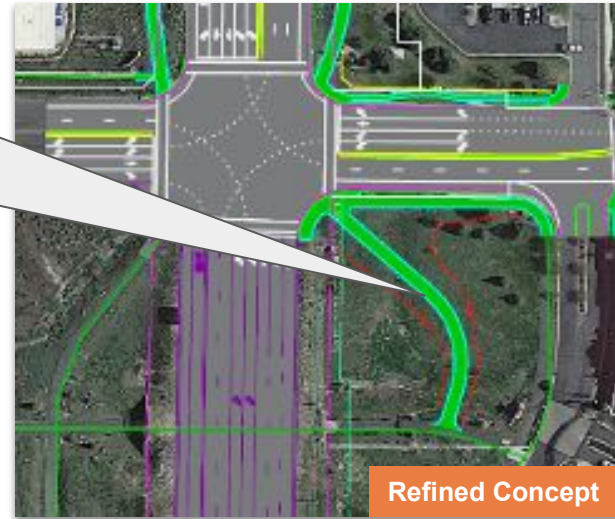
New eastbound lane from SR-224 to Olympic roundabout extended



# Refinements to Alternative A



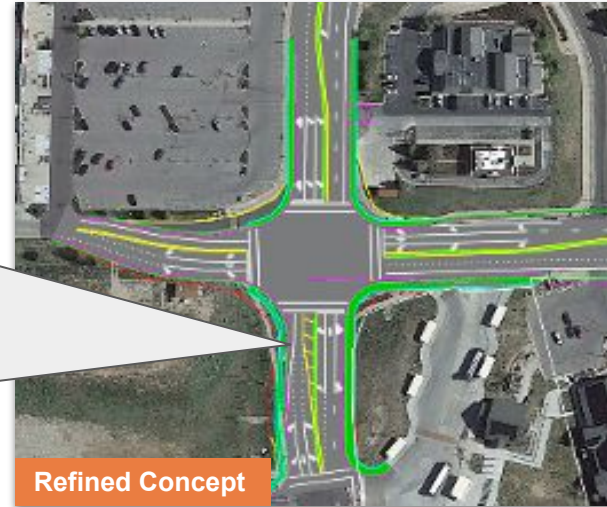
Trail connection added to southeast corner at Olympic



# Refinements to Alternative A



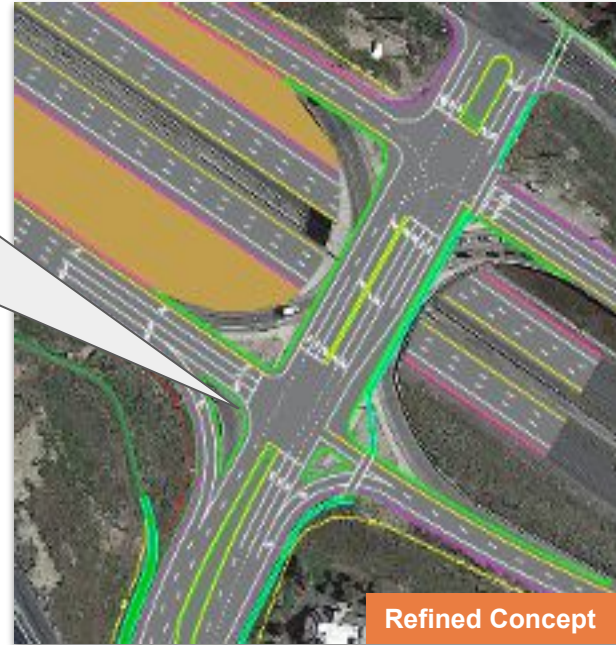
Roundabout at Ute/Landmark replaced with signalized intersection to accommodate increased traffic from half interchange



# Refinements to Alternative A



Minor turn lane reconfigurations at SPUI to add free rights at ramps



# Refinements to Alternative A



Frontage road  
realignment length  
reduced and turn  
lanes added on  
frontage roads  
around new  
western  
interchange



Area Plan Concept

Refined Concept



# Refinements to Alternative A



Area Plan Concept

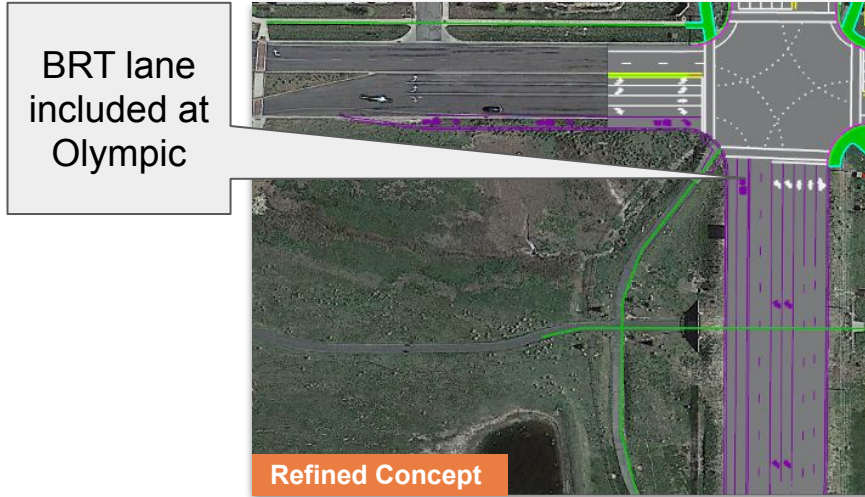
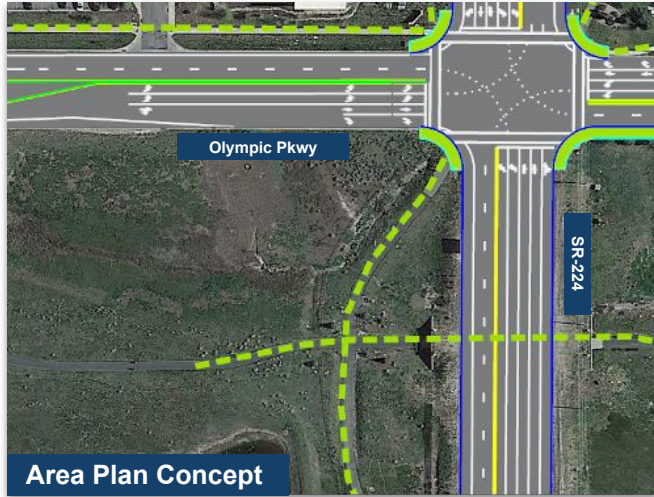
Northern ramp  
tie-in length  
reduced to  
provide  
additional space  
between rest  
area and  
off-ramp



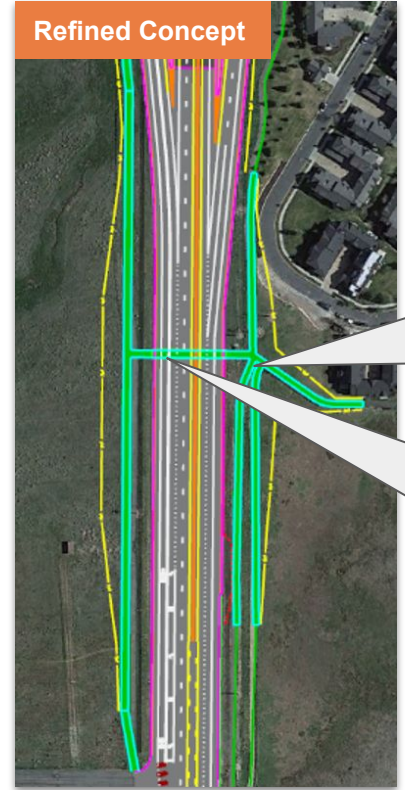
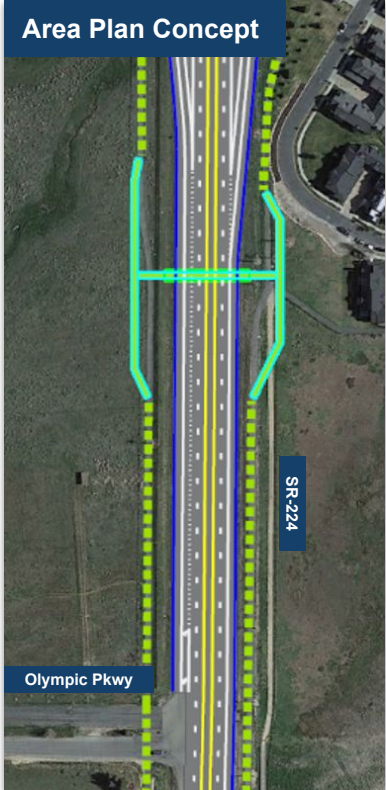
Refined Concept



# Refinements to Alternative A



# Refinements to Alternative B

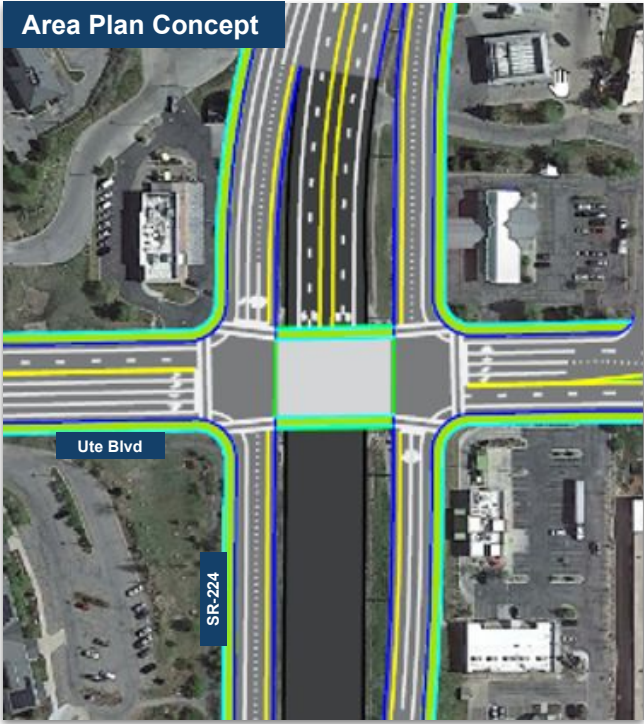


Updated exit lane configuration for northbound exit onto frontage road due to projected 2050 traffic growth

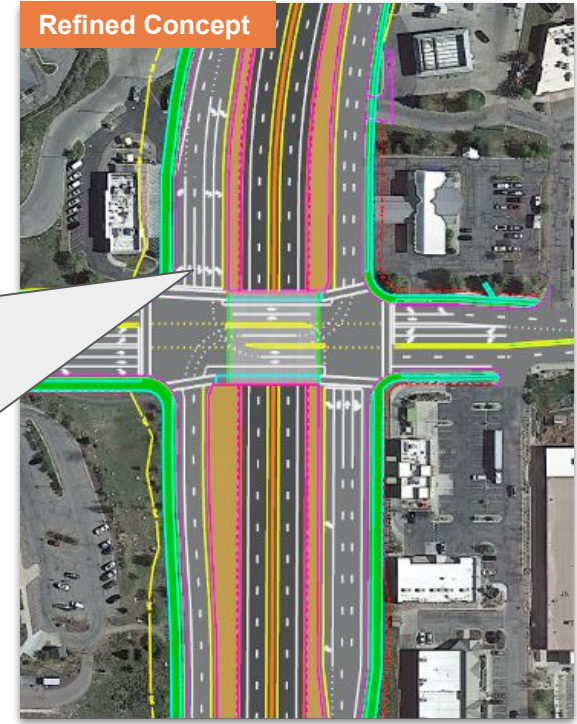
Relocated and refined pedestrian box south of Olympic and trail connections updated based on aerial survey data



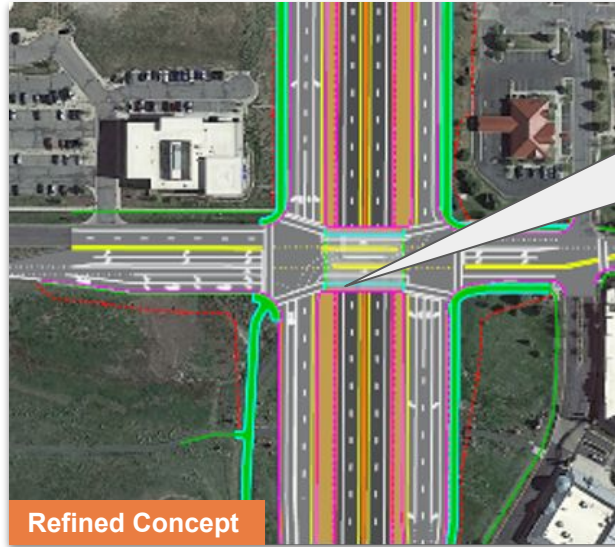
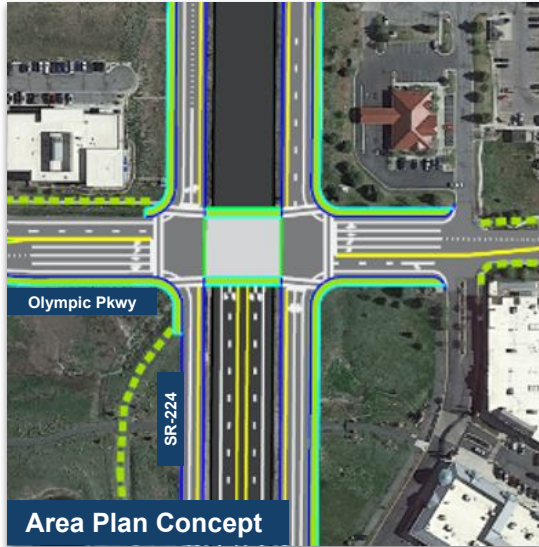
# Refinements to Alternative B



Turning and through lane configurations updated at Ute causing larger footprint to accommodate projected 2050 traffic growth



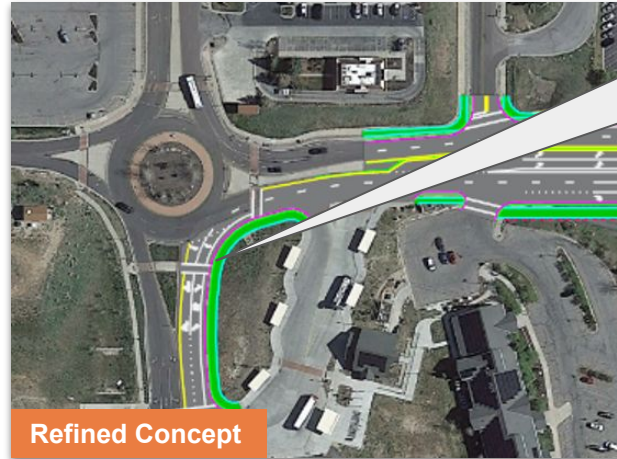
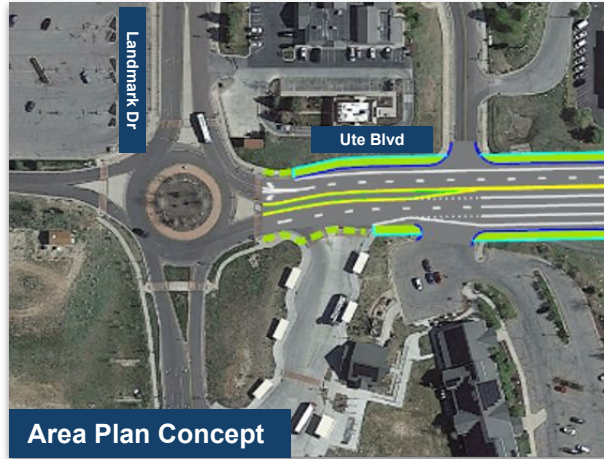
# Refinements to Alternative B



Turning and through lane configurations updated at Olympic causing larger footprint to accommodate projected 2050 traffic growth



# Refinements to Alternative B



New lane added to southern approach at Ute and Landmark roundabout



# Refinements to Alternative B



Modified right-turn lane reconfiguration

Added additional right-turn lane to I-80 due to projected 2050 traffic growth



# Refinements to Alternative B

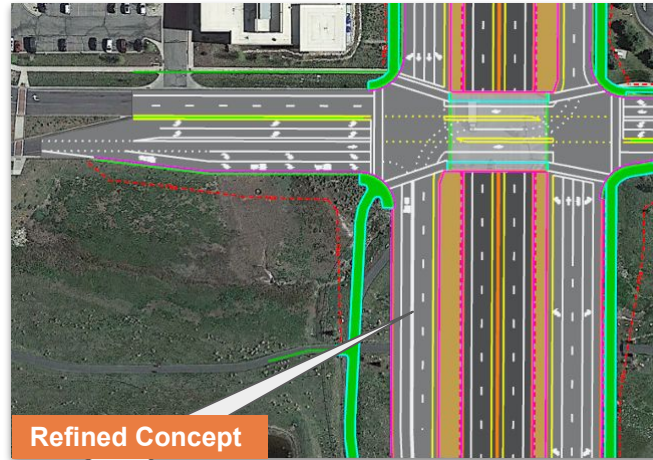
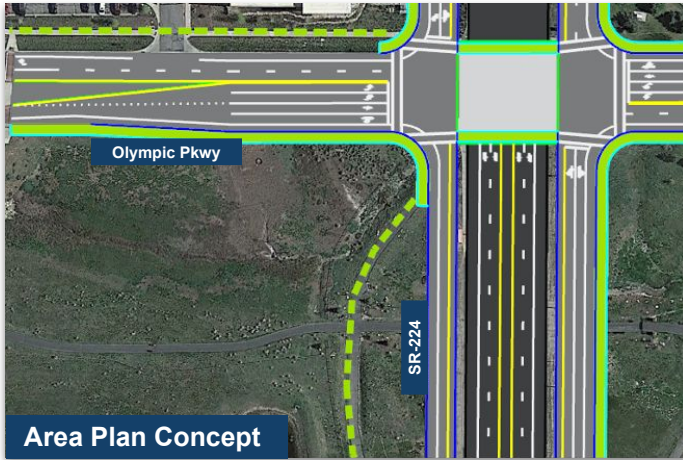


Added additional lane to on-ramp to accommodate projected traffic growth





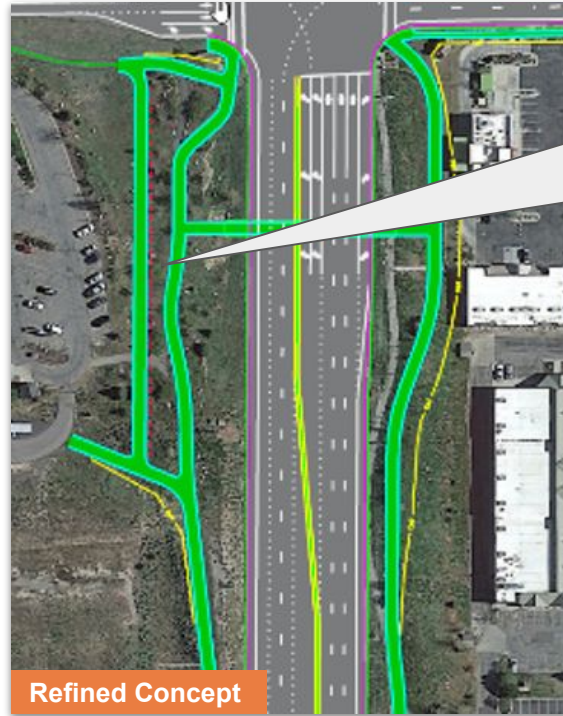
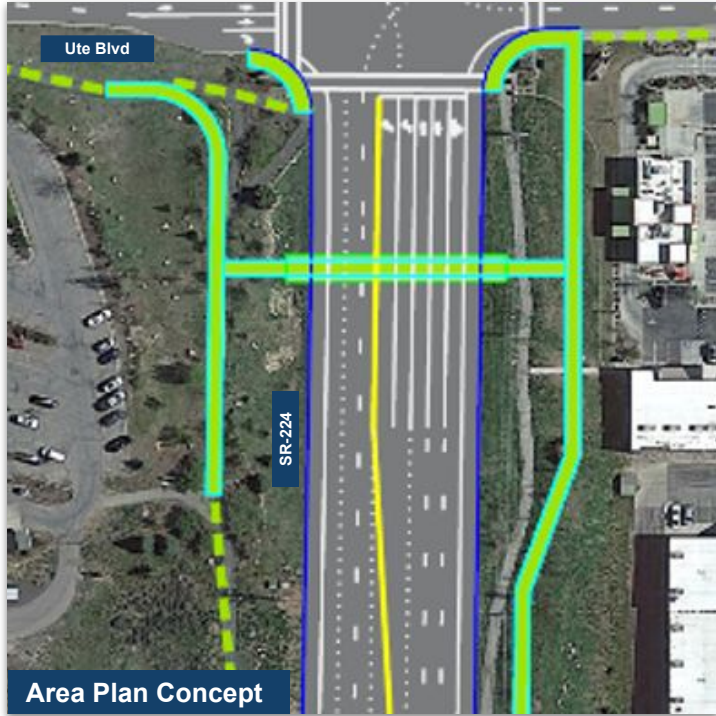
# Refinements to Alternative B



Incorporated BRT lanes  
at the intersection of  
SR-224 and Olympic



# Refinements to Alternative C



North-South trail between Ute and Olympic shifted away from SR-224 and ramp lengthened based on aerial survey data



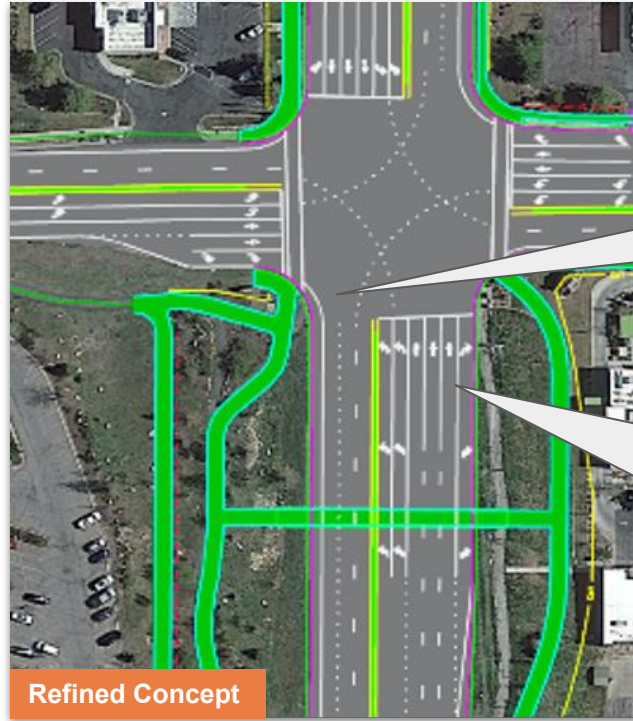
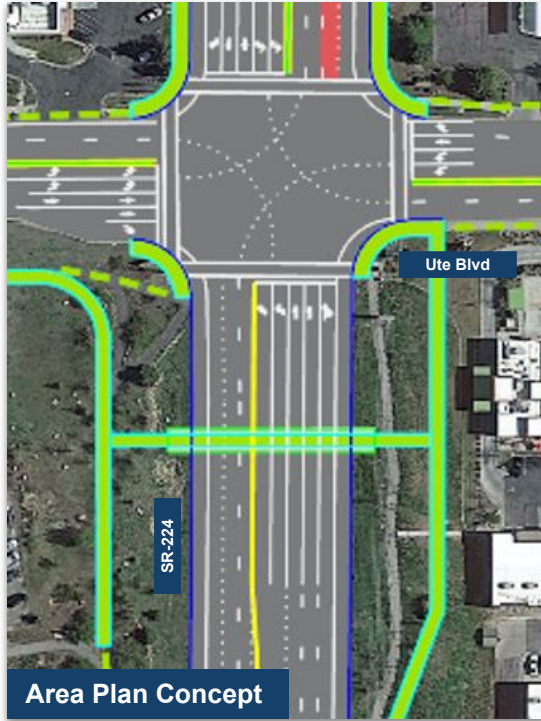
# Refinements to Alternative C



New eastbound lane from SR-224 to Olympic roundabout extended



# Refinements to Alternative C

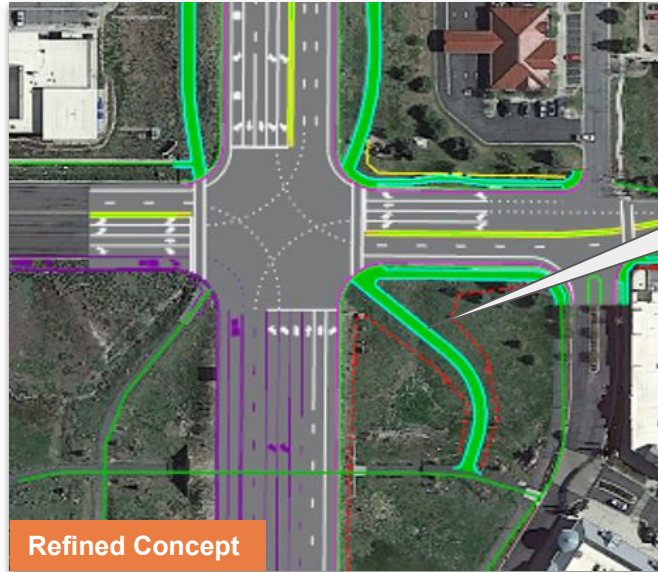
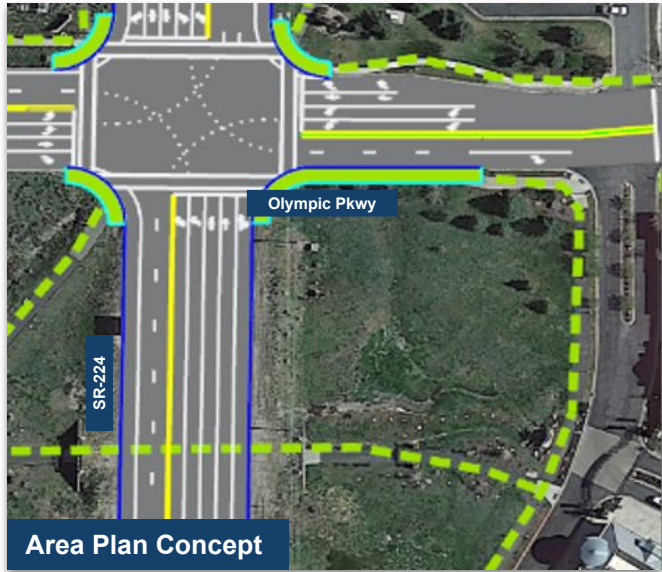


East-west crosswalks removed at Ute and Olympic to increase underpass and signal efficiency

Right turn only added at Ute and Olympic to improve traffic delay



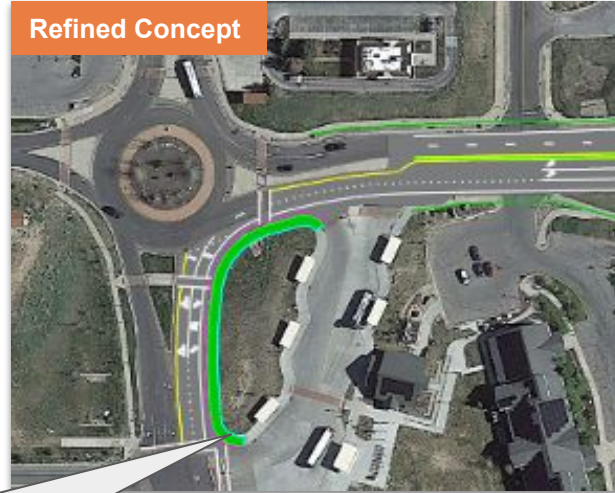
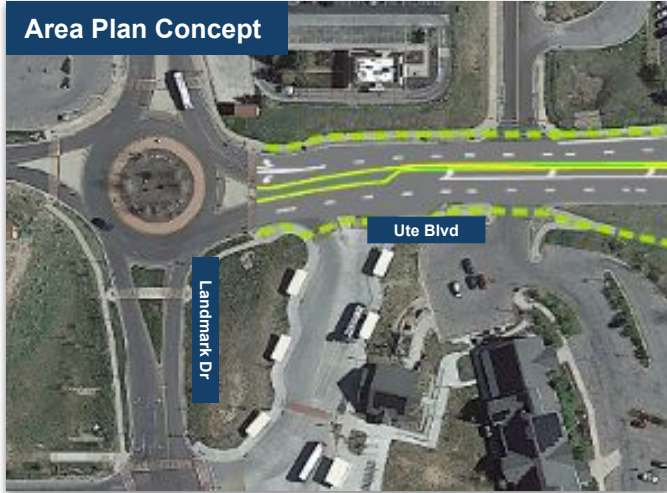
# Refinements to Alternative C



Trail connection added to southeast corner at Olympic



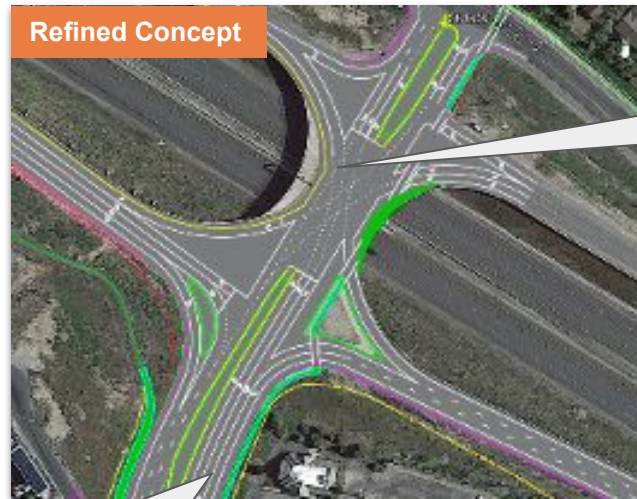
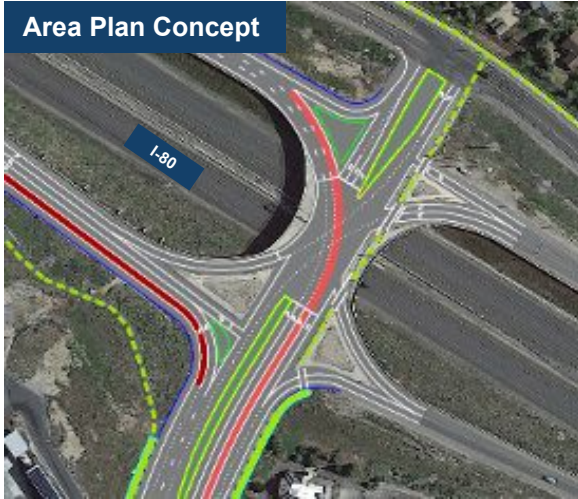
# Refinements to Alternative C



New lane added to southern approach at Ute and Landmark roundabout to accommodate projected 2050 traffic growth



# Refinements to Alternative C



Triple left to westbound I-80 removed

Minor turn lane reconfigurations at SPUI to add free rights at ramps



# Refinements to Alternative C



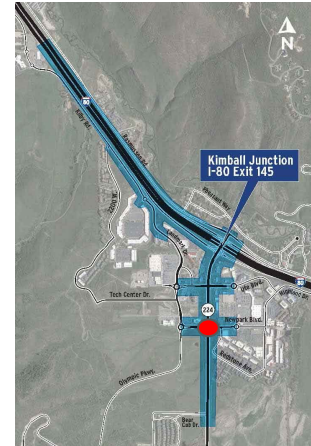
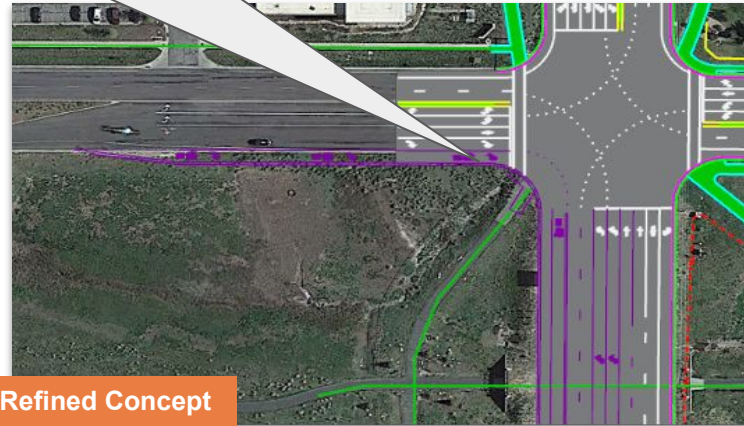
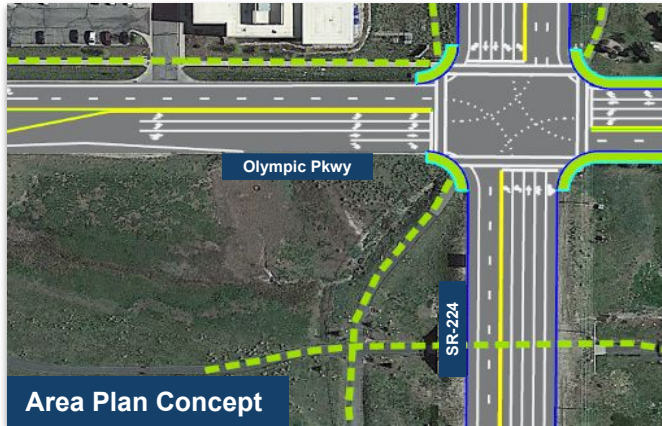
Added additional lane to on-ramp to accommodate projected traffic growth





# Refinements to Alternative C

Incorporated BRT lanes at intersection of SR-224 and Olympic



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## **APPENDIX B**

### Public and Agency Engagement Materials

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Notification Materials for the Comment Period on the  
Alternatives Development and Screening  
Methodology Report

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**NOTIFICATION: Alternative Screening Report Comment Period Open Now Through May 28**

Kimball Junction EIS Study Team <kimballjunctioneis@utah.gov>  
Reply-To: kimballjunctioneis@utah.gov  
To: kimballjunctioneis@utah.gov

Fri, Apr 28, 2023 at 9:55 AM

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# Kimball Junction

## ENVIRONMENTAL IMPACT STATEMENT



**ALTERNATIVE SCREENING  
CRITERIA**

**Comment Period Open  
April 28 to May 28**

Thank you for your continued interest in the Kimball Junction Environmental Impact Statement (EIS)! We appreciate all the time and energy you and your

fellow community members have contributed to the study

The study team is holding a public comment period to get your feedback on the Alternatives Development and Screening Methodology Report. This report identifies criteria and measures for evaluation and guides which alternative(s) is carried forward for detailed evaluation in the EIS. [The report](#) is available for review on the project website

A 30-day public comment period starts today, April 28. We are asking the community to comment on the criteria, measures and data used to screen the alternatives in the EIS. These comments will help determine how an alternative is further analyzed.

Comments may be submitted through the project website, email, voicemail/text, or by sending a letter to the study team by May 28, 2023 at 11:59pm MST. Mailed comments need to be postmarked by May 28. All the platforms to give us feedback on are in the [Contact Us](#) section of the project website.

The project team will collect all questions and comments submitted throughout the public comment period and take them into consideration moving forward.

[Submit Comment](#)

[View Alternative Screening Methodology Report](#)

[View Report Summary](#)

## Project Background

UDOT is preparing an environmental impact statement (EIS) to evaluate improvements at the I-80 and SR-224 interchange at Kimball Junction and on SR-224 from Kimball Junction through the Olympic Parkway intersection in Summit County, Utah.

From 2019 to 2021, UDOT, in partnership with Summit County, prepared the [Kimball Junction Area Plan](#) to determine existing and future capacity and



multimodal transportation needs at the I 80 and SR 224 interchange and through the two at-grade traffic signals on SR-224 at Ute Boulevard and Olympic Parkway.

The Area Plan process analyzed several solutions (30) and narrowed the options down to three alternatives being evaluated in the EIS. The proposed alternatives include:

- Taking no action
- (A) Split diamond interchange and intersection improvements
- (B) Grade-separated intersections with one-way frontage roads to the I-80 interchange
- (C) Intersection improvements with pedestrian enhancements

### Information on Proposed Alternatives

*The National Environmental Policy Act (NEPA) requires the evaluation of a No Action Alternative to serve as a baseline for comparison of the action alternatives. The No-Action Alternative assumes 2050 traffic conditions without the Kimball Junction Project and will be considered with the conceptual alternatives.*

## EIS Timeline & Process



***To learn more about the environmental study process that UDOT is following, watch the video below.***



## Contact Us

**Website:** [kimballjunctioneis.udot.utah.gov/](http://kimballjunctioneis.udot.utah.gov/)

**Email:** [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov)

**Phone:** 435-255-3186

**Mailing address:**

Kimball Junction EIS c/o HDR  
2825 E Cottonwood Parkway, Suite 200  
Cottonwood Heights, UT 84121

*The environmental review, consultation and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by UDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated May 26, 2022, and executed by FHWA and UDOT.*

This email was sent by [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov) to [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov)

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Kimball Junction Environmental Impact Statement | UDOT Region 2



**REMINDER: Comment Period Open Now Through May 28**

1 me age

Kimball Junction EIS Study Team <kimballjunctioneis@utah.gov>  
Reply-To: kimballjunctioneis@utah.gov  
To kimballjunctionei @utah.gov

Fri, May 12, 2023 at 9:31 AM

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# Kimball Junction

## ENVIRONMENTAL IMPACT STATEMENT



# ALTERNATIVE SCREENING CRITERIA

# Comment Period Open Through May 28

Thank you for your continued interest in the Kimball Junction Environmental Impact Statement (EIS)! We appreciate all the time and energy you and your fellow community members have contributed to the study.

As you may already know, the study team is holding a public comment period to get your feedback on the Alternatives Development and Screening Methodology Report. This report identifies criteria and measures for evaluation and guides which transportation improvement or alternative(s) is carried forward for detailed evaluation in the EIS. [The report](#) is available for review on the project website.

Comments about **how** you'd like us to analyze the alternatives are important at this stage. We are asking the community to **comment on the criteria, measures and data used to screen the alternatives** in the EIS.

Comments may be submitted through the project website, email, voicemail/text, or by sending a letter to the study team by May 28, 2023 at 11:59pm MST. Mailed comments need to be postmarked by May 28. All the platforms to give us feedback on are in the [Contact Us](#) section of the project website.

The project team will collect all questions and comments submitted throughout the public comment period and take them into consideration moving forward.

[Submit Comment](#)

[View Alternative Screening Methodology Report](#)

[View Report Summary](#)

## Project Background

From 2019 to 2021, UDOT, in partnership with Summit County, prepared the [Kimball Junction Area Plan](#) to determine existing and future capacity and

multimodal transportation needs at the I 80 and SR 224 interchange and through the two at-grade traffic signals on SR-224 at Ute Boulevard and Olympic Parkway.

The Area Plan process analyzed several solutions (30) and narrowed the options down to three alternatives being evaluated in the EIS. The proposed alternatives include:

- Taking no action
- (A) Split diamond interchange and intersection improvements
- (B) Grade-separated intersections with one-way frontage roads to the I-80 interchange
- (C) Intersection improvements with pedestrian enhancements

### Information on Proposed Alternatives

*The National Environmental Policy Act (NEPA) requires the evaluation of a No-Action Alternative to serve as a baseline for comparison of the action alternatives. The No-Action Alternative assumes 2050 traffic conditions without the Kimball Junction Project and will be considered with the conceptual alternatives*

## EIS Timeline & Process



***To learn more about the environmental study process that UDOT is following, watch the video below.***



## Contact Us

**Website:** [kimballjunctioneis.udot.utah.gov/](http://kimballjunctioneis.udot.utah.gov/)

**Email:** [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov)

**Phone:** 435-255-3186

**Mailing address:**

Kimball Junction EIS c/o HDR  
2825 E Cottonwood Parkway, Suite 200  
Cottonwood Heights, UT 84121

*The environmental review, consultation and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by UDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated May 26, 2022, and executed by FHWA and UDOT.*

This email was sent by [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov) to [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov)

Not interested? [Unsubscribe](#) | [Manage Preference](#) | [Update profile](#)

Kimball Junction Environmental Impact Statement | UDOT Region 2



**REMINDER: Comment Period Closing May 28**

1 me age

Kimball Junction EIS Study Team <kimballjunctioneis@utah.gov>  
Reply-To: kimballjunctioneis@utah.gov  
To kimballjunctionei @utah gov

Fri, May 26, 2023 at 9:26 AM

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# Kimball Junction

## ENVIRONMENTAL IMPACT STATEMENT



# ALTERNATIVE SCREENING CRITERIA

# Comment Period Closing May 28

Thank you for your continued interest in the Kimball Junction Environmental Impact Statement (EIS)! We appreciate all the time and energy you and your fellow community members have contributed to the study.

As you may already know, the study team is holding a public comment period to get your feedback on the Alternatives Development and Screening Methodology Report. This report identifies criteria and measures for evaluation and guides which transportation improvement or alternative(s) is carried forward for detailed evaluation in the EIS. [The report](#) is available for review on the project website.

We're reaching out today as a reminder that **the comment period will close THIS SUNDAY, May 28 at 11:59 p.m. MST**. We would like your input on the criteria, measures, and data used to evaluate the alternatives.

Your input from the study's formal comment periods is important to inform the decision-making process. Comments help us better understand the needs of the community and help make sure our analysis is accurate, thorough, and complete.

Comments may be submitted through the project website, email, voicemail/text, or by sending a letter to the study team. Mailed comments need to be postmarked by May 28. All the platforms to give us feedback on are in the [Contact Us](#) section of the project website.

[Submit Comment](#)

[View Alternative Screening Methodology Report](#)

[View Report Summary](#)

## Project Background



From 2019 to 2021, UDOT, in partnership with Summit County, prepared the [Kimball Junction Area Plan](#) to determine existing and future capacity and multimodal transportation needs at the I-80 and SR-224 interchange and through the two at-grade traffic signals on SR-224 at Ute Boulevard and Olympic Parkway.

The Area Plan process analyzed several solutions (30) and narrowed the options down to three alternatives being evaluated in the EIS. The proposed alternatives include:

- Taking no action
- (A) Split-diamond interchange and intersection improvements
- (B) Grade separated intersections with one way frontage roads to the I 80 interchange
- (C) Intersection improvements with pedestrian enhancements

#### Information on Proposed Alternatives

From Dec. 27, 2022 to Jan. 27, 2023, UDOT held a formal scoping public comment period, providing an opportunity for the community to give input on the proposed alternatives, purpose and need of the project, potential alternative screening criteria, identification of issues the project team should be aware of, and potential new alternatives. UDOT received over 170 comments during the comment period. These are available to view on the project website as part of the [Scoping Summary Report](#), along with an [FAQ](#) that addresses commonly asked questions.

*The National Environmental Policy Act (NEPA) requires the evaluation of a No-Action Alternative to serve as a baseline for comparison of the action alternatives. The No-Action Alternative assumes 2050 traffic conditions without the Kimball Junction Project and will be considered with the conceptual alternatives.*

## EIS Timeline & Process



***To learn more about the environmental study process that UDOT is following, watch the video below.***



## Contact Us

**Website:** [kimballjunctioneis.udot.utah.gov/](http://kimballjunctioneis.udot.utah.gov/)

**Email:** [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov)

**Phone:** 435-255-3186

**Mailing address:**

Kimball Junction EIS c/o HDR

2825 E Cottonwood Parkway, Suite 200  
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*The environmental review, consultation and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by UDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated May 26, 2022, and executed by FHWA and UDOT.*

This email was sent by [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov) to [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov)  
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Kimball Junction Environmental Impact Statement | UDOT Region 2

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City Government of Park City, Utah

April 28 at 9:00 AM

Hi, all! An update from the Utah DOT team — the latest [#KJEIS](#) comment period is open starting TODAY through May 28. Learn more about the study and read the report: [kimballjunctioneis.udot.utah.gov/](http://kimballjunctioneis.udot.utah.gov/)

Give UDOT your input — contact information is in the graphics.

There are several ways to submit your comment to the project team — check out the information in the graphics. 📍

## PUBLIC NOTICE

## KIMBALL JUNCTION EIS

# COMMENT PERIOD OPEN

APRIL 28 - MAY 28, 2023

Alternatives Development  
and Screening Methodology Report

[KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)



Kimball Junction  
ENVIRONMENTAL  
IMPACT STATEMENT

# MAKE A COMMENT

[435-255-3186](tel:435-255-3186)

[kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov)

Kimball Junction EIS c/o HDR  
2825 E Cottonwood Parkway, Suite 200  
Cottonwood Heights, UT 84121

[KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)



Kimball Junction  
ENVIRONMENTAL  
IMPACT STATEMENT

# PUBLIC NOTICE

# COMMENT PERIOD OPEN

## APRIL 28 - MAY 28, 2023

### Alternatives Development and Screening Methodology Report

 [KimballJunctionEIS.udot.utah.gov](https://KimballJunctionEIS.udot.utah.gov)



parkcitygovt • Follow



parkcitygovt 🙌 The latest @utahtransportation #KimballJunctionEIS comment period opens TODAY (April 28) and is open through May 28! UDOT is conducting an environmental impact statement (EIS) in the I-80 and SR-224 area and they want your input. The purpose of this EIS is to address transportation-related mobility for all users of the Kimball Junction area.

UDOT published the Alternatives Development and Screening Methodology Report, which identifies criteria for evaluating the proposed alternatives and guides which alternative(s) is carried forward for more detailed evaluation in their environmental study. The report is available for you to review on the project website.

They would like your input on the criteria, measures, and data used to screen the alternatives in the EIS. This phase of the project identifies alternatives that meet the project purpose & need, and determines how an alternative is evaluated in the study.

Comments may be submitted through the project website,



6 likes

APRIL 28



Add a comment...

Post



**Park City Municipal**

@ParkCityGovt

Hi, all! An update from the @UDOTRegionTwo team — the latest #KJEIS comment period is open starting TODAY through May 28. Learn more about the study and read the report: [kimballjunctioneis.udot.utah.gov](http://kimballjunctioneis.udot.utah.gov)

Give UDOT your input — contact information is in the graphics.

**PUBLIC NOTICE**

**COMMENT PERIOD OPEN**

**APRIL 28 - MAY 28, 2023**

Alternatives Development and Screening Methodology Report

[KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)



**KIMBALL JUNCTION EIS**

**MAKE A COMMENT**

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UDOT Region Two

@UDOTRegionTwo

👋 @UtahDOT has published the Alternatives Development & Screening Report for the Kimball Junction EIS. A comment period is open through May 28 and we need your input on the criteria, measures & data used to evaluate and screen alternatives.

🔗 : [kimballjunctioneis.udot.utah.gov](https://kimballjunctioneis.udot.utah.gov)

## PUBLIC NOTICE

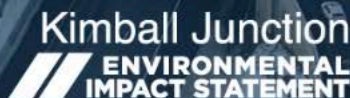
# COMMENT PERIOD OPEN

## APRIL 28 - MAY 28, 2023

Alternatives Development  
and Screening Methodology Report



[KimballJunctionEIS.udot.utah.gov](https://KimballJunctionEIS.udot.utah.gov)







UDOT Region Two @UDOTRegionTwo · 1h




This phase of the study identifies alternatives that meet the project purpose & need, and determines how they are evaluated. Comments may be submitted through the project website, email, voicemail/text, or by sending a letter to the study team postmarked by May 28. #KJEIS


# KIMBALL JUNCTION EIS



## MAKE A COMMENT

 435-255-3186

 kimballjunctioneis@utah.gov

 Kimball Junction EIS c/o HDR  
2825 E Cottonwood Parkway, Suite 200  
Cottonwood Heights, UT 84121

 KimballJunctionEIS.udot.utah.gov



173



UDOT Region Two @UDOTRegionTwo · 1h



@ParkCityGovt @SummitCountyUT residents and travelers, if you're interested in transportation improvements in the Kimball Junction area, visit our website for more information and to share your input.

[🔗: kimballjunctioneis.udot.utah.gov](http://kimballjunctioneis.udot.utah.gov)



144





Summit County, Utah

May 1 at 2:26 PM · 🌐



👋 Hi all, update from the @UtahDOT team that the latest [#KimballJunctionEIS](#) comment period is open now through May 28. Learn more about the study, read the most recent report, and give @UtahDOT your input by visiting their website: [kimballjunctioneis.udot.utah.gov/](http://kimballjunctioneis.udot.utah.gov/)

As a reminder: UDOT is conducting an environmental impact statement (EIS) in the I-80 and SR-224 area. The purpose of this EIS is to address transportation-related mobility for all users of the Kimball Junction area.

UDOT published the Alternatives Development and Screening Methodology Report, which identifies criteria for evaluating the proposed alternatives and guides which alternative(s) is carried forward for more detailed evaluation in their environmental study.

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## PUBLIC NOTICE

## KIMBALL JUNCTION EIS

# COMMENT PERIOD OPEN

## APRIL 28 - MAY 28, 2023

Alternatives Development  
and Screening Methodology Report

🌐 [KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)



Kimball Junction  
ENVIRONMENTAL  
IMPACT STATEMENT

# MAKE A COMMENT

📞 435-255-3186

✉️ [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov)

📄 Kimball Junction EIS c/o HDR  
2825 E Cottonwood Parkway, Suite 200  
Cottonwood Heights, UT 84121

🌐 [KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)



Kimball Junction  
ENVIRONMENTAL  
IMPACT STATEMENT

# PUBLIC NOTICE

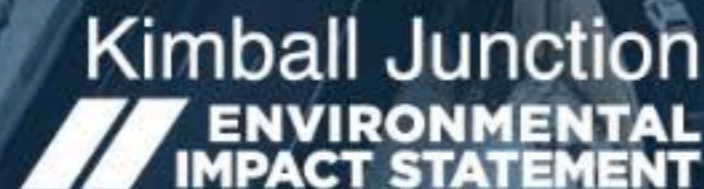
# COMMENT PERIOD OPEN

## APRIL 28 - MAY 28, 2023

### Alternatives Development and Screening Methodology Report



[KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)



summitcountytut • Follow



summitcountytut 🙌 The latest @utahtransportation #KimballJunctionEIS comment period is now open through May 28. UDOT is conducting an environmental impact statement (EIS) in the I-80 and SR-224 area and they want your input. The purpose of this EIS is to address transportation-related mobility for all users of the Kimball Junction area.

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Comments may be submitted through the project website, email, voicemail/text, or by sending a letter to the study team postmarked by May 28 - swipe for project contact information.

#SummitCountyUT #ParkCity #UDOT #KeepingUtahMoving #NEPA #PublicInvolvement #KJEIS #KimballJunctionEIS

2w



5 likes

MAY 1



Add a comment...

Post



Summit County, Utah @SummitCountyUT · May 1

👉 Update from the @UDOTRegionTwo team that the latest #KJEIS comment period is open now through May 28. Learn more about the study, read the report, and give @UtahDOT your input by visiting their website: [kimballjunctioneis.udot.utah.gov](https://kimballjunctioneis.udot.utah.gov)

UDOT Region Two @UDOTRegionTwo · Apr 28

👉 @UtahDOT has published the Alternatives Development & Screening Report for the Kimball Junction EIS. A comment period is open through May 28 and we need your input on the criteria, measures & data used to evaluate and screen alternatives.

🔗: [kimballjunctioneis.udot.utah.gov](https://kimballjunctioneis.udot.utah.gov)

[Show this thread](#)

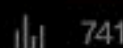
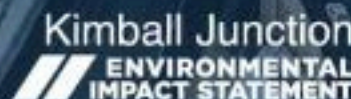
## PUBLIC NOTICE

# COMMENT PERIOD OPEN

APRIL 28 - MAY 28, 2023

Alternatives Development  
and Screening Methodology Report

🌐 [KimballJunctionEIS.udot.utah.gov](https://KimballJunctionEIS.udot.utah.gov)





City Government of Park City, Utah

May 26 at 5:00 PM



Heads up, Park City residents! Sunday is the FINAL day to comment on how the Utah Department of Transportation (UDOT) will analyze the proposed transportation solutions or alternatives in the Kimball Junction Environmental Impact Statement (EIS).

UDOT recently published the "Alternatives Development and Screening Methodology Report", and they want your input on the criteria, measures, and data used to screen the alternatives in the EIS.

Your input from the study's formal comment periods is important to inform the decision-making process. Comments help the team better understand the needs of the community and help make sure the analysis is accurate, thorough, and complete.

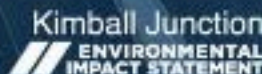
Comments may be submitted through the project website, email, voicemail/text, or by sending a letter to the study team by THIS SUNDAY, May 28, at 11:59 p.m. MST. Mailed comments need to be postmarked by May 28 — project contact information is listed in the graphic below.

## REMINDER

# COMMENT PERIOD CLOSES MAY 28, 2023 AT 11:59PM MST

Give your input on the **CRITERIA, MEASURES** and **DATA** used to screen alternatives

 [KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)





## KIMBALL JUNCTION EIS

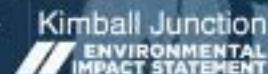
# MAKE A COMMENT

 435-255-3186

 [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov)

 Kimball Junction EIS c/o HDR  
2825 E Cottonwood Parkway, Suite 200  
Cottonwood Heights, UT 84121

 [KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)



# REMINDER

## COMMENT PERIOD CLOSES MAY 28, 2023 AT 11:59PM MST

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**MEASURES** and **DATA** used  
to screen alternatives

 [KimballJunctionEIS.udot.utah.gov](https://KimballJunctionEIS.udot.utah.gov)



parkcitygovt • Follow



parkcitygovt Heads up, Park City residents! Sunday is the FINAL day to comment on how the Utah Department of Transportation (UDOT) will analyze the proposed transportation solutions or alternatives in the Kimball Junction Environmental Impact Statement (EIS)!

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#SummitCountyUT #ParkCity #UDOT  
#KeepingUtahMoving #NEPA  
#PublicInvolvement #KJEIS  
#KimballJunctionEIS

3d



6 likes

3 DAYS AGO



Add a comment...

Post



**Park City Municipal** @ParkCityGovt · May 26

A reminder from the @UDOTRegionTwo team — the latest #KJEIS comment period ends on Sunday, May 28, and they need YOUR input! Learn more about the study & read the report by visiting their website: [kimballjunctioneis.udot.utah.gov](http://kimballjunctioneis.udot.utah.gov)

Give @UtahDOT your input - contact information below. ↪

REMINDER	KIMBALL JUNCTION EIS
<p><b>COMMENT PERIOD CLOSES MAY 28, 2023 AT 11:59PM MST</b></p> <p>Give your input on the CRITERIA, MEASURES and DATA used to screen alternatives</p> <p><a href="http://KimballJunctionEIS.udot.utah.gov">KimballJunctionEIS.udot.utah.gov</a></p> <p> </p>	<p><b>MAKE A COMMENT</b></p> <p>☎ 435-255-3186</p> <p>✉ <a href="mailto:kimballjunctioneis@utah.gov">kimballjunctioneis@utah.gov</a></p> <p>📄 Kimball Junction EIS c/o HDR 2825 E Cottonwood Parkway, Suite 200 Cottonwood Heights, UT 84121</p> <p>🌐 <a href="http://KimballJunctionEIS.udot.utah.gov">KimballJunctionEIS.udot.utah.gov</a></p> <p> </p>



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**Park City Municipal**  @ParkCityGovt · May 28



.@UtahDOT is preparing an Environmental Impact Statement for improvements to I-80 and S.R.-224 at Kimball Junction. TODAY is the last day of the comment period!

Submit your comments and be heard: [kimballjunctioneis.udot.utah.gov](http://kimballjunctioneis.udot.utah.gov)



The graphic is a two-panel flyer with an orange header and a blue background showing an aerial view of a highway interchange. The left panel is titled 'PUBLIC NOTICE' and 'COMMENT PERIOD OPEN' with the dates 'APRIL 28 - MAY 28, 2023'. It mentions the 'Alternatives Development and Screening Methodology Report' and provides the website 'KimballJunctionEIS.udot.utah.gov'. The right panel is titled 'KIMBALL JUNCTION EIS' and 'MAKE A COMMENT'. It lists contact information: phone number '435-255-3186', email 'kimballjunctioneis@utah.gov', and physical address 'Kimball Junction EIS c/o HDR, 2825 E Cottonwood Parkway, Suite 200, Cottonwood Heights, UT 84121'. It also includes the website 'KimballJunctionEIS.udot.utah.gov'. Both panels feature the 'UTAH DOT' logo and 'Kimball Junction ENVIRONMENTAL IMPACT STATEMENT' text at the bottom.

**PUBLIC NOTICE**

**COMMENT PERIOD OPEN**

APRIL 28 - MAY 28, 2023

Alternatives Development and Screening Methodology Report

 [KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)

**UTAH DOT** Kimball Junction ENVIRONMENTAL IMPACT STATEMENT

**KIMBALL JUNCTION EIS**

**MAKE A COMMENT**

 435-255-3186

 [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov)

 Kimball Junction EIS c/o HDR  
2825 E Cottonwood Parkway, Suite 200  
Cottonwood Heights, UT 84121

 [KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)

**UTAH DOT** Kimball Junction ENVIRONMENTAL IMPACT STATEMENT



← Thread

**UDOT Region Two** @UDOTRegionTwo · 1h

Sunday is the FINAL day to comment on how we analyze the proposed transportation solutions or alternatives in the @UtahDOT Kimball Junction area environmental study! #KJEIS  
Visit our website for more information and to make a comment.  
[kimballjunctioneis.udot.utah.gov](http://kimballjunctioneis.udot.utah.gov)

**REMINDER**

**COMMENT PERIOD  
CLOSES MAY 28, 2023  
AT 11:59PM MST**

Give your input on the CRITERIA,  
MEASURES and DATA used  
to screen alternatives

🌐 [KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)

**LTDOT** **Kimball Junction  
ENVIRONMENTAL  
IMPACT STATEMENT**

🗨️ 1 🔄 1 ❤️ 📊 303 📤

**UDOT Region Two**  
@UDOTRegionTwo

@UtahDOT published the Alternatives Development & Screening Methodology Report, & we want your input on the criteria, measures, & data used to screen the alternatives in the study. Your input is important to the decision-making process & help us understand the community's needs.

**KIMBALL JUNCTION EIS**

**MAKE A COMMENT**

☎️ 435-255-3186

✉️ [kimballjunctioneis@utah.gov](mailto:kimballjunctioneis@utah.gov)

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2825 E Cottonwood Parkway, Suite 200  
Cottonwood Heights, UT 84121

🌐 [KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)

**LTDOT** **Kimball Junction  
ENVIRONMENTAL  
IMPACT STATEMENT**

9:44 AM · May 26, 2023 · 166 Views

🗨️ 🔄 ❤️ 📌 📤

**UDOT Region Two** @UDOTRegionTwo · 1h

@ParkCityGovt @SummitCountyUT residents and travelers, if you're interested in transportation improvements in the Kimball Junction area, visit our website for more information and to share your input.  
[kimballjunctioneis.udot.utah.gov](http://kimballjunctioneis.udot.utah.gov)

🗨️ 🔄 ❤️ 📊 132 📤

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# Kimball Junction – Facebook/Instagram Spanish

 **Utah DOT**  Sponsored ·  ... 

¿Vive, trabaja o viaja en el condado de Summit o Park City? El Departamento de Transporte de Utah [...See more](#)

**AVISO PÚBLICO**

**INICIO DEL PERÍODO DE COMENTARIOS**  
28 DE ABRIL AL 28 DE MAYO DE 2023

CRITERIOS DE SELECCIÓN DE ALTERNATIVAS

 [KimballJunctionEIS.UDOT.Utah.gov](http://KimballJunctionEIS.UDOT.Utah.gov)

kimballjunctioneis.u...  
**Comentarios sobre los criterios de** [Learn more](#)

 **Utah DOT**  Sponsored ·  ... 

¿Vive, trabaja o viaja en el condado de Summit o Park City? El Departamento de Transporte de Utah [...See more](#)

**AVISO PÚBLICO**

**INICIO DEL PERÍODO DE COMENTARIOS**  
28 DE ABRIL AL 28 DE MAYO DE 2023

CRITERIOS DE SELECCION DE ALTERNATIVAS




 [KimballJunctionEIS.UDOT.Utah.gov](http://KimballJunctionEIS.UDOT.Utah.gov)

kimballjunctioneis.u...  
**Comentarios sobre los criterios de** [Learn more](#)




# Kimball Junction – Facebook/Instagram English

 **Utah DOT**  Sponsored ·   


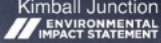
Do you live, work, or travel in Summit County or Park City? UDOT is continuing work on an [...See more](#)

**PUBLIC NOTICE**








**COMMENT PERIOD OPEN**  
APRIL 28 - MAY 28, 2023  
ALTERNATIVE SCREENING CRITERIA

 [KimballJunctionEIS.UDOT.Utah.gov](https://KimballJunctionEIS.UDOT.Utah.gov)


 

kimballjunctioneis.u...  
**Comment on the Alternative** [Learn more](#)


 **Utah DOT**  Sponsored ·   



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**PUBLIC NOTICE**



**COMMENT PERIOD OPEN**  
APRIL 28 - MAY 28, 2023  
ALTERNATIVE SCREENING CRITERIA

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**Deseret News**



Publication Name:

**Deseret News**

Publication URL:

Publication City and State:

Salt Lake City, UT

Publication County:

Salt Lake

Notice Popular Keyword Category:

Notice Keywords:

kimball junction

Notice Authentication Number:

202304281739163027543

2284099145

Notice URL:

EMAIL PRINT

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Notice Publish Date:

Friday, April 28, 2023

### Notice Content

PUBLIC NOTICE LEGAL NOTICE OPPORTUNITY TO PROVIDE COMMENTS The Utah Department of Transportation (UDOT) is issuing this notice to announce a public comment period for the Alternatives Development and Screening Methodology Report, which identifies criteria and measures for evaluation and guides which alternative(s) is carried forward for detailed evaluation in the Environmental Impact Statement (EIS). This report is part of an EIS which is being prepared to evaluate potential transportation solutions to improve mobility along Interstate 80 (I-80) and State Route 224 (SR-224) through the **Kimball Junction** area of Summit County. UDOT is seeking public input on the criteria, measures and data used to screen alternatives in the EIS. The purpose of alternative screening is to identify alternatives that meet the project purpose and need, and determine whether an alternative is reasonable under NEPA, practicable under the Clean Water Act, and prudent and feasible under Section 4(f) of the Department of Transportation Act of 1966. Formal comments on the Alternatives Development and Screening Methodology Report will be accepted for 30 days from April 28 to May 28, 2023. Written comments or questions should be directed to **Kimball Junction** EIS, c/o HDR, 2825 E Cottonwood Parkway #200, Cottonwood Heights, UT 84121, or can be emailed to kimballjunctioneis@utah.gov. Comments can also be submitted by leaving a voicemail or sending a text message to 435-255-3186. Comments may also be submitted on the project website. For more information, please visit the project website at <https://kimballjunctioneis.udot.utah.gov>. Individuals without internet access or needing accommodations including but not limited to translation, captioning, reviewing materials or submitting comments should notify the project team at 435-255-3186 or kimballjunctioneis@utah.gov by May 10, 2023. The report will be available on the project website on April 28, 2023. The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by UDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated May 26, 2022, and executed by the Federal Highway Administration and UDOT. DN0020081



Publication Name:

**Deseret News**

Publication URL:

Publication City and State:

Salt Lake City, UT

Publication County:

Salt Lake

Notice Popular Keyword Category:

Notice Keywords:

kimball junction

Notice Authentication Number:

202305181516519917840

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Notice Publish Date:

Friday, May 12, 2023

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# MEETINGS AND AGENDAS

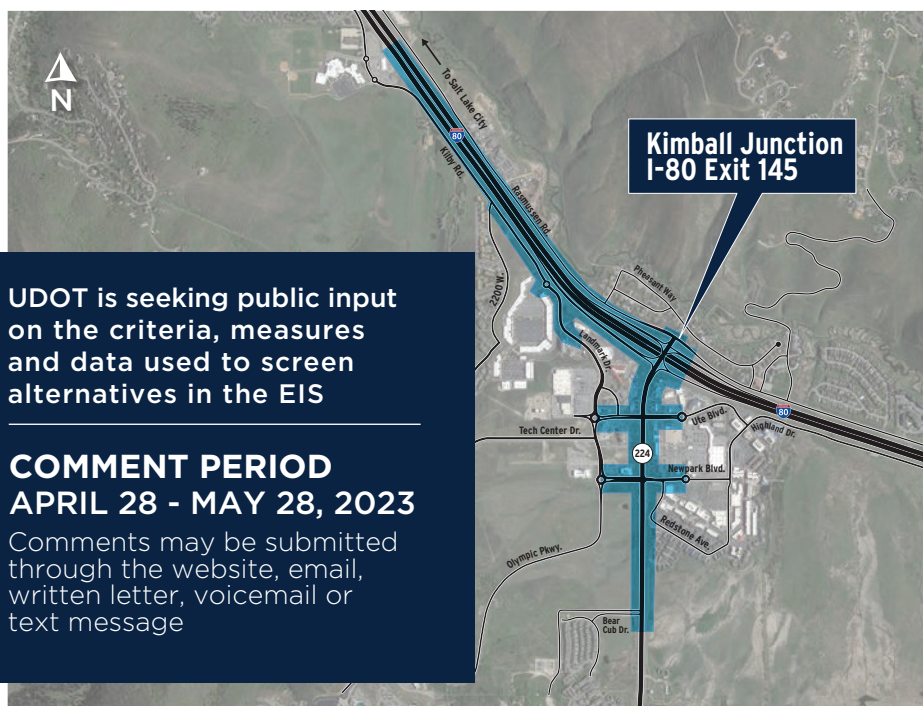
TO PUBLISH YOUR PUBLIC NOTICES AND AGENDAS, PLEASE EMAIL CLASSIFIEDS@PARKRECORD.COM

## PUBLIC NOTICE



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UDOT is seeking public input on the criteria, measures and data used to screen alternatives in the EIS

**COMMENT PERIOD**  
APRIL 28 - MAY 28, 2023

Comments may be submitted through the website, email, written letter, voicemail or text message

Individuals without internet access or needing accommodations including but not limited to translation, captioning, reviewing materials or submitting comments should notify the project team at 435-255-3186 or kimballjunctioneis@utah.gov by May 10, 2023. The report will be available on the project website on April 28, 2023.

For more information on the environmental study and proposed transportation solutions, and to make a comment, visit:  
[KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)

The environmental review, consultation and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by UDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated May 26, 2022, and executed by FHWA and UDOT.



## HELP SHAPE YOUR CITY!

Are you a Park City resident interested in making a difference in our community? Serve on a City Board or Committee! Park City Municipal has openings on:

- Board of Appeals
- Library Board
- Planning Commission
- Police Complaint Review Committee
- Public Art Advisory Board
- Recreation Advisory Board

Learn more: [parkcity.org/government/boards-commissions](http://parkcity.org/government/boards-commissions)



## Current job got you down?

The Park Record help wanted section has your next position listed. View it in Print and online at [classifieds.parkrecord.com](http://classifieds.parkrecord.com)

The Park Record.

## MORE DOGS ON MAIN

By Tom Clyde



### Thanks for an amazing season

What a great ski season. It started early and ended late and delivered great conditions all the way through. A big thanks to the front-line workers who made it happen. The unprecedented snow this winter came with unprecedented work. Parking lots had to be plowed almost every day. Avalanche control day after day, to the point that the overtime and explosives budgets must have exploded themselves. Lift crews spent hours of extra time getting things dug out. A great example is the Jupiter Chair, which was basically operating from the bottom of a crevasse, hand dug. If getting the load and unload stations excavated every day weren't enough, there were places all over where the snow was so deep they had to rope off the headache zones so people wouldn't get smacked skiing under the lift.

The full scope of it hit when I saw a very strange excavation near the Jupiter chair. I finally figured out that the snow was so deep that the counter-weight that keeps proper tension on the lift cable was bottoming out. So after digging out the lift itself, top and bottom, they had to go dig out a pit for the counter-weight to move in. That all adds up, from the parking lot to the top of the mountain, and all the extra work had to make some already tough jobs even harder. Ski patrol has not had a good night's sleep since December.

It was a rough, gray winter. I bought a new tube of sun block in November, and finally opened it last week on my 78th day of skiing. Otherwise, I was bundled up like the Michelin man, and sun exposure was the least of my concerns. We went for months without seeing a shadow. The snow was deep enough one day that I was able to stick my pole in the snow all the way to the grip. On the heels of last year's drought, this was just amazing.

Both resorts had new management this year, both great

people. Deer Valley brought in Todd Bennett as the new CEO. He took over from Mark Brownlie, who did an amazing turn-around last year. Between opening day and New Year's, he managed to undo the "re-imagining" wrought by his predecessors. We may never get back to the old Deer Valley with six different chocolate cake choices. Labor costs and shortages might preclude hiring the battalion of pastry chefs that made Deer Valley so special. But it seemed to be recovering from the twin plagues of Covid and corporate ownership.

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*Despite some first-world whining, the season will go down as one to remember. A lifetime of powder skiing in a single year.*

Then our hopes were dashed. The food service on closing day confirmed it; Deer Valley is gone. It's still a wonderful place to ski, it just isn't Deer Valley anymore. For the big closing day celebration, you could get chili, nachos, or nachos with chili on top. The line at the Silver Lake shipping container was backed up to the Homestake lift maze.

Until Deer Valley gets their Ikon Pass problem solved, there's no fixing it. It's impossible to sell one of the most expensive season passes, promising an experience commensurate with that price tag, and then have the place overrun every time the Cottonwood canyons are closed. And they were closed a lot this year. That's a tough business problem when the parent company's signature product, the Ikon pass, is in direct conflict with the Deer Valley brand. Sadly, we know who wins that one.

## BETTY DIARIES

By Kate Sonnick



### Stressing for success

I was reading this post about stress and now I need to go make some chamomile tea and draw myself a hot bath.

The post is by Dr. Mark Hyman, a family physician and leading functional medicine expert. He says that stress is the main factor in many of the dysfunctions of chronic illness.

Stress raises cortisol, which in turn causes muscle loss, high blood pressure and high blood sugar. It also produces adrenaline, which makes you feel tense and nervous — which causes you to fire up your Rad Power bike and head straight to the DABC to purchase a case of that Old Town Cellars Townie Rosé even though it's a little more expensive than the other rosés, but what the hell, it makes you feel good because you're shopping small, not to mention helping out a local business that recently suffered a major flood from a burst city pipe.

From there, stress is just one long, anxiety-ridden slide to memory loss, diabetes, dementia. Not to mention wine belly.

You think now might be a good time to roll out that yoga mat, the one that's been coiled in the corner of your bedroom like a hot-pink Hostess Ho-Ho for the past five months while you jacked up your back skiing anvil-shaped moguls in between storm cycles.

But hold on, Debbie Downward Dog. According to Dr. Hyman, stress is one of the most common causes of adrenal dysfunction which can ultimately make it hard to fall asleep at night. Bad sleep is bad.

Try telling that to your brain at 3 in the morning when you're wide awake ordering an emerald-green tennis skirt just in case you finally decide to give in to all that peer pressure to play pickleball this summer.

Poor sleep habits not only

damage your metabolism, says Dr. Hyman, but they also spike sugar and carb cravings, so you eat more and increase your risk for numerous diseases. Not even a cross-court dink into your opponent's kitchen can save you now.

Major buzzkill to that box of frosted marshmallow fun-fetti donuts you picked up when you were hangry because you forgot the Pig Pen Saloon doesn't serve Buffalo chicken nachos until after 3 p.m. — no exceptions — and it was 1 p.m. and you didn't feel like waiting. So instead you drove all the way to the Kamas Chevron and all they had left was birthday donuts and it wasn't even your birthday.

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*It might not be in any thesaurus, but stress has a lot in common with resilience. It's how we adapt to difficult situations.*

But not all stress is bad, right? I mean, look at the Navy Seals. Those guys have to do things like somersault into a pool, swim underwater 15 yards, then tie a becket bend, bowline, clove hitch, right angle and square knot — all without breaking the surface of the water. It might not be in any thesaurus, but stress has a lot in common with resilience. It's how we adapt to difficult situations.

When the going gets tough, the tough tie knots in a Speedo.

Left unchecked for long periods of time, Dr. Hyman says, stress will also cause light sensitivity, caffeine dependency and brain fog.

Grabbing your Jackie-Os, you decide to take the dog for a walk on the rail trail, maybe

At Park City Mountain, Deirdra Walsh took over this year. She's managed other resorts, and was in Park City years ago in the food and beverage operation. After last year's train wreck at Park City Mountain, she was tasked with bringing it back from the dead. That always happens — make a huge mess of things and then find a very capable woman to clean it all up. She accomplished a lot. The resort seemed well-staffed, and the employees seemed to be happy and having fun. The pay raises worked. Imagine that.

Lifts were running, and even with the relentless snowfall, the upper mountain areas were open as quickly as safety permitted. The paid parking system is annoying because parking has been free for 59 years. Parking is part of the deal, or used to be. But it worked. If you didn't want to start skiing until it warmed up (like that ever happened this winter), you no longer needed to be in the parking scrum at 8:15. You could make a reservation, show up at 10, and there would be a place to park. It seemed to smooth out the morning traffic.

It's impressive that they were able to execute the reboot at the same time as dealing with Biblical storms. Not that everything was sunshine and lollipops. There seemed to be frequent lift breakdowns, and the lift mechanics were disgruntled enough to form a union. The restrooms fell short of Greyhound bus terminal standards, with broken towel dispensers and clogged toilets that seemed unfixable. Crowds remain an issue, but the proposed lift upgrade at Eagle to solve the morning rush got blocked by the city. Our lifts went to Whistler; we stood in line. That one needs to get solved.

Despite some first-world whining, the season will go down as one to remember. A lifetime of powder skiing in a single year. Thanks to the employees, and best of luck on your next great adventure.

stop at Ritual Coffee. On the way out, you accidentally lock the door without taking the key. No big whoop; you have a spare hidden in the garage — but then you realize you don't have your iPhone so you grab the spare, go back inside and start wildly searching the house. Suddenly, your coat pocket starts vibrating and you fish out your iPhone and see a calendar reminder that you have a video conference starting in five minutes. The dog is still chilling in his leash when you finally finish the call 45 minutes later.

But it's not all Zoom, doom and gloom. Dr. Hyman says that being outside is one of the best ways to reduce stress. In fact, studies show being in nature lowers stress while decreasing your heart rate. It boosts your mood. And it may even cause gloating. After all, you live in one of the world's best towns for access to the great outdoors. Maybe it's even why you moved here in the first place.

You think of your friend from Park City who's outside in a big way: solo-hiking the Camino de Santiago in Spain. You send her a text to check in. She replies with a video of a large bull slowly ambling toward her on the trail, sounding enough cowbell to make even Christopher Walken back off.

"Will they hurt me?" she asks, the animal's 12-inch horns now clearly in view as the bull begins to pick up the pace. My friend backs quickly off the trail, loudly pleading "What do you want?" She then gives the slightest little laugh, which may have infused the perfect moment of calm into an otherwise fear-the-reaper moment of fight or flight.

The bull gives her a heavy dose of side-eye as he casually continues down the path.

Sometimes, you're the hiker. Sometimes, you're the bull. And sometimes, a healthy burst of stress is just what you need.

# MEETINGS AND AGENDAS

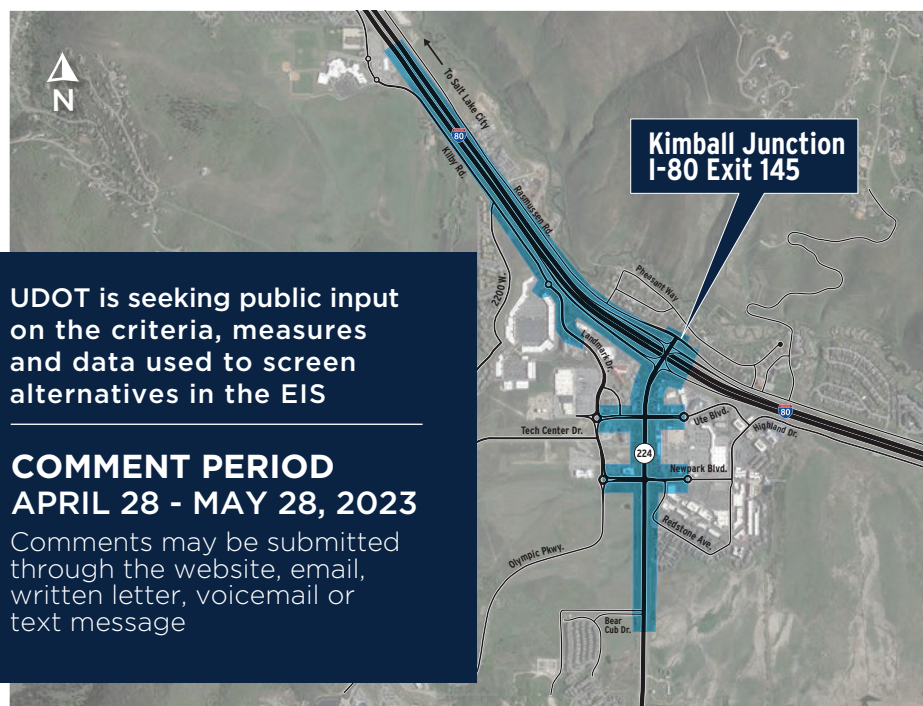
TO PUBLISH YOUR PUBLIC NOTICES AND AGENDAS, PLEASE EMAIL CLASSIFIEDS@PARKRECORD.COM

## PUBLIC NOTICE



The Utah Department of Transportation (UDOT) is issuing this notice to announce a public comment period for the Alternatives Development and Screening Methodology Report, which identifies criteria and measures for evaluation and guides which alternative(s) is carried forward for detailed evaluation in the Environmental Impact Statement (EIS).

This report is part of an EIS which is being prepared to evaluate potential transportation solutions to improve mobility along Interstate 80 (I-80) and State Route 224 (SR-224) through the Kimball Junction area of Summit County.



UDOT is seeking public input on the criteria, measures and data used to screen alternatives in the EIS

**COMMENT PERIOD**  
APRIL 28 - MAY 28, 2023

Comments may be submitted through the website, email, written letter, voicemail or text message

Individuals without internet access or needing accommodations including but not limited to translation, captioning, reviewing materials or submitting comments should notify the project team at 435-255-3186 or kimballjunctioneis@utah.gov by May 10, 2023. The report will be available on the project website on April 28, 2023.

For more information on the environmental study and proposed transportation solutions, and to make a comment, visit:  
[KimballJunctionEIS.udot.utah.gov](http://KimballJunctionEIS.udot.utah.gov)

The environmental review, consultation and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by UDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated May 26, 2022, and executed by FHWA and UDOT.



## Volunteer Opportunity Snyderville Basin Cemetery District Board of Trustees

The Summit County Council is seeking individuals to fill five vacancies on the Snyderville Basin Cemetery District Board of Trustees. The five-member Board is responsible to provide for the public health, safety, and general welfare of the residents living within the jurisdictional boundaries of the district. The district is authorized to provide cemetery services through facilities or systems acquired or constructed for that purpose through construction, purchase, lease, contract, gift or condemnation or any combination thereof. This is the first time a Board of Trustees will be seated for the District, so initial responsibilities will include operationalizing the district and choosing both a cemetery location/site and a financing/funding model.

Interested applicants must submit an online application at: <https://www.summitcounty.org/806/Volunteer-Boards-Form>. Chosen applicants will be appointed by the Summit County Council by resolution pursuant to the requirements of Utah Code § 17B-1-304. Applicants must be a registered voter at the location of the Board member's residence and a resident within the boundaries of the District. The term of Board members shall be governed by Utah Code § 17B-1-303. For further information contact: Amy Jones at 435-336-3042. Deadline for applications is 5:00 p.m., Wednesday, May 24, 2023.

# LOOKING FOR A JOB?

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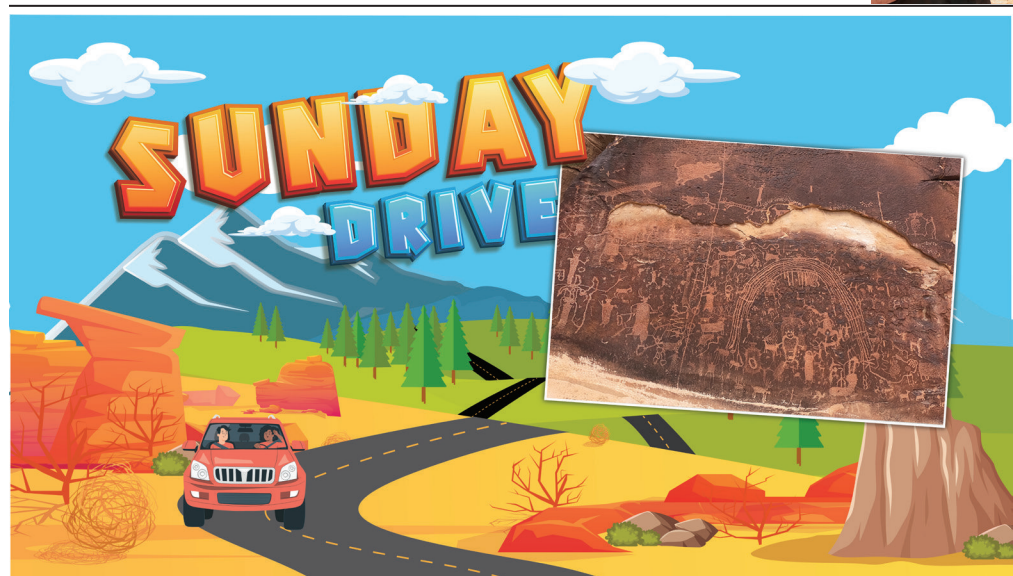
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The **Park Record.**  
PARK CITY, UTAH

## SUNDAY DRIVE

### Hiking back in time

By Tom Kelly



Sitting in the desert sand I was mesmerized by the etchings on the huge red rock panel in front of me. The sheer concept of this storytelling artwork dating back a thousand years and still displayed in such a pristine manner today was overwhelming.

There are plenty of examples of rock art panels across the Utah deserts. But few showcase such a complex storyline as the Rochester Panel, located in Emery County on the western slope of the San Rafael Swell, not far from Ferron, Utah. As many times as I've visited, I still sit in wonderment on the rock trying to dissect the stories etched from humans over a thousand years ago.

The hike to Rochester Panel starts from a developed trailhead on a desert plateau along the Spanish Trail, a primary trade route between what is now Santa Fe and Los Angeles in the 1830s and '40s. It immediately drops down into a drainage before rising up through a rock escarpment to the ridgeline rising out of Muddy Creek to your right, leading to the panel.

Typical rock art panels are simple scenes, like many we explored last year in Nine Mile Canyon. The Rochester Panel, along with other nearby art, is an amalgamation of hundreds of petroglyphs carved with stone tools into the rock, along with a few hand-painted pictographs.

A panoramic rainbow arches over the primary work. In the middle, a woman is giving life to a new child. The display includes human-like figures called anthropomorphs, as well as familiar concentric circles and wavy lines often found on other

panels from the period. Warriors and animals abound, though the alligator and hippopotamus-like images are thought by some to be more modern-era additions.

Scholars remain mixed on the specific origins and story of the Rochester Panel. Many feel it emanates from the Fremont Period, generally considered from around 700 to 1300. But some think the styles reminiscent of the Barrier Canyon Period, which dates back as much as 4,000 years ago, similar to those found in Horseshoe and Seego canyons to the east.

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*Whenever we're outdoors we should be respectful and good stewards. Never touch rock art as body oils will degrade work.*

Looking to the right of the panel you have a panoramic view of Muddy Creek, an ancient river that pre-dates the San Rafael uplift 40-60 million years ago.

Exploring around the ridgeline you can find other stand-alone panels, each one telling its own story. But before heading back, it's important to sit for just a few more minutes to absorb the history of this place and these people who came so many centuries before us.

#### THE DETAILS

**Getting There:** This is an

easy drive for the family SUV – no off-roading necessary. Take S.R. 10 south from Price to Ferron. At mile marker 17, head east on county road 805 (gravel) about 5 miles to the trailhead. Rochester Panel exists as a place name in Google Maps.

**The Hike:** It's an easy hike of about a half-mile on a well-marked trail, dropping down from the parking lot into a drainage, then climbing back up through a rock escarpment with good views throughout. It's only 80 feet of total vertical climb.

**Education:** Before heading out to Rochester Panel, do some research on rock art as well as the Fremont and Barrier cultures. Consider a visit to the Museum of the San Rafael in Castle Dale (closed Sundays).

**Dining:** This is a good one to bring your own picnic. There are a few restaurants in Castle Dale and Huntington, but limited on Sundays. The new Maverik in Castle Dale is a great stop for food and fuel.

**Etiquette:** Whenever we're outdoors we should be respectful and good stewards. Never touch rock art as body oils will degrade work. And, of course, don't add modern-day etchings – leave the history preserved as it is.

**Other Attractions:** The region is filled with opportunity. Just to the north, explore more stand-alone panels along the paved Moore Cutoff Road including the Juggler, Snake and Ascending Sheep panels.

*Next Week: We'll take our studious gaze out of the desert and into the ocean as we visit the Loveland Living Planet Aquarium in Draper.*

## SUMMIT COUNTY HEALTH

By Dr. Phil Bondurant



### A trickle becomes a flood

A few weeks back, I noticed a slow, small drip in the laundry room at my house. Upon further investigation, I noticed the sporadic droplets were falling from the cold-water valve, into the plastic washing machine outlet box, creating a trickle of water that headed to the opening of the drain line for the washing machine. After identifying the source of the nuisance water and a temporary solution, I was confident the repair could wait. I felt perfectly fine with my decision and committed to making the repair when I had time.

Fast forward to this week. The laundry room is a mess. I have removed a large amount of drywall that will need to be replaced, painted and primed, the studs in the wall will need to be dried and sealed to prevent future mold and I still need to fix the leaky valve. What originally started as a \$20 repair and an hour of my time is now considerably more expensive and will consume the better part of my weekend. Despite being frustrated by my lack of action when the problem was much more manageable, and doing my best to find a scapegoat, I only have myself to blame in this situation.

As I have thought about the events of the last few weeks, I realized that I had a fair warning that the valve was bad. I know better than to ignore leaking water inside my home. Yet, I chose to disregard the early notification. Had I taken immediate action, I could have avoided the current situation in my laundry room.

On Tuesday, May 9, the day my wife discovered our leaky valve had grown into a much bigger problem, the Health Department held the first event in the three-part speaker series focused on climate change and public health. This event, which was well attended and, for all

intents and purposes, accomplished what we had hoped, was founded on the concerns identified in the Summit County Climate Risk Assessment. Using advanced modeling and analytical techniques, the Woodwell Climate Research Center evaluated potential scenarios for drought, water scarcity, and wildfire through 2090. It is a remarkable report. I find the methodologies used and the anticipated outcomes to be fascinating. Oddly enough, the report validated comments that have been shared with me over the years

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*What originally started as a \$20 repair and an hour of my time is now considerably more expensive and will consume the better part of my weekend.*

by folks who do and don't believe in climate change science. In this case, the anecdotal information aligns perfectly with science, creating a curiously synergistic partnership between supporters and non-supporters.

As you might have guessed, the report states the current trajectory in Summit County, and really the Intermountain West, is not positive. Under the model used by Woodwell, the current drought conditions are expected to increase in severity, leading to water scarcity and elevated levels of water stress in Summit County. The lack of water will contribute to increased wildfires that pose a significant risk to human health while threatening the loss of life and property, stressing ecosystems and impacting

our local economy. Not good. The lack of water also presents concerns for ranching, farming and agriculture practices that could strain or interrupt the supply chain for the food we eat due to drier soils and less available water. Again, not good. When I think about how far-reaching the ripple effect could be, I cannot think of anyone or anything that is immune to the situation described in the report.

So why bring up such a highly political topic and stir the proverbial hornet's nest? Well, I want to let readers know that thanks to science and technology, we have been warned, notified, and made aware of the situation. Much like my leaky valve, it should come as no surprise that if we fail to act, we can expect bigger, more expensive, and more time-consuming problems to negatively influence how our children, and our children's children, experience the Wasatch Back. Whether your desire is to ensure the next generation has the opportunity to continue the farming and ranching legacy in our rural areas, or you hope your grandkids get to experience the greatest snow on earth, if even a portion of this forecast is realized, future generations may not be afforded the opportunity to love and cherish the area as we know it today. In fact, I can say with a fair amount of confidence, and I hope to be proven wrong, that if we don't make some changes soon, it won't be the same. That is a hard pill to swallow.

Science, data, and our individual experiences have shown us that change has happened, is happening, and will happen in the foreseeable future. We can no longer ignore the warning signs.

The full Climate Risk Assessment can be accessed on the Health Department website at [www.summitcountyhealth.org](http://www.summitcountyhealth.org).

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Comments Received during the Comment Period for the  
Alternatives Development and Screening  
Methodology Report

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COMMENT NUMBER	NAME (First Last)	COMMENT	COMMENT ORIGIN
1	Robert Umstead	The real area of back up in the mornings is where 224 meets the canyons entrance. If you do not improve this intersection then any Kimball junction improvements will still back up from the canyons light. A round about is need there to go along with any improvemnets on this project.	Web
2	Matthew Crandall	As an owner of significant amount of commercial property at Kimball Junction who also offices in Park City proper, I am concerned about the bottleneck created at Kimball Junction. What I propose would be to install some type of bypass that separates those going to KJ vs those going into Park City. Something that bypasses the first couple of lights for people going in and out of Park City. Similar to the commuter lane from the Point of the Mountain into Highland. This area creates a large bottleneck and I believe if there were a bypass it would relive the traffic significantly. The other issue responsible for traffic are those going I80 westbound and exiting the kimball junction overpass. The intersection for those going from the I80 westbound into park city is extremely long. What ends up happening without fail is the whole intersection has cars in it well after the light has turned red. This makes it impossible for those going eastbound to exit into Kimball Junction. I'm not sure what the solution would be, ie fines, intersection cameras that document those who are in the intersection to be fined like in California, adjusting the traffic light timing or something else. This would help reduce traffic significantly for eastbound drivers as they have to wait multiple traffic light cycles to exit the freeway because the intersection is blocked.	Web
3	Matthew Crandall	As an owner of significant amount of commercial property at Kimball Junction who also offices in Park City proper and commutes daily from Salt Lake, I am concerned about the bottleneck created at Kimball Junction. What I propose would be to install some type of bypass that separates those going to KJ from those going into Park City. Something that bypasses the first couple of lights for people going in and out of Park City. Similar to the commuter lane from the Point of the Mountain into Highland. This area creates a large bottleneck and I believe if there were a bypass it would relive the traffic significantly. The other issue responsible for traffic are those going I80 westbound and exiting the kimball junction overpass. The intersection for those going from the I80 westbound into park city is extremely long. What ends up happening without fail is the whole intersection has cars in it well after the light has turned red. This makes it impossible for those going eastbound to exit into Kimball Junction. I'm not sure what the solution would be, ie fines, intersection cameras that document those who are in the intersection to be fined like in California, adjusting the traffic light timing or something else. This would help reduce traffic significantly for eastbound drivers as they have to wait multiple traffic light cycles to exit the freeway because the intersection is blocked. During the ski season it often takes 15-20 mins simply to exit the freeway and go into town.	Web
4	Staci McIntosh	Increasing traffic at Kimball Junction will likely create additional bottlenecks further in town. The resorts, downtown area, and trail parking are at maximum capacity already. Bringing more cars into Park City is not the answer. Please consider options for mass transit with park and rides outside of the Kimball Junction area.	Web
5	Sylvia Turner	Tunnel to get on and off I 80.  We have this all over Austria  St Johann in Tirol, Going in Tirol  Where you drive under the road and come out on the other side do bypass certain parts of the town to provide quieter options for the people living in that area and relief traffic congestion.	Web
6	Kelly Gallagher	I am writing in continued support of Option (B) Grade-separated intersections with one-way frontage roads to the I-80 interchange. I strongly believe that it is the only viable long-term option being considered, although I recognize that it is also the most expensive option. Cars will continue to be the primary mode of transportation into Park City via 224. People will also primarily continue to use cars to get into and out of the Junction stores. While people will likely increase the amount of walking that they do in the Junction area, they will still use cars to get to the Junction. Most local people are like me; we generally try to make only 1 trip with multiple stops to cut down congestion and irritation while in the Junction. But I will have multiple bags of groceries, I will have my dog with me to also go to the dog park, etc. I will drive and park, definitely.  My only technical comment is that I am assuming pedestrian/bicycle access are included in the east-west crossover points at the 2 major intersections. This will be necessary. Adding this detail to the description would be helpful. Also, I am curious why there is a plan to move the pedestrian access to the south of the Junction, I have only used it once. However, in its current position it ties in well with the trail that runs N-S near the roundabout to the UOP, and moving it might decrease use of the trail (more distance to travel). Thank you for the work you are doing!	Web
7	Georgia Anderson	The intersection of the traffic lights to exit I80 to 224 is a huge bottleneck. Something needs to be done to offer an alternative entrance to the strip mall/smith's grocery store confluence	Web
8	Christine Katzenberger	This is only handling a small section of the problem. It will only tie up traffic at canyons, Kearns Blvd, park city resort and deer valley resort. May work at kimball jct but the rest will become worse.	Web
9	Eileen Kintner	why are we not considering a TRAX or electric trolley system that travels up I80 from Salt Lake City and connecting to the city owned lot in prospector area of Park city? If we are going to host the Olympics, we need a world-class public transit system that connects toSLC airport.	Web
10	Matthew Turner	Alternative B is really the only solution to the problem in Kimball Junction. I have seen this system work amazing in other city's	Web
11	Art Brothers	Of the three options offered, "B" is the only one that comes remotely close to eliminating traffic jams on I-80 and SR-224. But it is overly complex. The depressed roadway model may look good on paper but in real life, it tempts fate with issues like flooding, snow removal, accident clearance (with associated EMS issues) not to mention moose, deer or elk getting into the depressed area, or being knocked into it by traffic above). There is a simpler, easier and more elegant alternative. Make 224 one-way each way through Kimball Junction. No access points at the Junction. None. If you stay on 224 you are either getting onto I-80 or you are exiting I-80 and going into Park City. For local access to Kimball Junction, create a no traffic-signal peel-off on south-bound 224 rounding BACK to Olympic Blvd. Add a fly-over bridge on north-bound 224 for local access only. Both arteries meet and join at Olympic Blvd. Use the existing roundabouts on Ute and New Park to give access to the Option B bridges over 224. The roundabouts will need to be improved to handle the traffic count. It is simple. Intuitive. Easy to navigate and it leaves 224 unlogged in either direction. In the end, the key is "seeing" Olympic Blvd as the local access feeder in and out of Kimball. And likewise, "seeing" 224 as a single purpose fast way on-or-off I-80. Don't build the "depressed" roadway. That whole area has drainage problems. It is a Rube-Goldberg design which will fail, be closed, and make Kimball an even bigger mess.	Web
12	Deborah Duke	I prefer alternative B	Web
13	Chris Sammartino	Alternative A would create far too much traffic in West Kimball Junction. I live in that area, and having more cars exit this area would increase traffic congestion and traffic noise for me and hundreds of other nearby residents. Traffic needing access to West Kimball can exit at #141 and drive in. Hundreds of residents here utilize exit #141 and that takes traffic off the main PC exit #145. The real need is for incoming cars from down valley into Park City via I80. I prefer Alternative C as it encourages Mass Transit and HOV--which helps to better address the traffic problem caused by 1 car 1 driver. Alternative B is another option to help promote Mass Transit and HOV. Increasing the movement of buses (additional bus lanes) should be the top priority--to encourage folks to take the 101 from the Park and Ride. Buses whizzing by lined up traffic rewards transit riders and long waits in automobiles is a disincentive for car driving--especially single car drivers.	Web
14	Chris Sammartino	Alternative A would create far too much traffic in West Kimball Junction. I live in that area, and having more cars exit this area would increase traffic congestion and traffic noise for me and hundreds of other nearby residents. Traffic needing access to West Kimball can exit at #141 and drive in. Hundreds of residents here utilize exit #141 and that takes traffic off the main PC exit #145. The real need is for incoming cars from down valley into Park City via I80. I prefer Alternative C as it encourages Mass Transit and HOV--which helps to better address the traffic problem caused by 1 car 1 driver. Alternative B is another option to help promote Mass Transit and HOV. Increasing the movement of buses (additional bus lanes) should be the top priority--to encourage folks to take the 101 from the Park and Ride. Buses whizzing by lined up traffic rewards transit riders and long waits in automobiles is a disincentive for car driving--especially single car drivers.	Web
15	Marty Carroll	Traffic signals that stop vehicles entering/exiting I-80 in any direction should be avoided at all cost. Of the proposed alternatives, I believe Alternative B would be best, but the final approach (whichever is chosen) should include items 6 & 7 from Alternative C (i.e. extending West-to-North right turn lane on Newpark Blvd and extending East-to-North dual left turn lanes on Ute Blvd to the traffic circle @ Landmark Dr.	Web
16	Jack Fenton	Please lengthen the left turn lane from South bound 224 onto Ute blvd.  This can be done without a \$300,000 study. Trust me on this one. More cars are trying to turn left at this light than there is room for. To accomplish this vastly needed improvement you will need a jackhammer, some asphalt, some new lines to be painted. Once the lane has been extended, please adjust the turn arrow light to stay green long enough to empty the entire queue. Do this right away. Don't wait until 2028.  We are watching .	Web
17	Porter Spencer	Make a bypass road that goes behind the Outlets to i80 so there is not so much damn Ski traffic backed up by those to stop lights.	Web
18	Rich Dressen	I would lower the main road into PC through kimball junction eliminating the traffic lights. Provide two lane exit ramps to the local businesses and overpass over the sunken road.	Web
19	Dennis Roy	Traffic traveling from I80 in and out of Park City should be separated from the business traffic in Kimball Junction. It appears that Alternative B would help separate the traffic.	Web

20	Eric Iverson	I live in Bear Hollow Village ( [REDACTED] ). Traffic on 224 in Kimball Junction is currently failing during peak visitor seasons between about 3:30pm to 6pm M-F. There is also a serious safety issue on 224 and Bear Cub Dr., when cars heading northbound towards I-80 will enter the center divider illegally, at high speed (45-55mph), sometimes up to a 1/2 mile in advance of making a left turn (to the west) at Olympic Dr. when traffic is backed up to northbound exiting town. This is a hazard when making a left turn (northbound) from Bear Cub Dr. onto SR224. The "Bus Only" lane (the shoulder) is also used for this purpose to make a right (east turn) at Newark Blvd. I suggest bold painted hash marks in the center divider near Bear Cub Dr. and SR224 making it clear that this is illegal, and the same on the shoulder. Increased signage would be good too. These are inexpensive additions that will drastically improve safety until the final traffic mitigation plans are in place.  On that note, here are my suggestions for long term traffic mitigation in Kimball. First make some short term cost effective changes immediately. Anything will help, while plans are being finalized for long term solutions and road changes in Kimball Junction. Long term, I like the solution of dropping Olympic Pkwy/Newpark Dr, and Ute Blvd under SR224 so that traffic can freely slow to and from I-80 without the currently busy intersections, and stop lights. However, I understand this is an expensive proposition that will need UDOT and Federal Funding to complete, and I know that won't happen quickly. Construction time for that solution will be significant as well. To sum it up, plan and secure funding for a solid comprehensive, well thought out long term solution, and make some quicker budget friendly improvements ASAP. Traffic is awful in Kimball Junction.	Web
21	Gary Hecox	Option B is the only one that will help with the Kimball Junction traffic problems.	Web
22	George Mattinson	I am very please UDOT are already providing multiple proposals on solving the traffic problems at Kimball Junction. I believe that the proposal "Alternative B" is the optimum solution. "Alternative A" while good in scope, suffers from too many frontage road expansions and attempts to solve traffic in the junction itself by adding an extra lane in the Southbound direction. City planning in places like Los Angeles and Dallas have proven time and time again that adding lanes to roadways doesn't improve traffic flow, rather it attracts more vehicles to that road. "Alternative C" attempts to solve the traffic problem even worse, as it is suggesting adding turning lanes onto the freeway, as well as widening the Northbound and Southbound lanes. This will only lead to more congestion and more unhappiness among Park City residents during rush hour. Therefore, I believe that the depressed road option in "Alternative B" to be the best proposal. I hope UDOT will consider my position on this topic as a Park City resident.	Web
23	Nick Burns	Alternative B seems the best choice going forward. I suspect more costly, but appears to best separate local traffic from through traffic headed to Park City, the resorts, etc. I live in this immediate area and very much support a solution that increases safety for walkers, bikers. So, while all traffic solutions must support getting people out of their cars, Alternative B appears to best reduce auto congestion and aid in pedestrian safety.  (In all projects, UDOT must consider/support getting people to move away from auto-centric transportation—not easy, I realize).  thank you-	Web
24	Maureen Murtaugh	HOV lanes will be another benefit for out-of-town guests traveling together and another pain point for residents who travel to work alone because bus and other transit options take 2-3 times longer than driving—even with traffic. Consider residents needs strongly as we pay taxes here and are highly impacted by the growth of the ski industry beyond the infrastructure of summit county and park city.	Web
25	Robert Phillips	I vote for option #3	Web
26	Kristen Schulz	I prefer option B, but would like the pedestrian crossing to be moved closer to either Ute Blvd or Newpark Blvd.	Web
27	Matthew Lindon	There will be groundwater problems with the split grade.  Why don't you use the road we have. There are huge shoulders not used by cars or bikes. Use them like we did during the Olympics. Get rid of the wide center dividers and sidewalks in the middle. Use the entire road  Come up and time and actuate the signals. They are broken and on default mode for turning lanes. Get smart lights that feel the traffic and adjust accordingly.  Get an exit ramp to the Ecker Hill park and ride directly off I80.  No day skiers past Kimbal. Limit traffic. Support busses. Put more park and ride lots by UOP. At least park resort workers out there and pay them for their bus commute time. Get Vail involved. DV too. Put Silly Market and Art Fest at Redstone where there is parking.	Web
28	Steven Issowits	I've submitted a comment during a prior period, but this looks like a new comment period again. Not to duplicate, but Alternative B with the depressed roadway seems to be the best option for the area, for all the reasons I laid out in my prior comment. Thank you.	Web
29	Robin Filion	The report notes that UDOT will use Summit County's travel demand model and that expected population is one of the inputs. The Kem C. Gardner Policy Institute's projections for Summit County population increases are a good starting point (e.g., 47.1k by 2030 and 59.6k by 2060). However, that study does not take into account migration due to climate change. SLC has experienced and is experiencing climate change. The number of days in SLC with temperatures over 90° F has steadily increased from 56.6/yr. during the decade beginning 1981 to 67.1/yr. during the decade beginning 2011, and is projected to hit 97/yr. in 2100. Climate change migration models should be evaluated for their appropriateness in predicting migration from SLC, and other cities that will be negatively affected by climate change, to Summit County and the data from such models should be included in the traffic demand model. Failure to take into account migration due to climate change likely would result in inaccurate model results and could lead to the adoption of an alternative that would not accommodate the increasing population.	Web
30	Joel Rosenfield	Option #2 is by far the best. It would make Kimball Junction more walkable/bikeable across the two sides of SR-224 making it more of a city-center while allowing the bulk of drivers that are entering and exiting I-80 south toward Park City to flow in a much more unobstructed fashion.  Better still is to build the bridges over SR-224 at Ute Blvd. and Newpark Blvd. to be wide enough to hold a restaurant to make the area more pedestrian friendly and people to use their cars less.	Web
31	Lisa Wray	Instead of creating patchwork "solutions" that dont really fix the problem, would it be possible to create a new on ramp to the i80 that bypasses KJ? i.e., some sort of express lane to the highway that goes to the east of the tech center? I understand that this might involve tunnels or bridges, but it would make KJ a local destination and relieve all I80 traffic.	Web
32	Herve Lavenant	Option B is the only option that relaxes constraints on traffic by enabling greater free-flow of traffic	Web
33	Carol Bolinger	Most distributive but most likely to make improvements plab B diversion of 180 traffic below grade. I live in Kimball jct and would be heavily effected but this plan is most likely to improve flow	Web
34	Tyler Goetz	Why have you not considered bi-directional traffic? This area is a morning rush in and evening rush out. The traffic backs up during these times only in one direction and there is already room with the bus lane and median to put in the infrastructure on the cheaper end of things. It works in west valley. the traffic isn't to get on a frontage road, the traffic is to access the freeway. Get them in and get them out. You don't need to change intersections and make frontage road access.	Web
35	Joan Mills	I feel this needs to be done while protecting Hi Ute ranch since it is a conservation area. In saying that, why not a tunnel that takes direct traffic past kimball junction? This would avoid the back ups during ski season and events in PC?	Web
36	Carol Molesky	We need a long term alternative that helps with the winter traffic and future development. The alternative b would provide better direct access to 80 without stopping traffic!	Web
37	Dan Monahan	please leave it alone construction will be a disaster	Web
38	Tom Collier	I often ride a bicycle from nearby, through Kimball junction and note that access to business in the area is a challenge. I would love to see all three options go farther to improve pedestrian and bicycle access in the area. But, I note the Alternative A, in particular, appears to worsen one of the most problematic areas. Crossing from the west side of the outlets to the bridge over I-80 or to the mall including Whole Foods is relatively difficult due to the number of road crossings over a short distance. Driving more traffic off the highway and into that area would only worsen the situation and make it a more dangerous place for anyone not in a car.	Web
39	Amy Doucette	I'm a strong proponent of alternative B, where 224 is depressed and overpasses connect the Olympic park area with new park. My unprofessional assessment of the problem in this area is that the traffic lights are the cause of the backups. If we eliminated the need for cars to be stopping on 224, I think the congestion would be greatly reduced. Frontage roads along 224 to access neighborhoods and businesses, I believe, would also help alleviate a lot of the back ups.	Web
40	Thomas McLoughlin	I prefer Alternative B - grade separated intersections. I have been a resident of Park City (initially part-time; then full-time) for 18 years. Population growth and vehicular traffic has grown dramatically - to the point where I do not travel to or through Kimball Junction at certain times of day and avoid the area entirely on holiday weekends. I imagine Alternative B will be more expensive but a cheaper option will be short-sighted and will require another round of improvements in 10 years. Growth will not stop and the state legislature's decision to allow more intensive development in the area will only make matters worse. Please invest for the long-term now. For the record, limiting the improvements to HOV lanes (alternative C) is a complete waste of time and money. Add those features to a larger project, if you must, but grade separation is essential to accommodate peak traffic during ski season. Thank you.	Web
41	Cheryl Simpkins	I am in favor of a frontage road, on either side of the freeway to accommodate on/off ramps to I-80 and Rt. 224. I use them when traveling to SLC for certain work locations, especially on the west side, and they seem to relieve congestion and divert flow, while approaching my destinations.	Web
42	David Bennett	The intersections at Kimball Junction have failed. There are two choices: either a flyover from before redstone directly to I-80 or taking the road underground, again directly to I-80. Leave the surface streets from redstone to I-80 alone and simply construct either a flyover or underground roadway. Putting an overpass or flyover for either of the two intersections will not accomplish the needed traffic flow.	Web
43	Steven Propst	Why would more and easier access be created to enter a box canyon (Park City) with finite space, finite parking, and finite resources. The out of control construction needs to cease. Most of the vehicles cramming the streets of Summit County are CONSTRUCTION VEHICLES. Seriously why is nobody paying attention??!	Web
44	Charlotte Backus	Alternate B is the best because the majority of traffic filter through there and it would make a lot of sense to have multiple ways, including getting back into the highway. The main reason it gets so congested is those two stop lights. I have also noticed it can be pretty dangerous because of all the traffic with people driving in the center lane from all the way back closer to canyons and it has caused many crashes so overall, I think it would be a lot safer and smoother for people to get home. Thanks all! Hope this can happen!	Web

45	Lawrence Iram	<p>Criteria:</p> <p>Ability to displace/remove snow as "powder days" cause the biggest backups.</p> <p>Residential Noise abatement</p> <p>Impact on wildlife to transit area (moose, deer, elk).</p> <p>Cost of overall project relative to funding sources</p> <p>Time to complete project</p> <p>IDEAS:</p> <p>1. Time the lights better such that backups onto I-80 East (very dangerous) are reduced...time the 3 lights I-80E to 224S such that there's an effective pass-thru during peak morning hours.</p> <p>2. Use moveable concrete divider (as some cities use for HOV lanes) to turn 224's "suicide lane" into an inbound lane in the morning and an outbound lane in the afternoon. Tricky with snow, but would work most days and could be prepositioned ahead of big storms.</p>	Web
46	Charles Stanley	Only viable alternative is Option B. No other alternative has any hope of reducing congestion on 224 during peak hours.	Web
47	Mark Morgan	<p>As I've said before, traffic at the junction is driven by the flow along the whole corridor into downtown PC and in the winter to each of the ski resorts. No matter which option is chosen, all you will do is get traffic to the first stoplight (Bear Hollow Dr.) faster, and thus will start the traffic backup. Until the number of vehicles coming to PC, and the resorts, and ample efficient ( into and out of) parking at the resorts is addressed, how traffic flows thru Kimball Junction to get to those areas is not worth the time to study, let alone implement changes.</p> <p>A process flow study cannot simply ignore what happens beyond the boundaries of Kimball Junction. It is a gateway, not the end-destination.</p>	Web
48	Jeffrey Cedeno	<p>I have several concerns about both vehicle and pedestrian impact across the defined zones. My immediate concern is that the impact study area does not cover a broad enough set of local or throughway intersections to fully cover the issues we have as locals. The traffic study ends at roundabouts and does not cover that traffic regularly backs up for 15 minutes or more during busy seasons at each intersection and flows past roundabouts; the messaging I have seen in documentation does not account for how over capacity every defined egress point is at peak season now, nor does it acknowledge that backups regularly exceed times in documentation and have gotten exponentially worse over the past four winters.</p> <p>We require local pedestrian and vehicle access that covers all 4 seasons and fully bypasses 224. This should be a mandatory relief for traffic in this pattern and there should be no requirement to go through a light to go across this road for bikes, pedestrians, or cars. Anything short of this will not meet our needs as locals.</p> <p>Similarly, there needs to be a low impact left turn access across 224 in both directions. This would be the ideal scenario for us as locals. Locals would also direct access from the East side of 224 to Park &amp; Ride lots. Currently there is no access to any Park &amp; Ride locations for residents on the east side of 224 to reach a Park &amp; Ride without crossing 224 or Route 40/I. 80.</p> <p>Please think about how residents can get direct access, ideally via public transit, to use resorts like PCMR or Deer Valley directly via an express bus that does not switch to local access, as it's incredibly inconvenient to force us on local busses that access all 3 locations at once, and potentially add 30 minutes or more to transit in each direction. Currently with no traffic it takes an hour for me to replace my trip from Deer Valley back to Highland Estates via public transit, but it's a 15 minute drive. This needs to be appropriately addressed for us to fully relieve traffic.</p>	Web
49	Deanie Wimmer	After studying these alternatives, I would favor Alternative A, and second choice B. I favor an option that provides less congested access to I-80 to and from Park City. The split interchange appears to best address that need, but it is hard to tell from the rendering. I'd like to see a streamlined option for those who want direct access from I-80 into PC, and can by-pass Kimball Junction as much as possible.	Web
50	Ron Palmer-Leger	<p>I have lived in the Park City area for more than 30 years and have seen the growth and its effects on traffic and development. I work in public safety so I have seen the impacts of traffic congestion and accidents firsthand. Dealing with the issue at hand at this point in the game is difficult because buildings and businesses are already in place. Having a win win for everyone is not a possibility. I do think we can make some sound improvements.</p> <p>I suggest that we consider a "Fly-over" with business lanes to allow people to access the Kimball Junction area. The main point of congestion in Kimball Junction is traffic at anytime of year and anytime of day trying to get into or out of Park City. If we can develop the area to allow shoppers to get into the business area and keep the traffic moving that isn't shopping its a win!</p>	Web
51	Sheryl Johnson-Proffitt	Whatever design you choose; please build a SOUND BARRIER WALL and smart, environmentally pleasing, less light-polluting, LIGHTS!	Web
52	Daivd Sutherland	Plan B is the only one that effectively addresses the root of the problem: traffic flow through Ute / Olympic intersections. Because these 2 intersections are failing rush hour traffic backs up onto I-80 (mornings) or 224 (afternoons). Plans A and C don't really solve these chokepoints, and focus more on solving the I-80 interchange, which isn't actually that big of a problem - traffic isn't backed into Ute Blvd intersection from the I-80 light, but is backed onto I-80 because nothing flows through Ute/Olympic in the mornings. You *have to* get rid of the left turns on/off of 224 at these 2 points, and Plan B does this. I-80 intersection then works just fine (or only needs minor tweaks).	Web
53	Steven Propst	Increasing access to a finite, overcrowded, and overused space is absolutely no solution. Park City is a Box Canyon. The 1000's of construction vehicles that cram the streets needs to come to an end. Park City needs a badly need rest. It needs a building moratorium of any and all construction projects.	Web
54	Christoph Gorder	I reviewed the three proposals for improving traffic flow through Kimball Junction. Of the three, my preference was for Alternative B, which proposes grade-separated intersections with one-way frontage roads the the I-80 interchange. I feel this proposal holds the potential to be a long term solution for the traffic congestion. The other proposals seem less substantial in what they offer. Thank you.	Web
55	Jessica Bryant	I support the Alternative B option. I've been commuting to Park City for work for seven years and I think this option best suits the commuter traffic, which is increasing throughout the entire year, not just ski season.	Web
56	Leslie Howa	Sadly...Not many choices dealing with perpetual load in/ load out traffic 24-7 now. Widen the entire road, or build a speed electric rail line. With all the infrastructure and too much clustered buildout out there and along 224. To continue...There seems no environmental process or solution to solve this horrific traffic mess. The cow is out of the barn.	Web
57	Larry Van Atta	I feel Alternative B is by far the best way to go. The majority of traffic on 224 to and from 80 are not heading into Kimball Junction and are thus slowed down by the lights. Alternative B would also make it alot more pedestrian friendly between the two halves of Kimball Junction	Web
58	Bruce Carmichael	<p>Prefer Alternative B.</p> <p>Would like to see a strategy to access the existing Ecker Hill Park and Ride lot from eastbound and westbound I-80 without having to exit at Kimball Jct or Jeremy Ranch.</p>	Web

59	Laura Hanrahan	<p>Thank you for presenting the options to the public thoroughly. I watched the video of the online session to get a better handle on the potential plans.</p> <p>Web</p> <p>General observations:</p> <ul style="list-style-type: none"> <li>- The priority or goals of the project should be:</li> </ul> <p>Improve traffic flow in the area</p> <ul style="list-style-type: none"> <li>- Significantly improve pedestrian / bike traffic flows to encourage walking, biking, and use of public transportation. But mostly to improve use of public transportation.</li> </ul> <p>Alternative Option A:</p> <p>This is an interesting option. However,</p> <ul style="list-style-type: none"> <li>- In the video of the public meeting, it was said multiple times that the choke point wasn't the intersection off the highway, but the intersections at Ute and Olympic. I don't understand how adding a new access point to the west side of these junctions help since in my experience, most of the hold up is traffic coming from I-80 heading into the east side of Kimball junction (Best Buy, Home Goods, Smiths, etc). When getting off I-80 headed to (Walmart, Whole Foods, the Outlet Malls, etc) I have never experienced issues. So, unless you can prove how this helps divert enough traffic, I'm not sure I agree with this one.</li> <li>- As a local of 15+ years, though, it's very clear to me how I could make use of the new access point and how it could change my trips to and around Kimball Junction. I am just not sure if it would actually help with enough ski and Old Town traffic. The "improvements" to the Ute and Olympic intersections are unclear.</li> <li>- I do very much like the pedestrian tunnel and urge you to put it as close to the Ute intersection as possible and don't even allow pedestrian traffic on the surface roads (no walk signals, sidewalks or anything else).</li> </ul> <p>Alternative Option B:</p> <ul style="list-style-type: none"> <li>- This one makes the most sense to me to improve traffic flow to/from Old Town / Ski areas.</li> <li>- I do think you'll have a hard time selling this one without putting grasses or some greenery on the trench cover. Would love to see an option here like the Highline Park in NYC. So pedestrians could cut through/over the trench cover to have an easier, more enjoyable path from the transit center to say, the movie theater. The development in Kimball Junction, while not the responsibility of UDOT, is not very walkable, but they did a decent job near Home Good and the Univ. Utah Health Care center.</li> <li>- I am curious if at a later date, the "new access point" in Option A could be added to this option? Or if that could be added in addition to this.</li> <li>- One thing to consider is what happens if someone accidentally goes in the depressed traffic area, but wants to get to one of the businesses? How far would they need to go before they turn around? Can they reasonably turn around? Particularly on the North side of I-80, this is something that should be considered, and I hope there is the ability to do a U-turn. Why do I ask about this? I see tourists who have clearly never been here do the stupidest things and while it is an edge case, it will happen more often than you expect.</li> </ul> <p>Alternative Option C:</p> <ul style="list-style-type: none"> <li>- I like this one the least because I see it as just making things in the area bigger, not smarter.</li> <li>- I have taken the bus to/from SLC and I don't see the addition of the HOV lane improving the traffic significantly. As I mentioned in Option A, the traffic going from I-180 to the west side of Kimball Junction (Whole Foods, Transit Center, etc) has never been an issue as far as I'm concerned.</li> <li>- I do like the pedestrian tunnel.</li> <li>- I think the extended right turn lane on NewPark Blvd should be included in all options. Same for the extended left turn lane on Ute Blvd.</li> <li>- I also like the idea of an additional lane on I-80, but I'm not sure if it should always be restricted to HOV/Transit. I would want to see data on how many people in the AM hours are already HOV ready. I think there are more workers and school commuters that don't fit this criteria.</li> </ul> <p>Questions to consider:</p> <ul style="list-style-type: none"> <li>- It sounds like UDOT has done a better job on realistic traffic studies than developer who love to only do traffic studies in October and April. However, I strongly urge UDOT to look at the highest 15% of traffic days instead of just the 85% as stated in the video. When you know traffic / population are going to increase significantly in Utah, why wouldn't you look at these edge cases? Also, it would do a lot to win over the community if you even just looked at a handful of these edge cases. Our experience with developers is that they do the least effort possible. We don't want to see that with UDOT because it's a much larger investment. And knowing we will get the Olympics again changes how incentivized developers are going to be to develop in this area. Long story short..... I do not believe you are using the best model to predict traffic flowing through 2050. Whatever model you are using, please increase it by at least 15% and then I will believe you are planning for the right kind of traffic.</li> <li>- Before selecting any one of these plans, please consider (and possibly map out) what additional improvements you could make to each plan in say 15 years. Again, I do not believe you are using the right model and fully expect us to need improvements in that time.</li> <li>- On the video call, a question was asked about adding an "exit" to improve traffic flow into the Ecker Hill Park and Ride. The answer implied that the National Highway Organization (not sure of the name) would not allow this. Could we just start the access road from that point? Instead of "adding" an exit, we would just be "moving" it. And this more than anything encourages public transportation. I would highly encourage you to look into this option more. Because I think it would be a) great for the the Olympics to take local residents into school/work and b) would be an EXCELLENT way to encourage skiers and visitors to take the bus to the resorts and Old Town.</li> </ul> <p>Thank you!!!</p>
60	Anne Campillo	<p>I hope there is bus top or shed in front of the church. Thank you</p> <p>Web</p>
61	-	<p>Timing of signal lights and/or traffic sensors need to better incorporated.</p> <p>Web</p> <p>Signal Lights are clearly exacerbating traffic during rush traffic hours. And, when there is limited to no traffic, lights unnecessarily still cycle through for no reason.</p> <p>in both cases, traffic flow can be greatly improved by simply better timing of signal lights based on traffic flow vs. creating a clog point at Kimbal before you even enter or exit hwy 80.</p>
62	Marion Wohlrab	<p>Similar Option B - keep existing lanes for traffic going to businesses in Kimball and under tunnel SR224 for through traffic directly to hwy ramps.</p> <p>Web</p> <p>If not possible to directly under tunnel then create green space on top between lanes, or build affordable housing between the frontage roads.</p> <p>This is a mining town so time to dig some tunnels. Seen 1000 times in European cities, where this concept is fully implemented and embraced.</p> <p>Thank you</p>
63	jack Fenton	<p>Please landscape the Kimball Junction exit.</p> <p>Web</p> <p>It was rebuilt for the 2002 Olympics, with many artists renderings showing sculptures on the 6 cement blocks &amp; aspens trees etc.</p> <p>It's been 21 years, and not a single tree planted.</p> <p>Park City is an economic powerhouse in Utah, and the entry SUCKS. Visually.</p>
64	Glenn Wright	<p>I am in favor of the option that depresses RT 234 at Ute and Olympic intersections</p> <p>Web</p>



65	JC Grosvenor	C does nothing but kick the can down the road.  Option B is the most forward looking as it will move the most traffic from I-80 towards the resorts, and from the resorts to I-80. However, it needs a new bridge across I-80 similar to the bridge illustration in Option A. This bridge must be a connector, back and forth, from Rasmussen to Landmark to facilitate local traffic while keeping local traffic from the 224 interchange.	Web
66	Tyler Pulsipher	I'm working in deer valley and the traffic lights at kimball junction are an absolute joke. Even in the off season you can sit sometimes up to four light changes and the timing of the lights do not accommodate traffic.	Web
67	Chuck ESCOTO	Go with alternative B. Or do an over pass around Kimball Junction	Web
68	Kelly Gallagher	Hello, I have some comments regarding the criteria, measures and data. As a preface, I'm an engineer living in Jeremy Ranch and using Kimball Junction, so data is critical to a good decision. I'm pretty sure you already have all of my comments in your criteria, but here goes:  Primary criteria should be to minimize both the amount of time a car needs to get through the Junction intersections including NS and EW, and also minimize the number of steps a walking person needs to cross the same intersections. Bikes are not a huge issue as there are very few bikes using the intersection (comparatively). Measures/data - measure the number of cars going through the intersections, NS and EW. Do it in peak ski season to understand the real need, shoulder season does not show the need to change anything (no real issues currently). Get a count of ridership on the buses and also the High Valley Transit buses/vans/microbuses, from the administrators of the services. Bikes? I don't know of a good way to measure, but bikes are not used by folks to go shopping. But anecdotally, I NEVER see bikes parked at shops where people will come out with bags of items they have purchased, like I have seen in Amsterdam and in Germany. I only see bikes used for recreation, and the existing underpasses seem to be adequate. If there is data (or a way to get it) this would be useful. Walkers - get a count on the number of times per day the crosswalk buttons are activated. Folks going out shopping will not go out of their way to walk an extra block to cross in the underpass that is already in place - too far with packages. The existing crosswalk location is more convenient and is close to rapid transit, so this data should be usable for projections in my opinion. A final thought is regarding parking/parking lots. If desired, use a drone to fly over the KJ area parking lots at predefined times to photograph the parking lots, so you could count the cars. This could provide another set of data regarding cars in/out of KJ that are shopping as opposed to just driving through. Thank you for your consideration, and I am really pleased with the thorough job you have been doing. Also your outreach is commendable.	Web
69	Ron Shultz	We need sound walls between the fwy and frontage roads. Please!	Web
70	Chris Mega	No specific comments on any of the current proposals - The tradeoffs are difficult to understand as a layperson. As a realist, assuming a project goes through, please pick the one that disrupts the Outlet areas the least. If the goal is to ease traffic to/from I80, there's little reason to disturb the already overblown retail spaces in the outlets, whole foods, walmart area, along with 2200W and Overland Drive sections. No more rotaries please.  That said, in my lay opinion the traffic issues cannot be truly fixed at Kimball Junction. All that will be accomplished by any streamlining off I80 will be to get more traffic, more quickly, to the next bottleneck at Canyons, and all the way into Park City. Funnelling quicker access to the backup at Canyons will just make the backup on 224 accumulate faster, and guarantee it'll back up right back into Kimball Junction / Redstone area - only faster. As more and more businesses come into Kimball, that invites more retail traffic, clogging the system even further.  Those trying to get outbound from Park City proper to I80 already have an alternative via Kearns and Rt.40. That is not always fun either, but that area could be an area of focus too. If it were easier to get to 40, then 80, there's no reason to tweak Kimball. Much of the straight-through Kimball traffic would go away because there's an uncluttered alternative.  One simple fix to Kimball is to allow longer left-turn only access to/from all the areas in Kimball - Redstone, UOP, McDonald's. Letting more cars make left turns reduces the "single line" backup that happens because cars are unable to make a left during the tragically short light cycles.  I80/224 construction will be drudgery to live through, and my opinion within 18 months not solve any traffic issues, and will in fact create more because these proposals do not invite discussion of a moratorium on overbuilding of condos, homes, or businesses in the Kimball / 224 area.  The committees have put a lot of work into this, which I respect and appreciate. I just think they're readying to spend money that doesn't need to be spent on this particular problem. Traffic is traffic. Don't inconvenience the many for the sake of some that need to get on/off I80 two minutes quicker. Like any congested area (I grew up outside Boston), just tell people to add 10 extra minutes to their commute, or leave 10 minutes earlier in the AM. 10 extra minutes will inevitably grow to 20... but that won't be because Kimball Junction needed tweaking. It's because more condos and retail got built, and money seems to win over convenience.  (Heaven save us from the Olympics. It's great they might return, but Kimball construction today will not make a dent in that impending traffic fiasco.)  Thanks for listening.	Web
71	Duncan Silver	Alternative B is the best idea, but can be improved.	Web
72	Carol Giffen	Wildlife crossing 224 currently pose a risk to vehicles and bicycles, and usually end very badly for the wildlife. While these might not be threatened or engaged species, they are here and it is a safety issue. Could the screening criteria be expanded to acknowledge this issue and assess alternatives for mitigating approaches? Or at least not preclude possible modifications to address this safety issue?	Web
73	Gregory Proffit	Do nothing: seasonally and temporally, there are some backups at the Junction. Tolerate it. Don't build more lanes to attract more private auto traffic! I'm a Kimball Junction resident and I know how to ignore / work around Dysfunction Junction. Do something: replace the night sky clogging with down lighting. And install sound walls for us. I-80 is deafening and we'd like some relief from the noise. Thank you for your consideration.	Web
74	Carol Giffen	I would like to see more specific screening criteria to assess the options for both ease of snow plowing/removal and mitigation of flooding due to large quantities of water from snowmelt. These situations are clearly part of the 224 environment.	Web
75	Christopher M. Conabe	Thank you for your stewardship and continued efforts to find relief to traffic congestion caused by active growth.	Web
76	Linda & David George	Kimball Junction experiences very high volumes of traffic year-round, and with population growth and ongoing interest from regional and international visitors, the volume will continue to increase.  - An incremental approach such as Alternative C is not enough.  - We strongly support Alternative B: grade separated intersections. This phrase from the description is key: "separate local and through traffic in the area."  - Alternative A is problematic because while it does route traffic differently, Landmark Drive is busy too.  [As a side note, direct access from I-80 to the Ecker Hill Park and Ride could help in addition to Alt B. When drivers see the SR-224 exit backed up they could make a quick change toward the Park & Ride. That, plus the use of dedicated bus lanes on SR-224, should help move day visitors through Kimball Jct area.]  Thank you for your work on this project.	Web
77	Dara O'Reilly	I am against moving forward with any of proposed designs ideas. The dollars, construction, delays, pollution, and more. Will not solve the problem which is limited to a couple hours a day at worst.  Before moving forward on any next steps, I want to see a current wildlife, traffic, water and environmental study completed by outdidthird part/	Web

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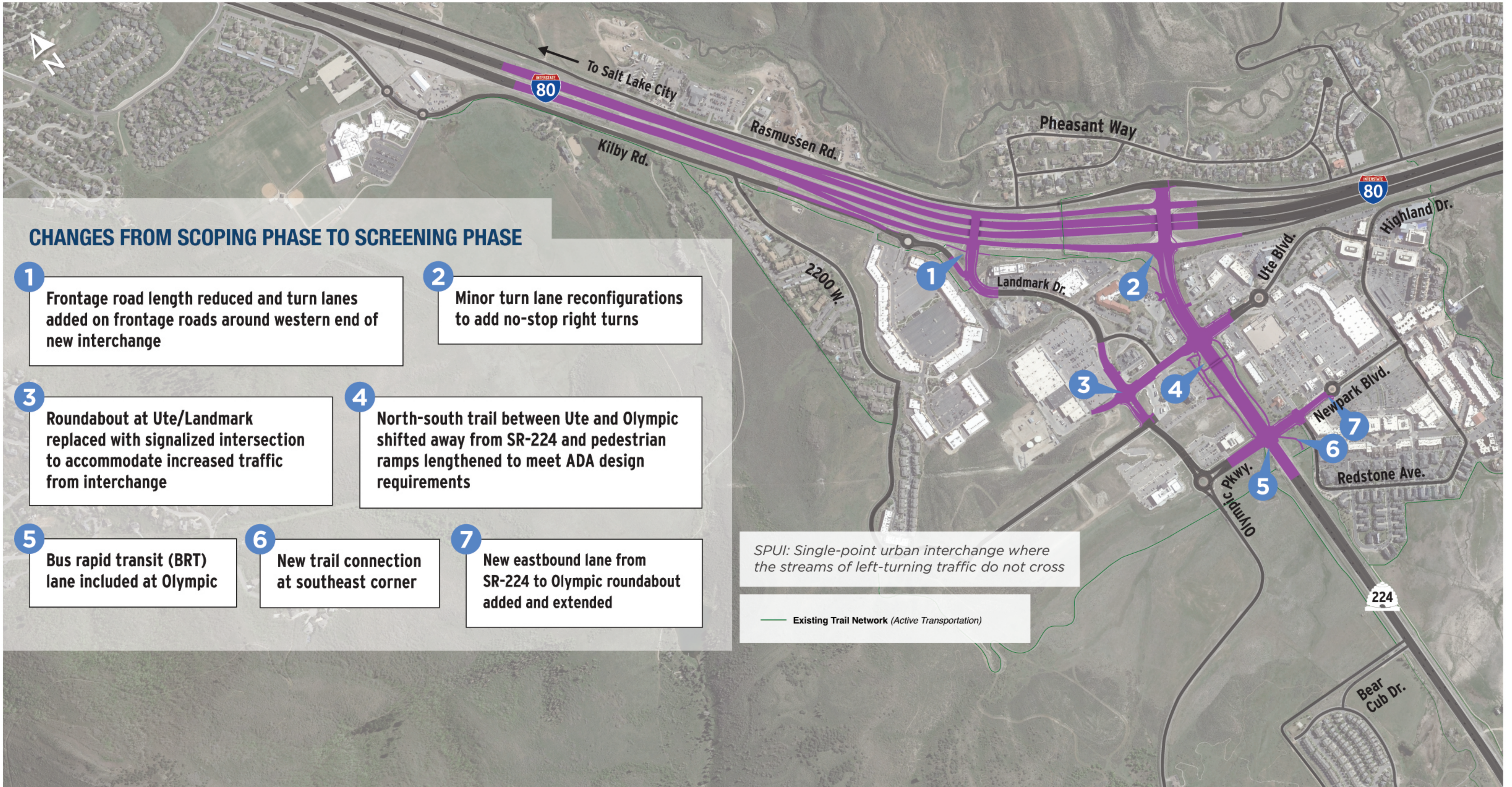
## **APPENDIX C**

### Refined Alternatives Exhibits

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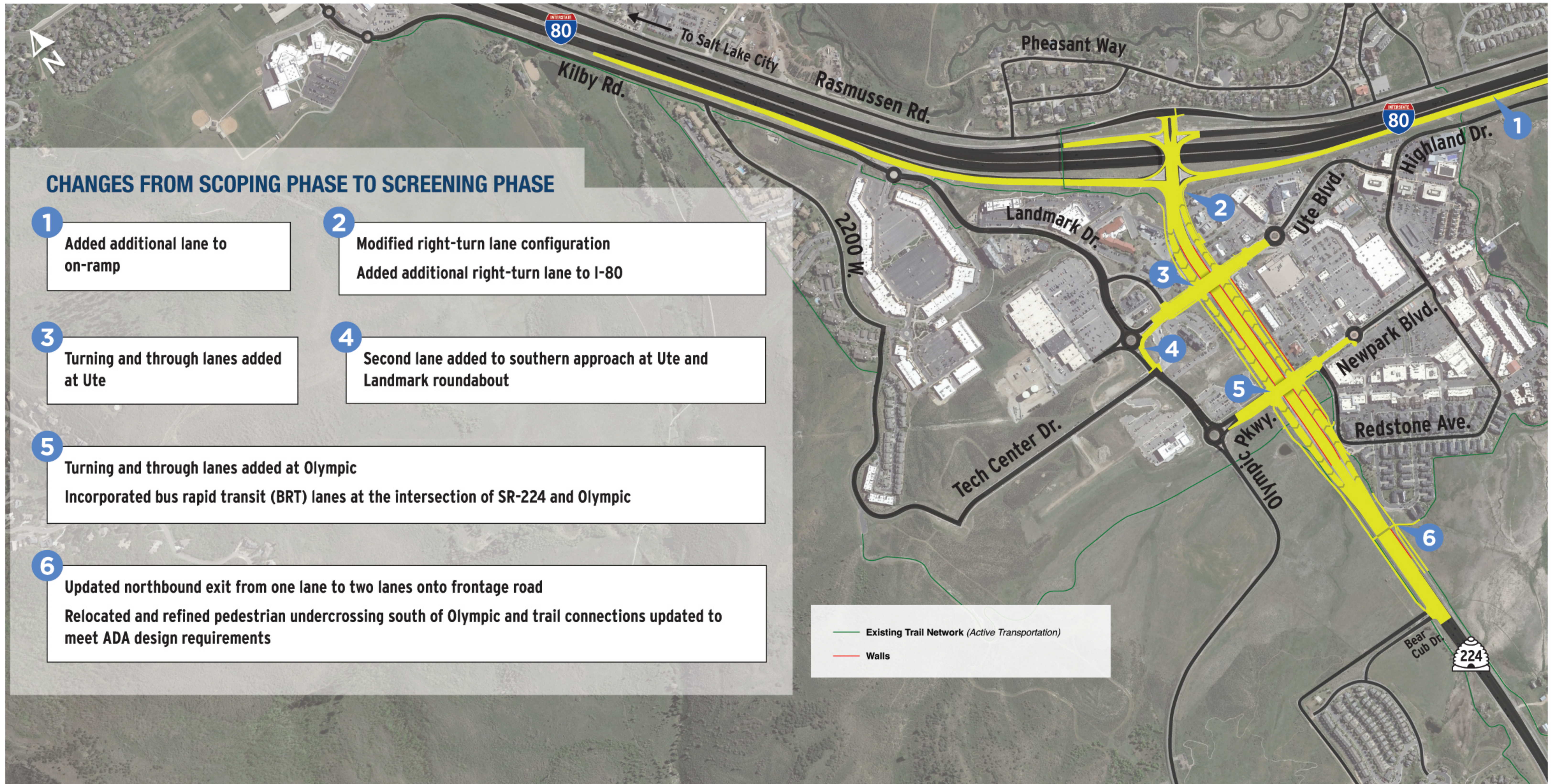
# ALTERNATIVE A (REFINED)

## SPLIT-DIAMOND INTERCHANGE WITH INTERSECTION IMPROVEMENTS



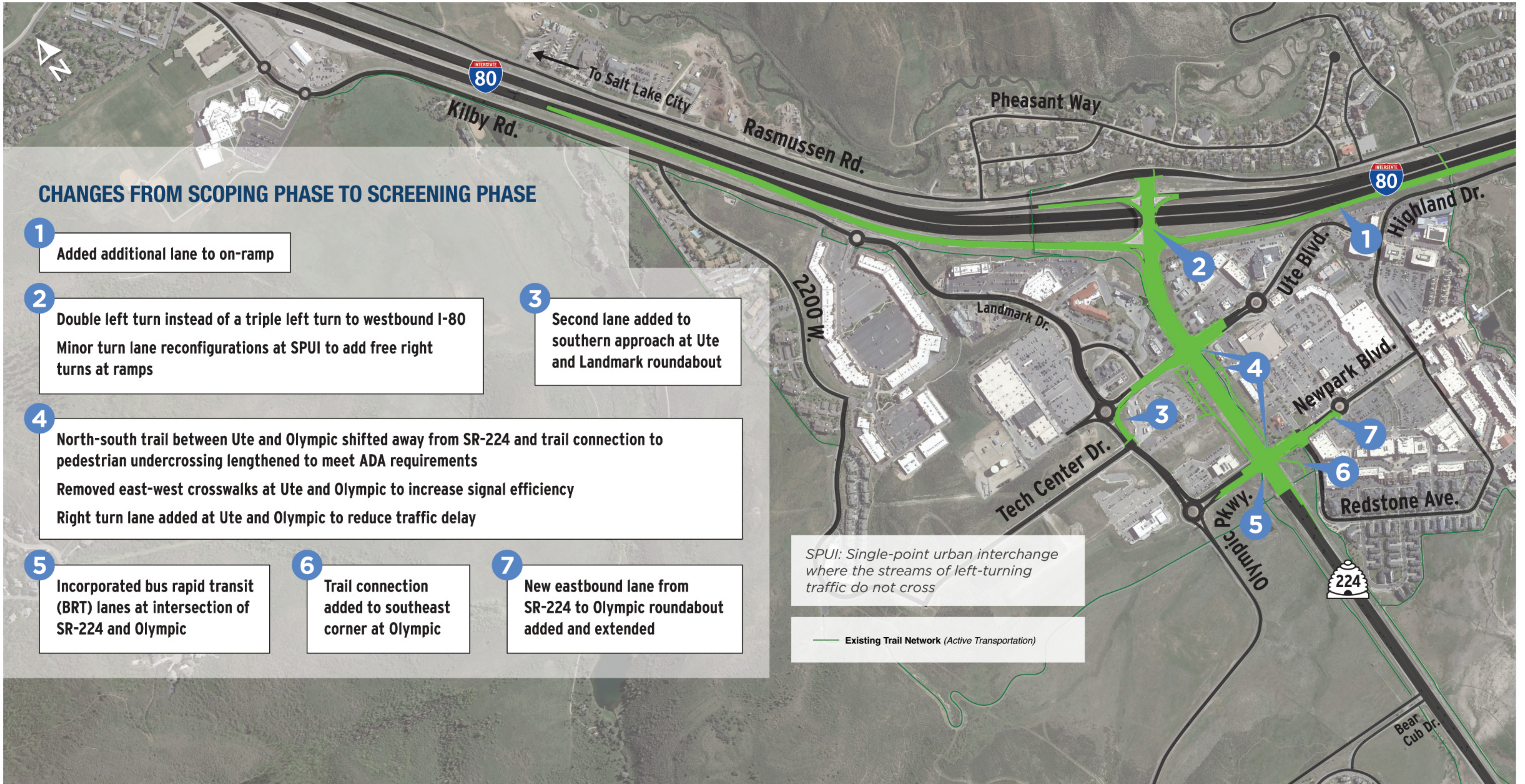
# ALTERNATIVE B (REFINED)

GRADE-SEPARATED INTERSECTIONS WITH ONE-WAY FRONTAGE ROADS TO THE I-80 INTERCHANGE



# ALTERNATIVE C (REFINED)

## INTERSECTION IMPROVEMENTS WITH PEDESTRIAN ENHANCEMENTS



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**APPENDIX D**

Kimball Junction EIS Traffic Memorandum

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# Memo

Date: Wednesday, January 31, 2024

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Project: Kimball Junction EIS

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To: HDR

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From: Parametrix

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Subject: Kimball Junction Alternatives and Traffic Modeling Data

## Purpose

This memorandum documents the traffic analysis conducted for the three action alternatives for the Kimball Junction Environmental Impact Statement (EIS) (Alternatives A, B, and C).

## Roadway Traffic Volumes

The Summit County/Wasatch County travel demand model (v1 - 2020-06-10) (referred to in this document as the Summit County model) was used to generate traffic forecasts for the 2050 No Action Alternative and for all three action alternatives for use in the VISSIM traffic simulation model. The model is a traditional four-step travel demand model consisting of trip generation, trip distribution, model split, and trip assignment. The development and refinement of the Summit County model for this study are documented in Attachment A to this memo, the *Kimball Junction EIS Existing and 2050 No Action Mobility Memo*.

## Alternatives for Level 3 Screening

Analysis was conducted on the three Kimball Junction action alternatives.

**Alternative A** includes the following concepts:

- Split diamond interchange with bridge crossings over Interstate 80 (I-80)
- One-way frontage roads north and south of I-80
- Intersection improvements at the intersections of Ute Boulevard and Olympic Parkway with State Route (SR) 224
- Pedestrian tunnel just south of Ute Boulevard
- Widened northbound and southbound lanes on SR-224 between Ute Boulevard and Olympic Parkway
- Dual left-turn lanes on SR-224 at both Ute Boulevard and Olympic Parkway
- Signalized intersection at Ute Boulevard/Landmark Drive to replace the existing roundabout
- Additional lane eastbound on Newpark Boulevard from SR-224 to the Uinta Way roundabout (ends in right turn only)

**Alternative B** includes the following concepts:

- Interchange improvements
- Additional lane added on I-80 eastbound off-ramp
- Additional northbound right-turn lane at the SR-224 and I-80 interchange
- Third lane added on the eastbound I-80 on-ramp from the single-point urban interchange (SPUI)
- SR-224 depressed from just north of Bear Cub Drive to the SR-224 and I-80 interchange
- Grade-separated signalized intersections at Ute Boulevard and Olympic Parkway with bridges
- One-way frontage roads east and west of depressed SR-224
- Existing grade-separated pedestrian crossing near Olympic Parkway relocated to the south
- Additional lane on the northbound approach at the Ute Boulevard/Landmark Drive roundabout

**Alternative C** includes the following concepts:

- Additional lane on I-80 eastbound off-ramp
- Right-turn lane added from the eastbound I-80 off-ramp to Ute Boulevard
- Additional northbound right turn lane at the SR-224 and I-80 interchange
- Additional westbound through lane at the intersection of SR-224 and Ute Boulevard
- Dual left-turn lanes on SR-224 at both Ute Boulevard and Olympic Parkway
- Additional lane on the northbound approach at the Ute Boulevard/Landmark Drive roundabout
- Additional lane eastbound on Newpark Boulevard from SR-224 to the Uinta Way roundabout (ends in right turn only)
- Extended left-turn lane on westbound Ute Boulevard
- Pedestrian tunnel added just south of Ute Boulevard and east-west crosswalks across SR-224 removed at Ute Boulevard and Olympic Parkway
- Extended right-turn lane added on westbound Newpark Boulevard
- Widened northbound and southbound lanes on SR-224 between Olympic Parkway and Ute Boulevard

## Mobility Analysis

With refined traffic volume forecasts from the regional travel demand model, 2050 weekday AM and PM peak hour traffic volumes at key intersections were developed for each action alternative. The traffic volumes were developed using 2021 and 2022 weekday AM and PM peak-hour traffic volumes and the volume changes between the baseline (2019) and 2050 travel demand model results for each respective alternative. This methodology is consistent with how AM and PM peak-hour traffic volumes were developed for 2050 No Action.

Figure 1 through Figure 5 illustrate traffic volumes on key roads for existing conditions, 2050 No Action conditions, and the three action alternatives (A, B, and C). Travel demand model results show that the new roads and connections with Alternative A and Alternative B would produce a shift in traffic volumes. Specifically, with Alternative A, traffic volumes show the effect of the new “back-door” access to Kimball Junction. There would be a reduction of traffic volume on SR-224 between I-80 and Olympic Parkway and an increase on Landmark Drive connecting to the new tight diamond interchange.

For Alternative B, the grade separation would result in SR-224 traffic volumes splitting between the grade-separated segment of SR-224 and the at-grade frontage roads between Ute Boulevard and Olympic Parkway. Many drivers use the grade-separated segment of SR-224 to travel between I-80 and the area south of the Olympic Parkway and thereby avoid the signalized intersections. Note that traffic heading to I-80 eastbound or to Rasmussen Road must use the frontage road since the northbound grade-separated segment of SR-224 provides access to the westbound I-80 on-ramp only.

Finally, Alternative C would result in a small change in the traffic volume due to the capacity increases on SR-224. However, the change would be smaller than with Alternatives A and B.

Figure 1. Existing Weekday AM and PM Peak-hour Traffic Volumes

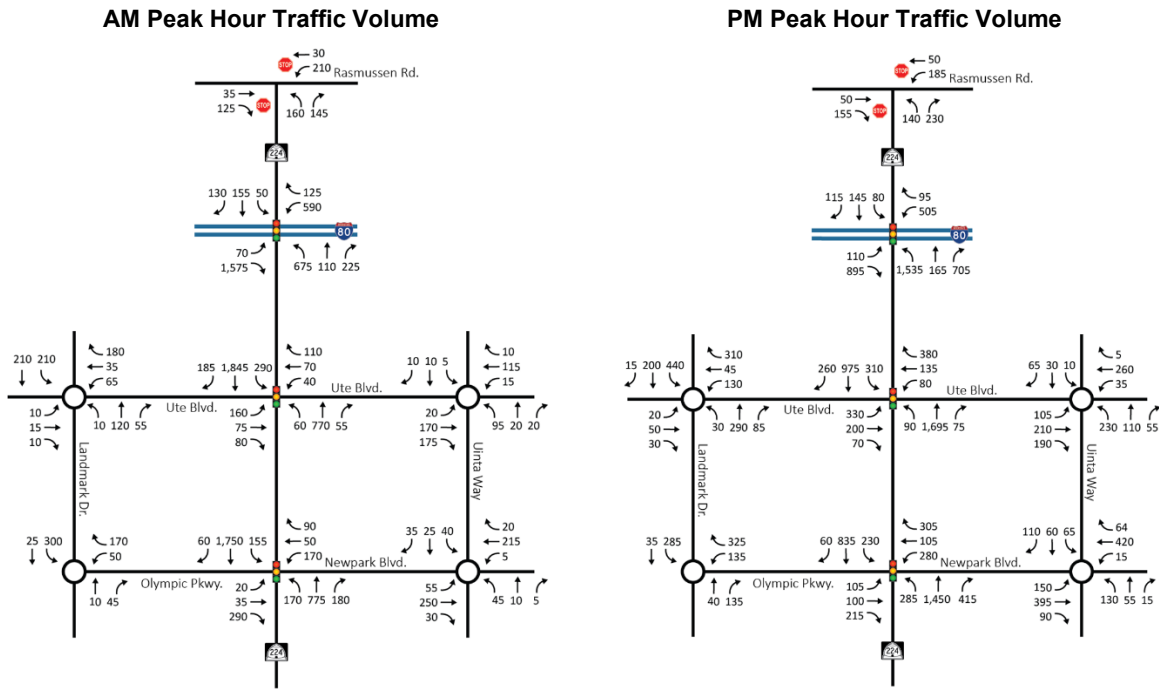


Figure 2. 2050 No Action Weekday AM and PM Peak-hour Traffic Volumes

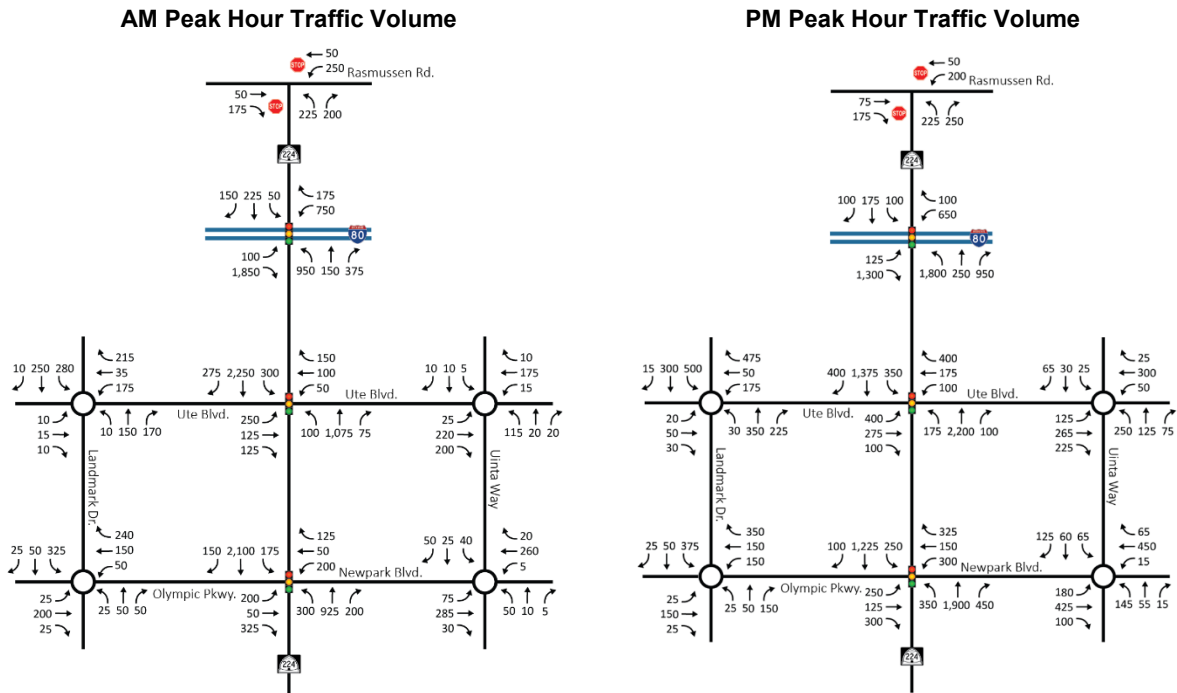


Figure 3. Alternative A (2050) Weekday AM and PM Peak-hour Traffic Volumes

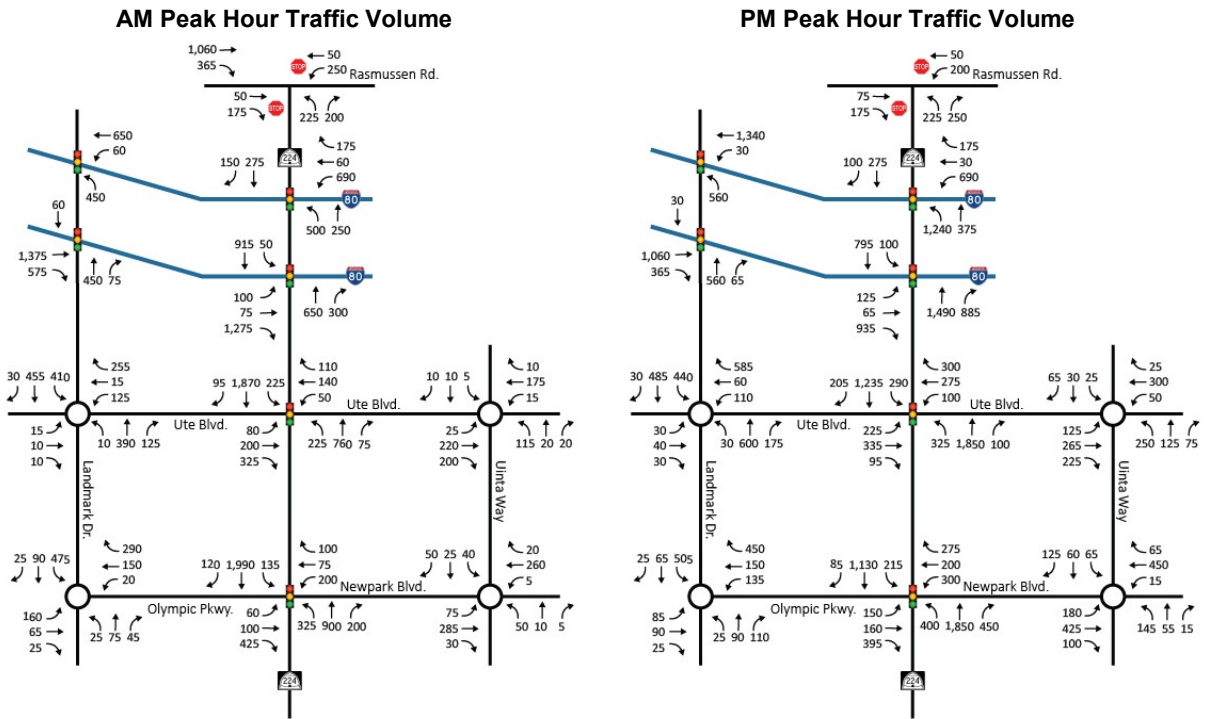


Figure 4. Alternative B (2050) Weekday AM and PM Peak-hour Traffic Volumes

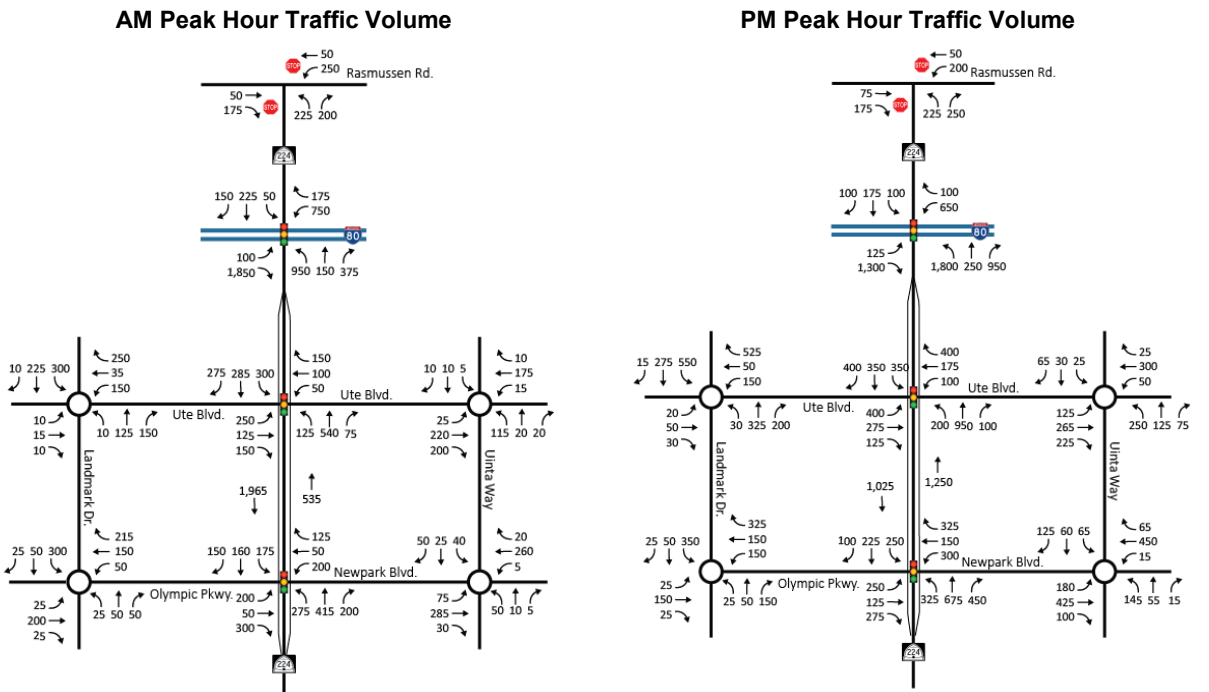
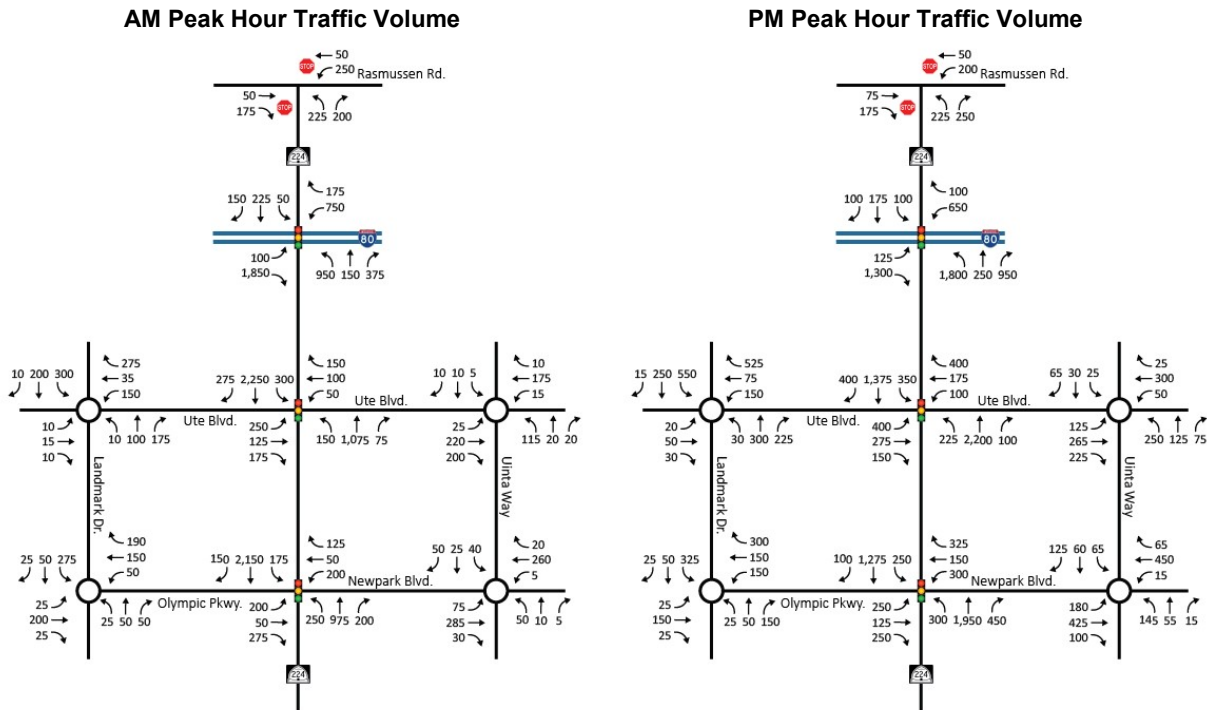


Figure 5. Alternative C (2050) Weekday AM and PM Peak-hour Traffic Volumes



## Performance Measures

The mobility criteria for Level 3 alternative screening were used to analyze all three action alternatives. Measures requiring traffic simulation results were analyzed using the VISSIM v2022 microsimulation traffic model. The mobility measures are:

1. Percent served
2. Intersection level of service (LOS)
3. Arterial LOS and vehicles travel time
4. BRT (bus rapid transit) travel time
5. Vehicle queue length
6. Pedestrian walk time
7. Level of traffic stress (LTS)

### PERCENT SERVED

Percent served is a comparison of the volume input to the output in VISSIM model. This comparison is a check to confirm that the proposed input volumes are reaching their coded destination and helps flag congestion bottlenecks in the model. A percent served near 100% indicates that the VISSIM model is adequately serving the input demand. A percent served less than 100% indicates potential congestion and that other traffic performance metrics in the model might be underrepresented.

### INTERSECTION LOS

Intersection LOS is the measure of the overall operating conditions of an intersection. As defined by the *Highway Capacity Manual* (HCM), it is described on an A-through-F scale with



LOS A indicating conditions with minimal delay and LOS F indicating intersection failure. The Utah Department of Transportation (UDOT) seeks to achieve LOS D or better in most settings. Node data were collected from the VISSIM model in 15-minute increments to determine the average vehicle delay at each intersection during the peak hour of each model. The peak hour of the AM model was 8:00–9:00 AM, and the peak hour of the PM model was 4:00–5:00 PM. Using the average vehicle delay, the level of service was determined from the HCM thresholds for unsignalized and signal-controlled intersections. Table 1 shows the HCM intersection LOS thresholds.

**Table 1. Intersection LOS Definition**

In seconds per vehicle (sec/veh)

LOS	Unsignalized Intersection Average Delay (sec/veh) <sup>a</sup>	Signalized Intersection Average Delay (sec/veh)
LOS A	0–10	0–10
LOS B	10–15	10–20
LOS C	15–25	20–35
LOS D	25–35	35–55
LOS E	35–50	55–80
LOS F	>50	>80

Source: HCM 7th Edition

<sup>a</sup> Reported for the worst stop or yield-controlled approach

**ARTERIAL LOS AND TRAVEL TIME**

Similar to intersection LOS, arterial LOS is based on an A-through-F scale with thresholds according to the average speed of vehicles compared to the segment’s free-flow speed or the posted speed limit. Using segment travel time and average speeds from VISSIM, arterial LOS was calculated using HCM criteria. Arterial LOS was evaluated for the following segments of SR-224 according to the HCM criteria summarized in Table 2:

1. Southbound SR-224 from I-80 interchange to Ute Boulevard
2. Southbound SR-224 from Ute Boulevard to Olympic Parkway
3. Southbound SR-224 from Olympic Pkwy to Bear Cub Drive
4. Northbound SR-224 from Bear Cub Drive to Olympic Parkway
5. Northbound SR-224 from Olympic Parkway to Ute Boulevard
6. Northbound SR-224 from Ute Boulevard to I-80 interchange

Travel time data in the study area was gathered for two routes that reflect major traffic issues faced during AM and PM peak periods. The first travel time route is from the eastbound I-80 off-ramp gore to southbound SR-224 about 4,500 feet south of Olympic Parkway. The route captures the congestion experienced during AM peak periods when vehicles exit I-80 and travel south on SR-224 toward ski resorts and employment destinations in Park City. The second travel time route begins on northbound SR-224 about 4,500 feet south of Olympic Parkway and

continues north to the westbound I-80 on-ramp. This route captures the reverse traffic pattern in the PM when vehicles travel north from ski resorts and other destinations toward I-80.

**Table 2. Arterial LOS Definition**

In miles per hour (mph)

LOS	Base Free-flow Speed or Speed Limit						
	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph
LOS A	>20	>24	>28	>32	>36	>40	>44
LOS B	>17	>20	>23	>27	>30	>34	>37
LOS C	>13	>15	>18	>20	>23	>25	>28
LOS D	>10	>12	>14	>16	>18	>20	>22
LOS E	>8	>9	>11	>12	>14	>15	>17
LOS F	<8	<9	<11	<12	<14	<15	<17

Source: HCM 7th Edition

**TRANSIT TRAVEL TIME**

Transit service is expected to maintain an important role in moving people to and through the Kimball Junction area. The SR-224 bus rapid transit (BRT) service is planned to be constructed within the next 5 years. To evaluate the BRT performance, additional travel time segments have been added to the VISSIM models to collect the BRT travel time.

**VEHICLE QUEUE LENGTH**

Vehicle queuing was measured using queue counter data collected from the VISSIM simulation model for movements that could cause queue spillback onto the I-80 mainline:

- Eastbound I-80 off-ramp during the AM and PM peak hours
- Westbound I-80 off-ramp during AM and PM peak hours

The queue data for the AM and PM peak hours were calculated for the 95th-percentile queue lengths. The 95th-percentile queue length is the queue length that has a 5% probability of being exceeded during the peak hour.

**PEDESTRIAN WALK TIME**

Pedestrian walk times were calculated for four origin/destination pairs in the Kimball Junction area (Figure 6). The origin/destination pairs were selected to test travel times across major roads (SR-224, Ute Boulevard, and Olympic Parkway) and between significant land use destinations (grocery stores, the Kimball Junction Transit Center, and residential areas). All four origin/destination pairs straddle SR-224. Two are located near Ute Boulevard and the other two near Olympic Parkway. Walk times consider distance, grades, and signal delay for pedestrian crossings at signalized intersections. The origin/destination pairs are:

1. Between the Whole Foods grocery store and Newpark residential units
2. Between the Kimball Junction Transit Center and Smith’s grocery store
3. Between the Skullcandy building and Chase Bank
4. Between the Skullcandy building and Redstone residential units

Figure 6. Pedestrian Walk Time Origin/Destination Pairs



### LEVEL OF TRAFFIC STRESS

LTS is a measurement that quantifies the amount of discomfort that people feel when they cycle or walk near vehicles. This metric is used to identify pedestrian and bicycle user comfort based on street characteristics such as number of lanes, traffic volume, traffic speed, and ease of intersection crossing. LTS is a 1-to-4 rating with LTS 1 representing the least stress and LTS 4 representing the most stress. LTS was measured on road segments and at intersections. For road segments, LTS was evaluated separately for cyclists and pedestrians. In the Kimball Junction area, there are numerous separated paved trails. Trails with sufficient separation from roads to function as a separate facility are categorized as LTS 1 in this analysis.

### Intersection LTS (Cyclists and Pedestrians)

Three main criteria were used to identify the intersection level of traffic stress for cyclists and pedestrians:

- Intersection control
- Number of lanes to cross including turn lanes
- Posted speed

Table 3 illustrates the metrics used to identify LTS at the intersections in the Kimball Junction area. The project integrates an adapted version of the bicycle and pedestrian LTS, as described in Peter Furth’s 2017 update to his original 2012 LTS methodology, published by the Mineta Transportation Institute. This methodology incorporates engineering judgment and aligns with national best practices.

Table 3. Criteria for Intersection LTS (Bicyclists and Pedestrians)

Intersection Control	Number of Lanes to Cross (includes turn lanes)	Posted Speed			
		25 mph or less	30 mph	35 mph	40+ mph
Minor approach stop signs/uncontrolled	1-2	LTS 1	LTS 1	LTS 2	LTS 3
	3-4	LTS 2	LTS 2	LTS 3	LTS 4
	5+	LTS 2	LTS 3	LTS 4	LTS 4
Rectangular rapid flashing beacon	1-2	LTS 1	LTS 1	LTS 2	LTS 3
	3-4	LTS 2	LTS 2	LTS 2	LTS 3
	5	LTS 2	LTS 3	LTS 4	LTS 4
Signal/HAWK/functional priority/roundabout	1-2	LTS 1	LTS 1	LTS 1	LTS 1
	3-5	LTS 2	LTS 2	LTS 2	LTS 2
	6+	LTS 3	LTS 3	LTS 3	LTS 3
Dedicated bicycle signal phase	1-2	LTS 1	LTS 1	LTS 1	LTS 1
	3-5	LTS 2	LTS 2	LTS 2	LTS 2
	6+	LTS 2	LTS 2	LTS 2	LTS 2

**Bikes Level of Traffic Stress (BLTS)**

BLTS is a planning tool to evaluate comfort for cyclists to use road segments based on the following factors:

- Presence of a dedicated bike facility
- Posted speed
- Daily traffic volume
- Number of lanes

Table 4 and Table 5 illustrate metrics used to identify the BLTS based on availability of dedicated bicycle facilities with a BLTS score from 1 to 4 for each road segment. Note that the BLTS thresholds for traffic volume are relatively low. Most Kimball Junction roads have existing and future traffic volumes above the highest threshold.

Table 4. Criteria for BLTS in Roads with Mixed Traffic (No Bicycle Facilities)

Number of Auto Lanes	Average Daily Traffic	Posted Speed						
		20 mph	25 mph	30 mph	35 mph	40+ mph	45 mph	50+ mph
1-3 (with centerline)	0-750	LTS 1	LTS 1	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
	751-1,500	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4
	1,501-3,000	LTS 2	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
	3,000+	LTS 3	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
4-5	0-8,000	LTS 3	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
	8,000+	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4
6+	Any ADT	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4

Methodology adapted from Peter Furth's 2017 LTS methodology update.

Table 5. Criteria for BLTS in Roads with Dedicated Bicycle Facility

Number of Auto Lanes	Bike Facility Reach (Width + Buffer)	Posted Speed					
		< 25 mph	30 mph	35 mph	40 mph	45 mph	50+ mph
2-3	6+ feet	LTS 1	LTS 1	LTS 2	LTS 3	LTS 3	LTS 3
	4 or 5 feet	LTS 2	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
4-5	6+ feet	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
	4 or 5 feet	LTS 2	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
6+	Any width	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4

Methodology adapted from Peter Furth's 2017 LTS methodology update.

### Pedestrian Level of Traffic Stress (PLTS)

Three main criteria were used to measure PLTS are:

- Sidewalk presence
- Number of travel lanes
- Posted speed

Table 6 illustrates the metrics used to identify the PLTS on Kimball Junction roads. Traffic volumes can also be a factor in PLTS, but, as with BLTS, the thresholds are relatively low. Most Kimball Junction roads have existing and future traffic volumes above the highest threshold. Additionally, volume data were not available for the smallest roads. Thus, roadway volume was not considered a factor.

Table 6. Criteria for PLTS

Sidewalk Presence	Number of Travel Lanes	Posted Speed				
		20 mph	25 mph	30 mph	35 mph	40+ mph
Complete both sides	2	LTS 1	LTS 1	LTS 1	LTS 1	LTS 2
	3+	LTS 1	LTS 1	LTS 1	LTS 1	LTS 2
Complete 1 side	2	LTS 2	LTS 2	LTS 2	LTS 2	LTS 3
	3+	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
Incomplete both sides	2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
	3+	LTS 2	LTS 2	LTS 4	LTS 4	LTS 4

Methodology adapted from Peter Furth's 2017 LTS methodology update.

## Results

This section presents the results for all three action alternatives plus limited results for an alternative termed Alternative B Original. During alternatives screening, UDOT determined that Alternative B—as constituted in the previous Kimball Junction Area Plan—would not pass traffic screening measures. It resulted in failing intersection level of service, vehicle queues that back onto the I-80 mainline, and low model percent served values. For these reasons, Alternative B was refined to add capacity-increasing elements. The results for Alternative B in the following tables represent the alternative with the refinements.

The results for Alternative B Original are included in this report for intersection level of service, model percent served, and vehicle queue lengths. Other measures are not reported since Alternative B Original already began refinement before the other measures were obtained.

All action alternatives show improvement over 2050 No Action conditions for vehicle traffic metrics. All three alternatives have better overall traffic operations in terms of percentage of the volume served, intersection LOS, arterial LOS, travel times, and queue lengths.

Table 7 summarizes the percentage of the served volume for existing conditions, 2050 No Action, all three action alternatives, and Alternative B Original. The 2050 No Action model served only 86% of the input volume, which indicates that the study area roads in the model are very congested and experience bottlenecks. All three action alternatives achieved 100% of the volume served, which indicates that the VISSIM model is adequately serving all the input demand. Alternative B Original does not achieve a percent served near 100%.

Table 7. Percent Served

Existing		2050 No Action		Alt A		Alt B Original <sup>a</sup>		Alt B		Alt C	
AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
99%	99%	86%	86%	100%	100%	92%	79%	100%	100%	100%	100%

<sup>a</sup> Alternative B Original is the original design for Alternative B without any refinements.

Table 8 summarizes the intersection LOS results for existing conditions, 2050 No Action, all three action alternatives, and Alternative B Original. Failing conditions are colored red for LOS F and orange for LOS E. Due to the shifted volumes using the new interchange on I-80 west of Kimball junction, the Ute Boulevard and Landmark Road intersection is assumed to be signalized for Alternative A.

Table 9 summarizes the arterial LOS results for existing conditions, 2050 No Action, all three action alternatives, and Alternative B Original. Failing conditions are colored red for LOS F and orange for LOS E, and acceptable conditions (LOS A through LOS D) are colored green. Note that LOS E or F on short segments of SR-224 or roads with closely spaced signals is not necessarily a cause for concern. Vehicles on short segments have little distance to accelerate to higher speeds. Additionally, closely spaced signals can cause frequent stopping even under less congested conditions. Thus, short segments are prone to lower arterial LOS values for normal conditions.

**Table 8. Intersection LOS and Average Delay**

Average delay in seconds per vehicle

Intersection	Existing		2050 No Action		Alt A		Alt B Original <sup>a</sup>		Alt B		Alt C	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
SR-224/Rasmussen <sup>b</sup>	B / 11	B / 12	B / 13	B / 12	E / 38	D / 30	C / 20	F / >100	C / 18	B / 13	C / 15	B / 12
SR-224/I-80	F / > 100	C / 25	F / >100	F / >100	D / 49	C / 34	F / >100	F / >100	D / 38	C / 29	B / 29	C / 24
SR-224/Ute	C / 29	D / 54	D / 37	E / 63	D / 48	D / 47	D / 53	F / >100	D / 41	D / 49	D / 36	D / 46
SR- 224/Ute w/ trench <sup>c</sup>	n/a	n/a	n/a	n/a	n/a	n/a	C / 28	E / 78	C / 21	C / 31	n/a	n/a
SR-224/Olympic	C / 31	F / >100	D / 36	F / >100	D / 43	D / 50	E / 71	F / 98	D / 44	D / 46	C / 30	D / 49
SR-224/Olympic w/ trench <sup>c</sup>	n/a	n/a	n/a	n/a	n/a	n/a	D / 37	E / 64	C / 21	C / 28	n/a	n/a
Ute/Landmark <sup>b</sup>	A / 3	F / 56	A / 5	F / >100	C / 27 <sup>d</sup>	D / 41 <sup>d</sup>	A / 3	F / >100	A / 3	A / 5	A / 4	B / 14
Ute/Unita <sup>b</sup>	A / 3	A / 5	A / 5	C / 16	A / 4	A / 9	A / 2	B / 13	A / 4	B / 8	A / 3	A / 9
Olympic/Landmark <sup>b</sup>	A / 2	A / 2	A / 6	A / 8	B / 14	D / 30	A / 3	A / 7	A / 5	A / 5	A / 7	A / 9
Newpark/Uinta <sup>b</sup>	A / 4	C / 19	A / 3	E / 38	A / 3	B / 10	A / 3	F / 66	A / 4	D / 17	A / 5	C / 20
I-80 WB frontage	n/a	n/a	n/a	n/a	A / 5	B / 13	n/a	n/a	n/a	n/a	n/a	n/a
I-80 EB frontage	n/a	n/a	n/a	n/a	C / 24	D / 35	n/a	n/a	n/a	n/a	n/a	n/a

<sup>a</sup> Alternative B Original is the original design for Alternative B without any refinements.

<sup>b</sup> LOS and delay for unsignalized intersections (including roundabouts) are reported for the worst approach.

<sup>c</sup> Includes delay measures from vehicles passing beneath intersection in grade-separated trench.

<sup>d</sup> Ute/Landmark intersection is signalized for Alternative A only.



Table 9. AM and PM Peak-hour Arterial LOS

Arterial Segment	Existing LOS / Avg Speed (mi/hr)		No Action LOS / Avg Speed (mi/hr)		Alternative A LOS / Avg Speed (mi/hr)		Alternative B Original <sup>a</sup> LOS / Avg Speed (mi/hr) <sup>b</sup>		Alternative B LOS / Avg Speed (mi/hr) <sup>b</sup>		Alternative C LOS / Avg Speed (mi/hr)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
<b>Southbound</b>												
Kimball Jct SB SR-224 to SB Ute Blvd	E / 15	E / 17	F / 12	F / 11	F / 12	F / 14	F / 7	F / 3	F / 13	F / 9	E / 15	F / 13
SR-224 SB Ute Blvd to SB Olympic Pkwy	E / 18	C / 27	D / 19	D / 22	E / 16	C / 26	F / 9	F / 13	E / 15	F / 10	D / 21	D / 18
SR-224 SB Olympic Pkwy to SB Bear Cub Dr	A / 50	A / 51	A / 51	A / 51	A / 49	A / 50	A / 49	A / 49	A / 45	A / 45	A / 50	A / 50
<b>Northbound</b>												
SR-224 NB Bear Cub Dr to NB Olympic Pkwy	C / 28	F / 8	D / 28	F / 6	D / 25	D / 19	F / 12	F / 9	D / 25	E / 22	C / 36	E / 19
SR-224 NB Olympic Pkwy to NB Ute Blvd	C / 29	F / 10	C/D / 28	F / 10	C / 27	C/D / 19	F / 12	F / 8	E / 16	E / 14	D / 20	F / 13
SR-224 NB Ute Blvd to Kimball Jct NB SR- 224	C / 29	D / 22	C / 25	D / 20	C / 28	C / 20	F / 14	E / 15	D / 18	D / 19	D / 21	C / 25

<sup>a</sup> Alternative B Original is the original design for Alternative B without any refinements.

<sup>b</sup> Measured on the north-south frontage roads adjacent to the SR-224 grade-separate trench.

Table 10 summarizes the vehicle travel time results for two travel time segments for existing, 2050 No Action, and all three action alternatives. All alternatives show improvement in travel time, whereas Alternatives B and C show the most savings in AM peak southbound travel time (more than 8 minutes) from the 2050 No Action model. Furthermore, the PM peak travel time for northbound also shows improvement in all alternatives with Alternative B having the highest savings from the No Action (about 7 minutes).

**Table 10. AM and PM Peak-hour Vehicle Travel Time**

In minutes and seconds (m:ss)

Travel Time Segment	Existing		2050							
			No Action		Alternative A		Alternative B		Alternative C	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Travel time SB	6:15	3:00	11:30	7:30	4:30	3:30	3:15	2:45	3:15	3:15
Travel time NB	2:30	7:45	2:30	9:30	4:00	4:15	2:30	2:45	2:30	3:45
<i>SB difference from No Action</i>	n/a	n/a	n/a	n/a	-7:00	-4:00	-8:15	-4:45	-8:15	-4:15
<i>NB difference from No Action</i>	n/a	n/a	n/a	n/a	+1:30	-5:15	0	-6:45	0	-5:45

Table 11 summarizes the BRT travel time and total travel time saving from the No Action model in the study area. The travel time results show that all three action alternatives have travel time improvement for the BRT routes in both peaks. Alternative A shows the highest saving in total travel time.

**Table 11. AM and PM Peak-hour Transit Travel Time**

In minutes and seconds (m:ss)

Alternative	AM		PM		Total Savings
	Travel Time	Savings from No Action	Travel Time	Savings from No Action	
2050 No Action	7:30	n/a	9:00	n/a	n/a
2050 Alternative A	6:45	0:45	7:15	1:45	2:30
2050 Alternative B	6:30	1:00	7:45	1:15	2:15
2050 Alternative C	6:45	0:45	7:45	1:15	2:00

Table 12 summarizes the 95th-percentile queue lengths at the eastbound I-80 off-ramp and at the westbound I-80 off-ramp during the AM and PM peak hours for existing, 2050 No Action, and all three action alternatives. The queue results show that the eastbound off-ramp will experience a long queue reaching the eastbound I-80 mainline during the AM peak hour for existing and 2050 No Action conditions. Furthermore, the queue results for the I-80 westbound off-ramp show a long queue for the 2050 No Action condition during the PM peak hour.

However, the queue results for all three action alternatives show an improvement in queue length at both ramps during the AM and PM peak hours such that no alternatives would result in backing on the I-80 mainline. Alternative C would experience the shortest queue length at the eastbound I-80 off-ramp, while Alternative A would experience the shortest queue length at the westbound I-80 off-ramp.

**Table 12. AM and PM Peak-hour 95th-Percentile Queue Lengths**

In feet

Alternative	AM		PM		Worst EB Queue Length	Worst WB Queue Length
	EB 95th Queue Length	WB 95th Queue Length	EB 95th Queue Length	WB 95th Queue Length		
Existing	2,600	800	200	300	2,600	800
2050 No Action	> 5,000	> 5,000	2,200	1,400	> 5,000	> 5,000
2050 Alternative A	600	500	300	400	600	500
2050 Alternative B	900	700	200	800	900	800
2050 Alternative B Original <sup>a</sup>	> 5,000	1,200	> 5,000	3,100	> 5,000	> 5,000
2050 Alternative C	400	500	300	500	400	500

<sup>a</sup> Alternative B Original is the original design for Alternative B without any refinements.

Table 13 summarizes the pedestrian walk time results for four origin-destination (O-D) routes measured in the study area during the PM peak hour for existing, 2050 No Action, and all three action alternatives. The travel time results indicate that Alternatives A and C would improve the pedestrian walking time during the PM peak hour, whereas Alternative B would increase walk time over 2050 No Action primarily due to increased signal delay. The width of the frontage road intersections on SR-224 requires a two-stage pedestrian crossing conducted across two signal cycles.

**Table 13. PM Peak-hour Pedestrian Walking Time**

In minutes and seconds (m:ss)

Alternative	Pair 1	Pair 2	Pair 3	Pair 4	Total O-D Walking Time	Savings from No Action
Existing	23:30	8:45	9:00	12:00	53:30	n/a
2050 No Action	23:45	9:00	9:15	12:00	54:00	n/a
2050 Alternative A	24:00	7:30	9:00	12:00	52:30	-1:30
2050 Alternative B	24:00	9:15	10:00	14:30	57:45	+3:45
2050 Alternative C	23:30	7:30	10:45	12:00	53:45	-0:15

Figure 7 through Figure 10 illustrate the specific walk paths for each alternative. The addition of pedestrian tunnels near Ute Boulevard and the relocation of the existing pedestrian tunnel near Olympic Parkway would affect the walk paths for various alternatives.

Figure 7. Pair 1 Pedestrian Walk Paths



Figure 8. Pair 2 Pedestrian Walk Paths

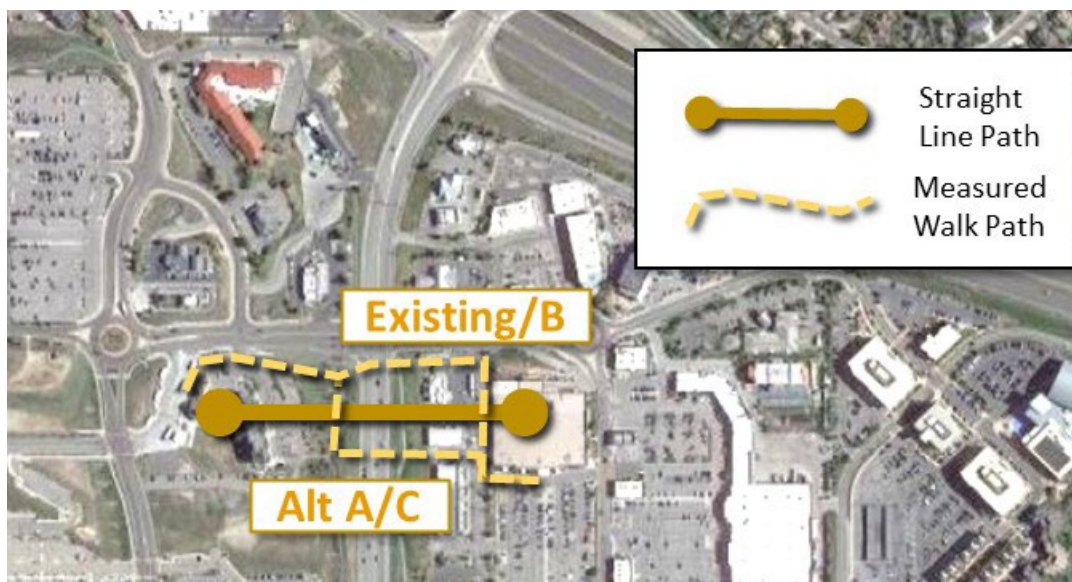


Figure 9. Pair 3 Pedestrian Walk Paths



Figure 10. Pair 4 Pedestrian Walk Paths

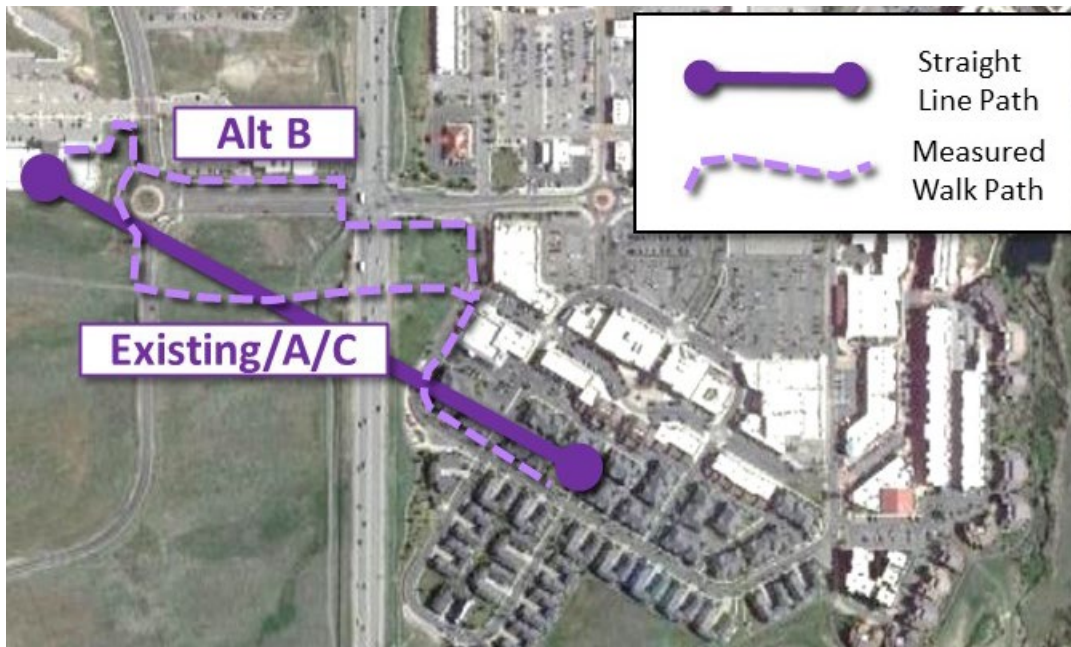


Figure 11 to Figure 14 illustrate the intersection, bicycle, and pedestrian LTS in the study area for existing conditions and all three action alternatives. (2050 No Action conditions were determined to be the same as existing conditions.)

**BLTS.** For existing conditions, BLTS results show that, outside the SR-224 corridor, most roads currently provide BLTS 3 or better for bicycle travel because of lower speed limits and lower traffic volume. Segments of SR-224 without a separated trail experience BLTS 4 as a result of the high speed (45 mph), high traffic volume, and the absence of dedicated bike lanes on SR-224. When available, the separated trails adjacent to SR-224 are rated BLTS 1 and provide low-stress route for bicycle travel. For Alternatives A and C, the proposed new tunnel south of Ute Boulevard would add a new BLTS 1 opportunity to cross SR-224. Alternative B would require travelers to continue to cross at the Ute Boulevard signal.

**Intersection LTS.** The intersection LTS analysis results for existing conditions show that the main intersections in the SR-224 corridor would continue to experience LTS 3, and the rest of the intersections in the study area will experience LTS 1 or LTS 2 based on the speed limit, number of lanes, and type of control. All action alternatives would retain the same intersection LTS as existing conditions. Though the Alternative B frontage road intersections would offer a two-stage crossing for pedestrians for east-west crossings, the north-south crossings would still traverse six or more lanes, so the overall intersection rating would remain at LTS 3.

**PLTS.** PLTS analysis shows that, under existing conditions, most facilities in the study area experience PLTS 1 and PLTS 2 because the speed limit is low and connected sidewalks and trails are available. One exception is the segment of north SR-224 between I-80 and Rasmussen Road, which will continue to experience PLTS 4 because pedestrian facilities are provided on only one side of SR-224. Additionally, Landmark Drive south of the Olympic Parkway roundabout will continue to experience PLTS 4 because there are no sidewalks or trails.

Alternatives A and C would offer a new PLTS 1 opportunity to cross SR-224 with the addition of the pedestrian tunnel near Ute Boulevard. Alternative B would require travelers to continue to cross at the Ute Boulevard signal and would maintain the same PLTS as existing conditions.

Figure 11. Existing Intersection, Bicycle, and Pedestrian LTS

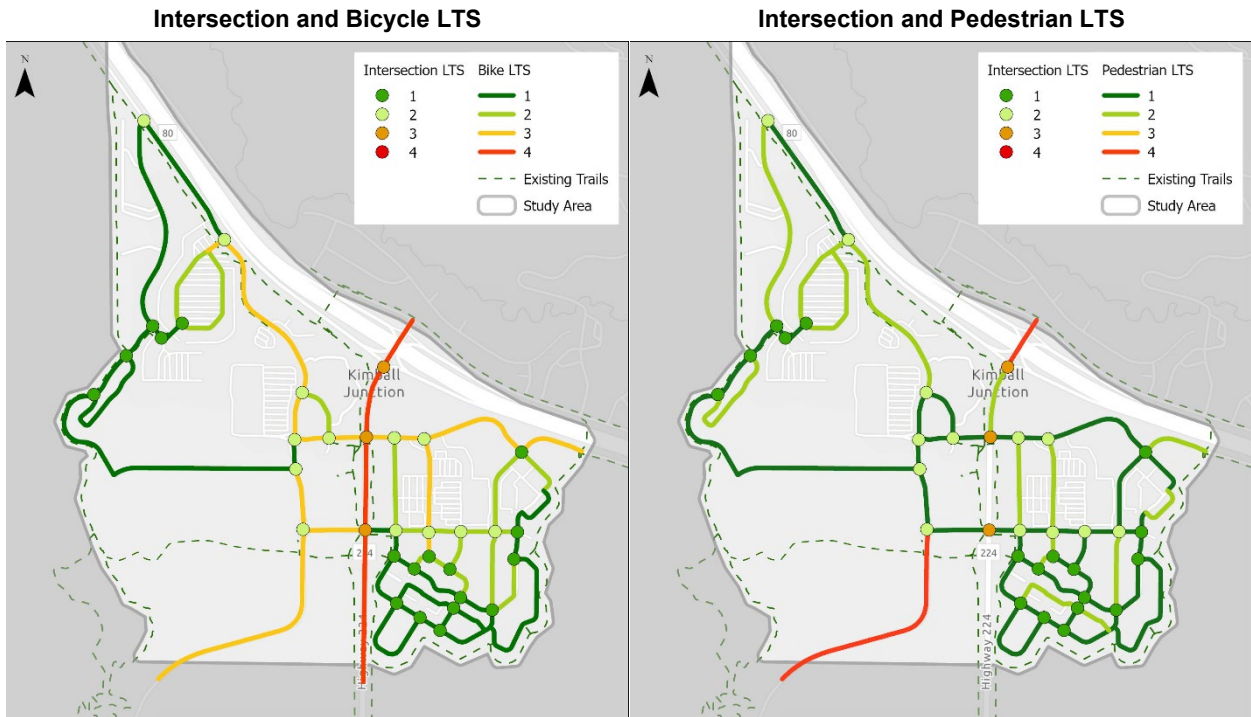


Figure 12. Alternative A Intersection, Bicycle, and Pedestrian LTS

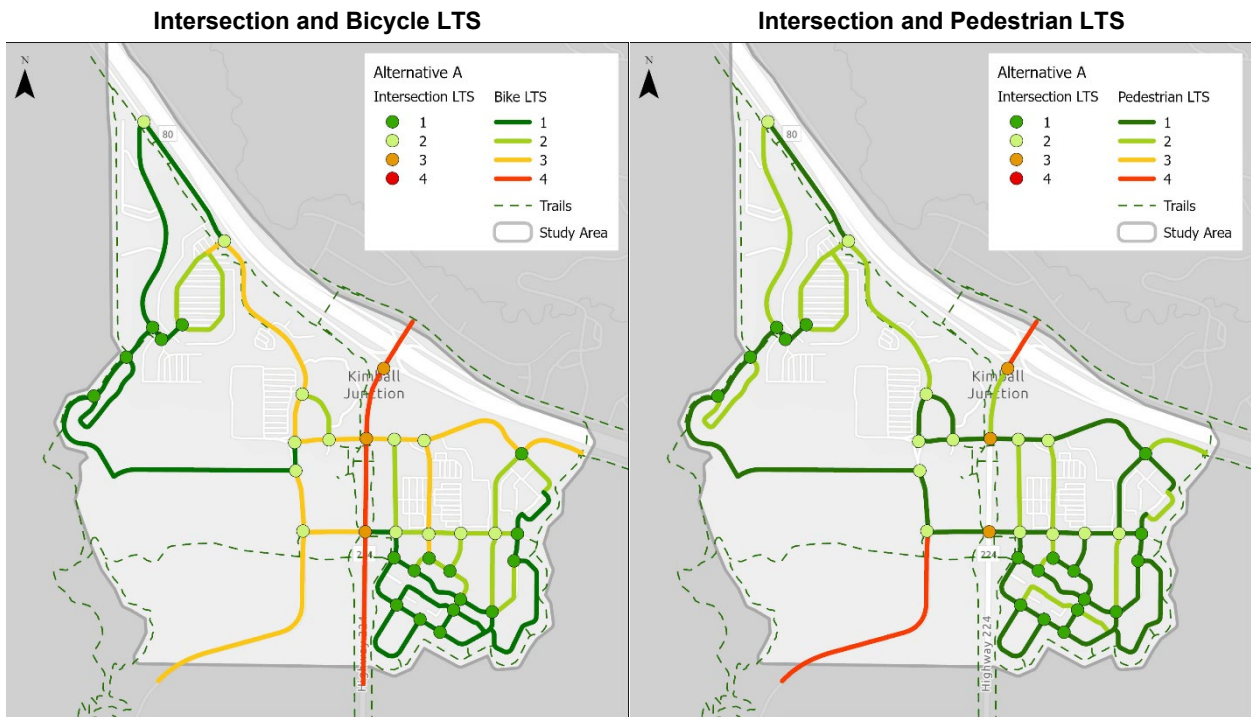


Figure 13. Alternative B Intersection, Bicycle, and Pedestrian LTS

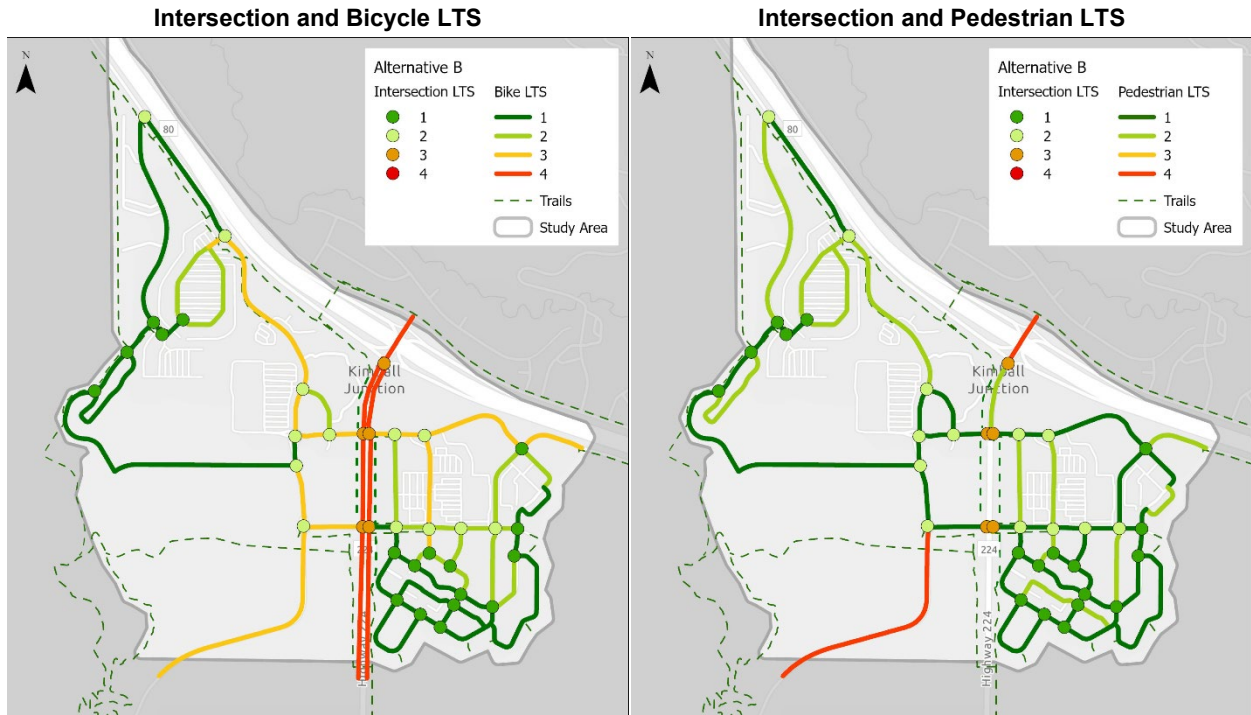
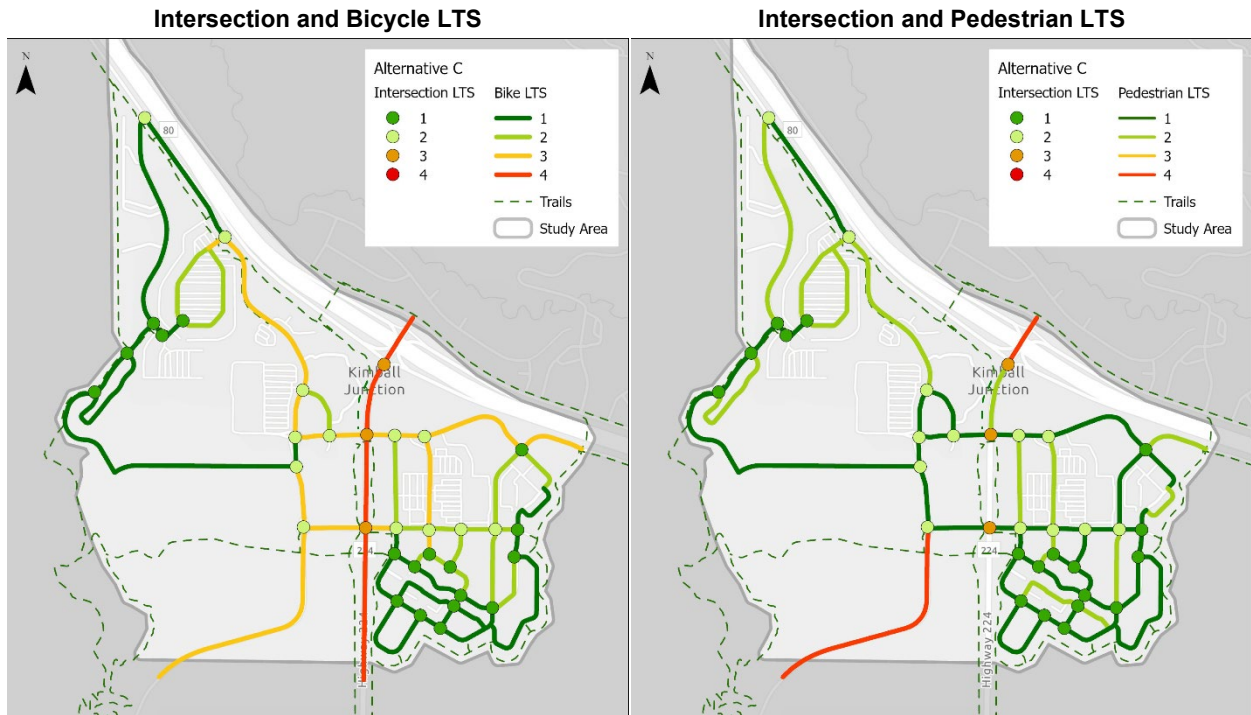


Figure 14. Alternative C Intersection, Bicycle, and Pedestrian LTS





### Vehicle-miles Traveled

The daily VMT near the Kimball Junction area was compared among the 2050 No Action, Alternative A, Alternative B, and Alternative C scenarios. Table 13 shows the roadway network that was selected for the VMT comparison near the Kimball Junction area. The comparison indicates that Alternative A would result in the highest VMT, which would generate more than 1% VMT over No Action. Alternatives B and C would result in less than 1% VMT over No Action.

Table 14. VMT Comparison

Alternative	Daily VMT	% Increase from No Action
2050 No Action	845,272	n/a
2050 Alternative A	853,761	1.00%
2050 Alternative B	853,313	0.95%
2050 Alternative C	853,031	0.92%

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Attachment A.  
Kimball Junction EIS Existing and 2050  
No Action Mobility Memo

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## MEMORANDUM

**DATE:** December 20, 2022  
**TO:** HDR, Inc.  
**FROM:** Parametrix  
**SUBJECT:** Kimball Junction EIS Existing and 2050 No Action Mobility Memo  
**PROJECT NUMBER:** PIN 19477; Project No. S-0224(50)12  
**PROJECT NAME:** Kimball Junction EIS

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This memorandum documents the mobility conditions for existing and 2050 no action scenarios to support the Kimball Junction Environmental Study. Results include a discussion of traffic conditions, active transportation, and transit service in the study area.

### STUDY AREA

The study area expands on the analysis area defined by the Kimball Junction Area Study (2020) which consisted of the I-80/Kimball Junction interchange area, including the three signalized intersections along SR-224 (I-80 Single-Point Urban Interchange (SPUI), Ute Boulevard, Olympic Parkway) as well as the stop-controlled intersection of SR-224/Rasmussen Road. This effort also includes four roundabouts immediately east and west of SR-224 at Ute Boulevard/Landmark Drive, Olympic Parkway/Landmark Drive, Ute Boulevard/Uinta Way, and Newpark Boulevard/Uinta Way.

Within the analysis model, the SR-224 corridor was extended over two miles to the south of the Olympic Parkway intersection near Canyons Resort Drive to allow for accurate representation of vehicle queueing. In addition to SR-224, traffic operations on I-80 were modeled from approximately milepost 141 to milepost 147. This allowed for inclusion of the Jeremy Ranch interchange on the western extent and the I-80 eastbound off-ramps to US-40 and the westbound on-ramps from US-40. The I-80 interchanges adjacent to the Kimball Junction interchange are not a focus of the study but are included in the model network to support any potential future coordination with the Federal Highway Administration (FHWA).

### ANALYSIS TIMEFRAME

The analysis timeframe for the study was coordinated with the Utah Department of Transportation (UDOT) and Summit County staff to reflect known, regularly occurring traffic concerns on the corridor not influenced by extreme or outlier events, such as crashes, inclement weather, holidays or special events. Twelve months of traffic data (April 2021 to April 2022) on SR-224 were obtained from UDOT to investigate traffic data seasonality. The data consisted of speed data from vehicle probe data within UDOT's ClearGuide platform and traffic volume data from sensors on I-80 and SR-224 within UDOT's PeMS platform.

The 12-month data illustrated that winter months (Dec-Mar) on SR-224 experience higher volumes and much more variation in vehicle travel times than the rest of the year. Additionally, the worst congestion on SR-224 is much more likely to occur on winter weekdays than winter weekends. Though winter weekends can feature greater skier traffic demand, the mixture of regular commuter traffic, school traffic, and skier traffic on winter

weekdays results in overall higher demand. For the study analysis, it was determined to model AM and PM peak period conditions representing the 85<sup>th</sup> percentile highest travel times during the winter. The study team determined this appropriately captured traffic concerns without being influenced by outlier events that often coincide with the highest 15 percent of travel times. It should also be noted that the AM and PM peak period 85<sup>th</sup> percentile travel times for winter reflect the AM and PM peak period 95<sup>th</sup> percentile travel times across the entire 12-month dataset meaning only 5 percent of days for the whole year have higher travel times than the analysis timeframe. Supporting data for the analysis timeframe selection is contained in the Appendix.

## EXISTING CONDITIONS

To support analysis, traffic data was collected within the study area to determine existing traffic volumes, traffic composition, and travel patterns. Traffic operations were evaluated using a microsimulation VISSIM model expanded and modified from the Kimball Junction Area Study. The model was calibrated using the existing traffic data collected for the project.

### Vehicle Traffic Data

Data was collected within the study area and used to evaluate existing conditions. The following sections describe the collection of data and how it was developed for use in the existing conditions analyses.

#### Traffic Volumes

The traffic volumes used for the project were developed using intersection turning movement counts, freeway detector volume data, and information from previous studies conducted in the study area. Traffic counts were collected within the study area in January 2021 at the following intersections as part of the SR-224 Bus Rapid Transit (BRT) Environmental Assessment (2022):

- SR-224/Rasmussen Road
- SR-224/I-80 SPU
- SR-224/Ute Boulevard
- SR-224/Olympic Parkway
- Ute Boulevard/Landmark Drive
- Olympic Parkway/Landmark Drive

Additional traffic counts were collected March 2022 to capture driveway activity on Ute Boulevard and Olympic Way as well as the two roundabouts east of SR-224:

- Ute Boulevard/Uinta Way
- Newpark Boulevard/Uinta Way

Traffic volume data from permanent sensors on SR-224 and I-80 were used to adjust volumes from turning movement counts to reflect conditions associated with the winter 85<sup>th</sup> percentile travel times. This was done by comparing SR-224 and I-80 volumes for the days of data collection to the days similar to the winter 85<sup>th</sup> percentile travel time. Generally, this resulted in an increase of 100-200 vehicles per hour on SR-224 for AM and PM peak hours. The same data comparison was used to adjust I-80 volumes gathered for the Kimball Junction Area Plan to represent conditions associated with winter 85<sup>th</sup> percentile travel times. The Jeremy Ranch interchange roundabout volumes were also obtained from the Kimball Junction Area Study. Weekday AM peak hour traffic volumes are shown in Figure 1 with weekday PM peak hour traffic volumes shown in Figure 2.

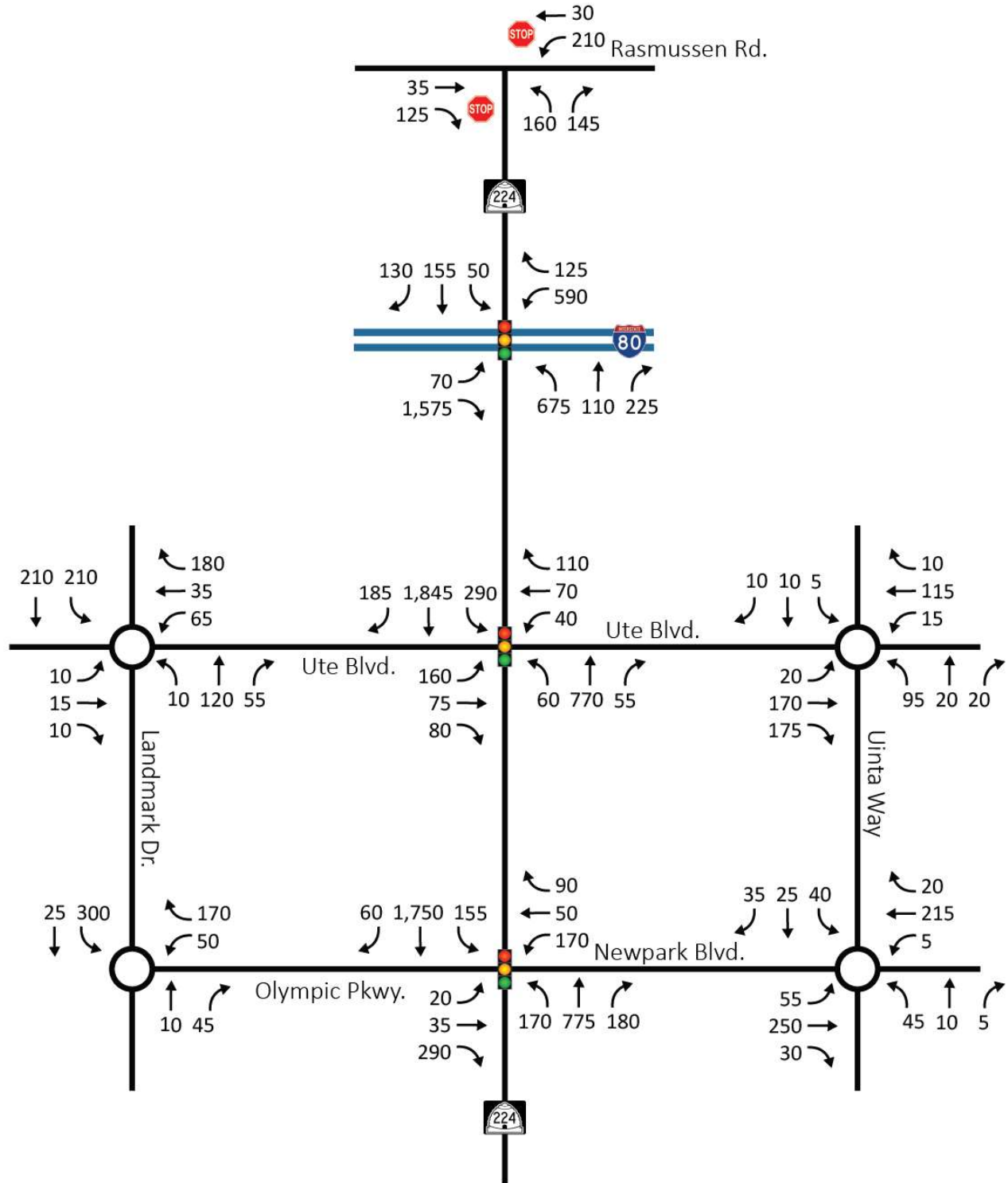


Figure 1: Weekday Existing AM Peak Hour Traffic Volumes

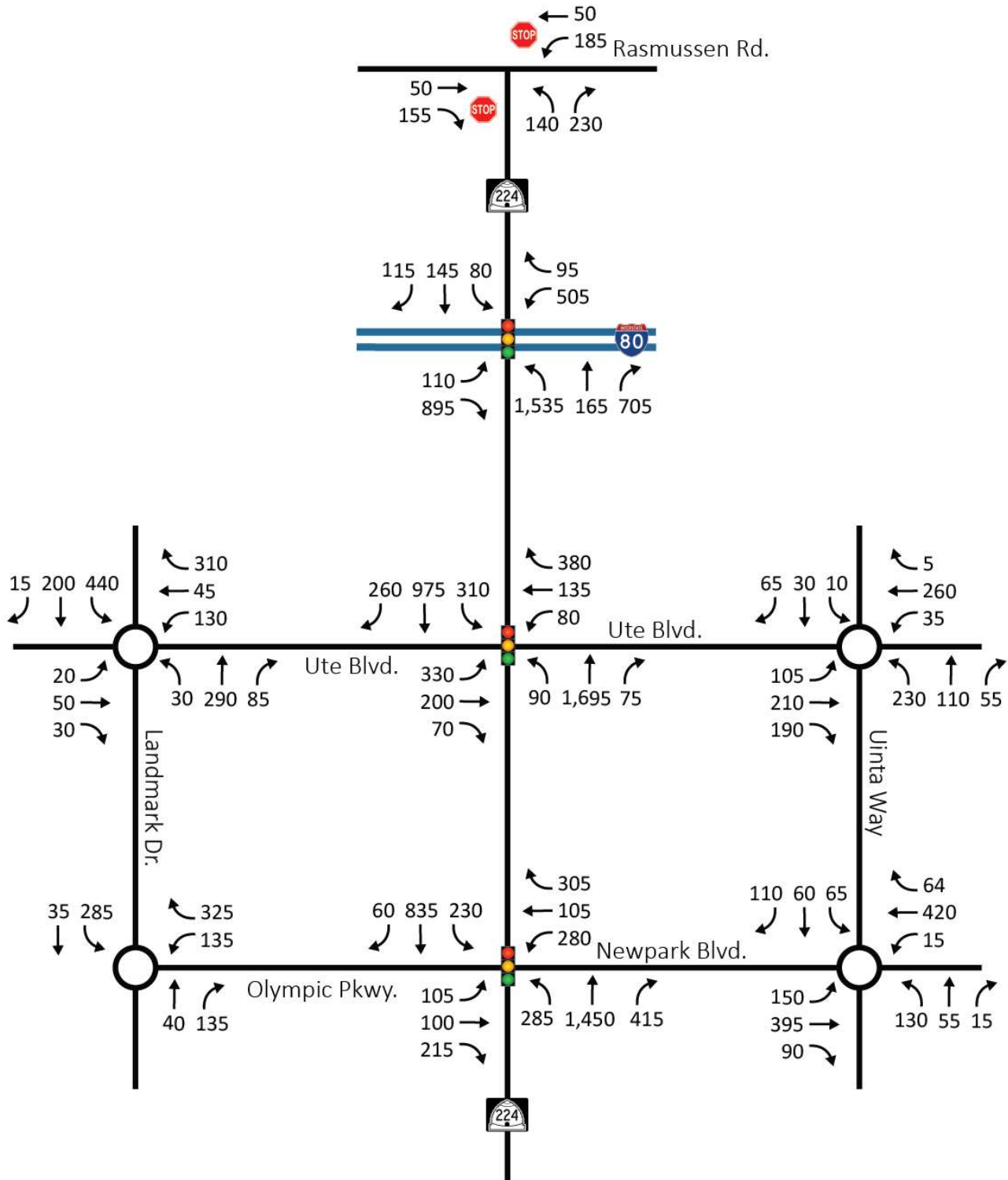


Figure 2: Weekday Existing PM Peak Hour Traffic Volumes



## Traffic Composition

Within the study area, I-80 is a major freight corridor and a higher percentage of heavy vehicles were added to the VISSIM network to properly account for the vehicle mix on the road. Heavy vehicle counts obtained during the Kimball Junction Area Study from UDOT's Powderwood Road traffic camera and UDOT detector data along I-80 at the Kimball Junction interchange were reviewed to determine the approximate mix of different vehicle classifications traveling on the corridor. Based on the peak hour, the vehicle inputs along I-80 were used as shown in Table 1 to allow for a higher percentage of heavy vehicles traveling through the model along I-80 than occur in the default VISSIM vehicle composition.

**Table 1: Existing VISSIM I-80 Vehicle Composition Percentages**

Location	Weekday AM Peak Hour			Weekday PM Peak Hour		
	Cars	HGV Single	HGV Combo	Cars	HGV Single	HGV Combo
I-80 Eastbound	81%	11%	8%	88%	6%	6%
I-80 Westbound	76%	6%	20%	88%	4%	8%

The aerial drone video along SR-224 was also reviewed to determine if the default vehicle composition for arterials should be modified. Based on a review of the video, it was determined that during the weekday peak hours, the vehicles observed on the corridor justified reducing the amount of heavy trucks for the default arterial composition. The single-unit truck composition was reduced from four percent to two percent and the combination truck composition was reduced from two percent to one percent.

## Vehicle Travel Times

Travel time data along the corridor was gathered for two routes that reflect major traffic issues faced during AM and PM peak periods. The first travel time route is from the eastbound I-80 off-ramp gore to southbound SR-224 approximately 1,100 feet south of Olympic Parkway. The route captures the congestion experienced during AM peak periods when large amounts of vehicles exit I-80 and travel south on SR-224 towards ski resorts and employment destinations in Park City. The second travel time route begins on northbound SR-224 just north of Canyons Resort Drive and continues north to the I-80/SR-224 interchange. This route captures the reverse traffic pattern in the PM when vehicles travel north from ski resorts and other destinations towards I-80.

The travel time data was obtained via UDOT's ClearGuide platform which aggregates vehicle probe data. Table 2 summarizes the AM peak hour, PM peak hour, and midday average travel time for the two routes of interest during the winter season. As mentioned previously, the travel time data for these routes was used to identify the analysis timeframe for the study.

**Table 2: Weekday AM and PM Peak Hour Travel Times**

Travel Time Segment		Time Period	Average Travel Time (min)
From	To		
I-80 EB off ramp Gore	SB SR-224 approx 1,100 ft south of Olympic Pkwy	AM Peak Hour	5:30
		Midday	2:30
		PM Peak Hour	2:45
NB SR-224 at Canyons Resort Drive	SR-224/I-80 SPUI	AM Peak Hour	4:00
		Midday	4:15
		PM Peak Hour	11:45

## Traffic Operations

Traffic operations along the corridor were evaluated using a VISSIM v2022 microsimulation traffic model. The VISSIM model was used due to the close proximity of intersections within the study area, queuing which spills back through multiple intersections in the existing condition, and the need to evaluate transit and active transportation operations. In addition, the microsimulation model allowed for evaluation of the I-80 mainline, on- and off-ramps and arterial street systems and the interactions between them. The VISSIM model was modified from the models used for the Kimball Junction Area Study. The following sections discuss the methods used to build the traffic operations model and the results from the existing weekday AM and PM peak hour analyses.

### Signal Timing

Existing signal timing plans for the three signalized intersections in the study area (SR-224/I-80 SPUI, SR-224/Ute Boulevard, SR-224/Olympic Parkway) were obtained from the UDOT Signal Desk in February 2020 as part of the Kimball Junction Area Plan. Then, data from the UDOT Automated Traffic Signal Performance Measures (ATSPM) online database was gathered to confirm timing plans are still accurate and to compare timing plans to actual performance.

### Vehicle Routing

Vehicle routes were assigned on a corridor-wide basis for the entire network. Route beginnings and endings were located near vehicle input locations and on I-80 on- or off-ramps. This allowed for vehicles to navigate smaller areas and corridors on a single route which resulted in fewer last-minute lane changes. Additionally, the possibility of vehicles driving in circuitous directions is eliminated while avoiding the need for more complicated network-wide routing. Relative vehicle routing in the model is representative of the number of vehicles in the model along each route.

### Model Calibration

All model data results were based on an average of 10 simulation runs. A seeding period of 15 minutes was used to populate the model. The AM model was coded to record results for a three-hour period (7:00 AM – 10:00 AM) to capture the build-up and dissipation of congestion. Likewise, the PM model was coded to record results for a four-hour period (3:00 PM to 7:00 PM). For both AM and PM models, results were recorded in 15-minute intervals.

The model was calibrated to ensure study area traffic volumes, travel times, and queuing reasonably represent AM and PM peak hour conditions for the analysis timeframe. As such, modifications were made to factors for the Wiedemann 74 car following model within the VISSIM model. Specifically, the additive and multiplicative parts of the safety distance were modified according to Table 3.

**Table 3: Modifications to Wiedemann 74 Car Following Model**

Factor	Default Value	Modified Value
Additive part of safety distance	2.0	2.3
Multiplicative part of safety distance	3.0	3.3

### Intersection Level of Service

Vehicle level of service (LOS) was calculated for each of the intersections using the intersection node data. Node data was collected in 15-minute increments to determine average vehicle delay at each intersection during the busiest hour of the model (peak hour). The peak hour of the AM model was 8:00 AM – 9:00 AM and the busiest hour of the PM model was 4:00 PM – 5:00 PM.

Using the average vehicle delay, level of service was determined using the Highway Capacity Manual 6<sup>th</sup> edition (HCM) thresholds for unsignalized and signal-controlled intersections. Table 4 summarizes the HCM thresholds.

As shown in Table 4, unsignalized intersection LOS is defined according to a different scale than signalized intersections and is also defined by the worst-performing approach rather than the average vehicle delay for the entire intersection. The unsignalized methodology applies to roundabouts as well as stop-controlled intersections.

**Table 4: Intersection LOS Definition**

LOS	Unsignalized Intersection Average Delay (sec/veh) <sup>1</sup>	Signalized Intersection Average Delay (sec/veh)
LOS A	0 - 10	0 - 10
LOS B	10 - 15	10 - 20
LOS C	15 - 25	20 - 35
LOS D	25 - 35	35 - 55
LOS E	35 - 50	55 - 80
LOS F	> 50	> 80

1. Reported for the worst stop or yield-controlled approach

Source: HCM 6<sup>th</sup> Edition

Table 5 summarizes the results of the existing conditions traffic operations. As shown in Table 5, LOS E or F is experienced at several intersections during the AM and PM peak hours. During the AM peak hour, the SR-224/I-80 SPUI operates at LOS F. Though the other two signals on SR-224 appear to operate at LOS C during the AM peak hour, the reported delay is likely underrepresented because of the congestion at the interchange. Specifically, vehicles on the eastbound I-80 off ramp are unable to efficiently turn onto SR-224 during the AM peak period. This limits the flow rate at which vehicles reach Ute Boulevard and Olympic Parkway. If the bottleneck associated with the interchange were relieved, it is likely that measured performance of Ute Boulevard and Olympic Parkway would degrade. A similar pattern is observed with the PM performance results. Northbound traffic on SR-224 is congested at Olympic Parkway producing long northbound queues and intersection delay at Ute Boulevard and SR-224/I-80 SPUI is likely underrepresented.

Traffic performance at the unsignalized intersections is generally acceptable other than LOS F for the northbound approach at the Ute Boulevard/Landmark Drive roundabout. The heavy southbound left-turn volumes from Landmark Drive onto eastbound Ute Boulevard leave few gaps for northbound traffic to enter the roundabout. Additionally, queues along Ute Boulevard from the SR-224 signal occasionally interfere with performance of the roundabout.

**Table 5: Existing Peak Hour Intersection Vehicle Delay and LOS**

Location	Control Type	Vehicle Delay (sec / veh)	LOS (Worst Approach)
<b>AM Peak Hour</b>			
SR-224/Rasmussen Rd	Stop-Controlled	11	B (WB)
SR-224/I-80 SPUI	Traffic Signal	>100	F
SR-224/Ute Blvd	Traffic Signal	29	C
SR-224/Olympic Pkwy	Traffic Signal	30	C
Ute Blvd/Landmark Dr	Roundabout	3	A (NB)
Olympic Pkwy/Landmark Dr	Roundabout	2	A (SB)
Ute Blvd/Uinta Way	Roundabout	3	A (EB)
Newpark Blvd/Uinta Way	Roundabout	4	A (EB)
<b>PM Peak Hour</b>			
SR-224/Rasmussen Rd	Stop-Controlled	12	B (WB)
SR-224/I-80 SPUI	Traffic Signal	25	C
SR-224/Ute Blvd	Traffic Signal	53	D
SR-224/Olympic Pkwy	Traffic Signal	>100	F
Ute Blvd/Landmark Dr	Roundabout	56	F (NB)
Olympic Pkwy/Landmark Dr	Roundabout	2	A (WB)
Ute Blvd/Uinta Way	Roundabout	5	A (EB)
Newpark Blvd/Uinta Way	Roundabout	19	C (SB)

### Vehicle Travel Times

Travel time collection points were placed in the VISSIM traffic model to represent the same locations used to obtain travel time data from the UDOT ClearGuide platform. Table 6 summarizes the AM and PM peak hour travel times from the VISSIM simulation model for respective the travel paths. UDOT ClearGuide travel times for the same peak hour from a day manifesting conditions similar to the winter 85<sup>th</sup> percentile travel time are shown for comparison. The VISSIM simulation peak hour travel times are within 15 seconds of the ClearGuide data.

**Table 6: Existing AM and PM Peak Hour Travel Times**

Travel Time Segment		Time Period	Average Travel Time (min)	
From	To		VISSIM Model	UDOT ClearGuide Platform
I-80 EB off ramp Gore	SB SR-224 approx 1,100 ft south of Olympic Pkwy	AM Peak Hour	5:30	5:30
		PM Peak Hour	2:15	2:45
NB SR-224 at Canyons Resort Drive	SR-224/I-80 SPUI	AM Peak Hour	3:45	4:00
		PM Peak Hour	12:00	11:45

### Queuing

Vehicle queuing was measured using queue counter data collected from the VISSIM simulation model for the areas with the most significant queuing: the eastbound off-ramp in the AM peak hour and northbound SR-224 in the PM peak hour. These movements have the highest traffic volumes and were observed in the field and through drone footage collected during the Kimball Junction Area Study to have the longest queues (Figure 3). The queue data for the AM and PM peak hours were calculated for the average and 95<sup>th</sup> percentile queue lengths as shown in Table 7.

As shown in Table 7, queue lengths reflect the poor LOS and poor travel times experienced during the AM and PM peak hours. The 95th percentile queue length at the eastbound I-80 off ramp during the AM peak hour is ½ mile. This approaches the end of the off-ramp and results in slow speeds and some queuing on I-80 mainline. During the PM peak hour, the 95th percentile northbound queue on S.R. 224 at Olympic Parkway is 1.9 miles which extends past Bear Hollow Drive.

**Table 7: Weekday AM and PM Peak Hour Vehicle Queues**

	Average Queue (feet)	95 <sup>th</sup> Percentile Queue (feet)
<b>AM Peak Hour</b>		
I-80 eastbound off ramp queue	1,900 ft (0.4 mi)	2,600 ft (0.5 mi)
<b>PM Peak Hour</b>		
S.R. 224 northbound queue at Olympic Parkway	8,100 ft (1.5 mi)	9,600 ft (1.8 mi)



**Figure 3: Northbound SR-224 Weekday PM Peak Hour Queues, Looking South from 850 Feet North of Bear Cub Road**

## Transit

The Kimball Junction area is well served by regional and local transit. The Kimball Junction Transit Center is on the west side of SR-224 and accessed via Ute Boulevard and Landmark Drive. The transit center has a small park-and-ride area and is served by High Valley Transit, Park City Transit, and Utah Transit Authority (UTA).

High Valley Transit is operated by Summit County and is free fare which can incentivize shorter trips or chained trip to be taken via transit versus private vehicle. A description of the different transit routes serving the transit center are included in Table 8.

**Table 8: Kimball Junction Transit Center Bus Service**

Route (Agency)	Service Period	Vehicle Headways	Description/Destinations
Route 101 (High Valley Transit)	5:45 a.m. to 11:35 p.m.	15 min	SR-224 Local, Jeremy Ranch Park & Ride/Snow Park Lodge & Deer Valley Resort
Route 103 (High Valley Transit)	9 a.m. to 10:00 p.m.	20 min	Operates in a loop around the Kimball Junction area
Route 104 (High Valley Transit)	6 a.m. to 11:30 p.m.	15 min	Bitner Shuttle Full Loop
Route 10 (Park City Transit)	6:40 a.m. to 11:10 p.m.	15 min	Electric Express / Kimball Junction, Canyons Village, Park City Old Town
PC-SLC Connect (UTA)	6 a.m. to 6 p.m.	8x daily	Downtown SLC / Kimball Junction

As shown, the Kimball Junction area is well-served by transit with service that accesses destinations on all sides. Frequent transit is available via Route 10 to Park City Old Town area with 15-minute headways throughout the day. People are also able to access the Kimball Junction Area via transit from the Ecker Hill Park and Ride with transit service operating on approximately 15-minute headways using bus route 101. The 104 Bitner Shuttle operates in a larger, further east-reaching loop than the Kimball Junction Circulator and it has a 15-minute frequency, from 6 am to 11:30 pm. The loop begins and ends at the Kimball Junction Transit Center. Kimball Junction can be also accessed by Route 103, which operates in a loop around the Kimball Junction area in 20-minute frequencies, from 9 am to 10 pm. Finally, High Valley Transit operates on-demand micro-transit that covers Kimball Junction and other areas.

Summit County and Park City are planning to convert the Route 10 into a BRT by adding dedicated transit lanes in each direction on most of SR-224. The transit lanes would begin and end south of the Olympic Parkway intersection and will provide some capacity improvements to the intersection. Funding may allow the project to be constructed within the next five years.



**Legend**

- |                                       |  |
|---------------------------------------|--|
| <b>High Valley Transit Bus Routes</b> | <b>UTA Bus Route</b>                             |
| 101 Spiro / 224 Local                 | UTA Route 902 Park City - Salt Lake City Connect |
| 103 Kimball Junction Shuttle          | <b>Park City Transit</b>                         |
| 103B Kimball Junction Morning Shuttle | 10 White Express                                 |
| 104 Bitner Shuttle                    |  |



**Figure 4: Existing Bus Service**

**Active Transportation**

The Kimball Junction area includes infrastructure to enable people to walk and bicycle within and to and from the area (see Figure 5). Along SR-224, buffered multi-use trails, approximately eight feet wide, are included on the east side of the road from Ute Boulevard south through Kimball Junction area and extends nearly to Kearns Boulevard with multiple connections to the other regional trails. On the west side of SR-224, a similar multi-use

trail buffered by landscaping from the roadway runs continuously throughout the Kimball Junction area. To the north, this trail provides connections to the active transportation bridge crossing I-80 as well as trails paralleling both sides of I-80 towards the east and west. South of Kimball Junction, the multi-use trail extends to Bear Hollow Drive and provides access to unpaved recreational trails on the west side of Kimball Junction.

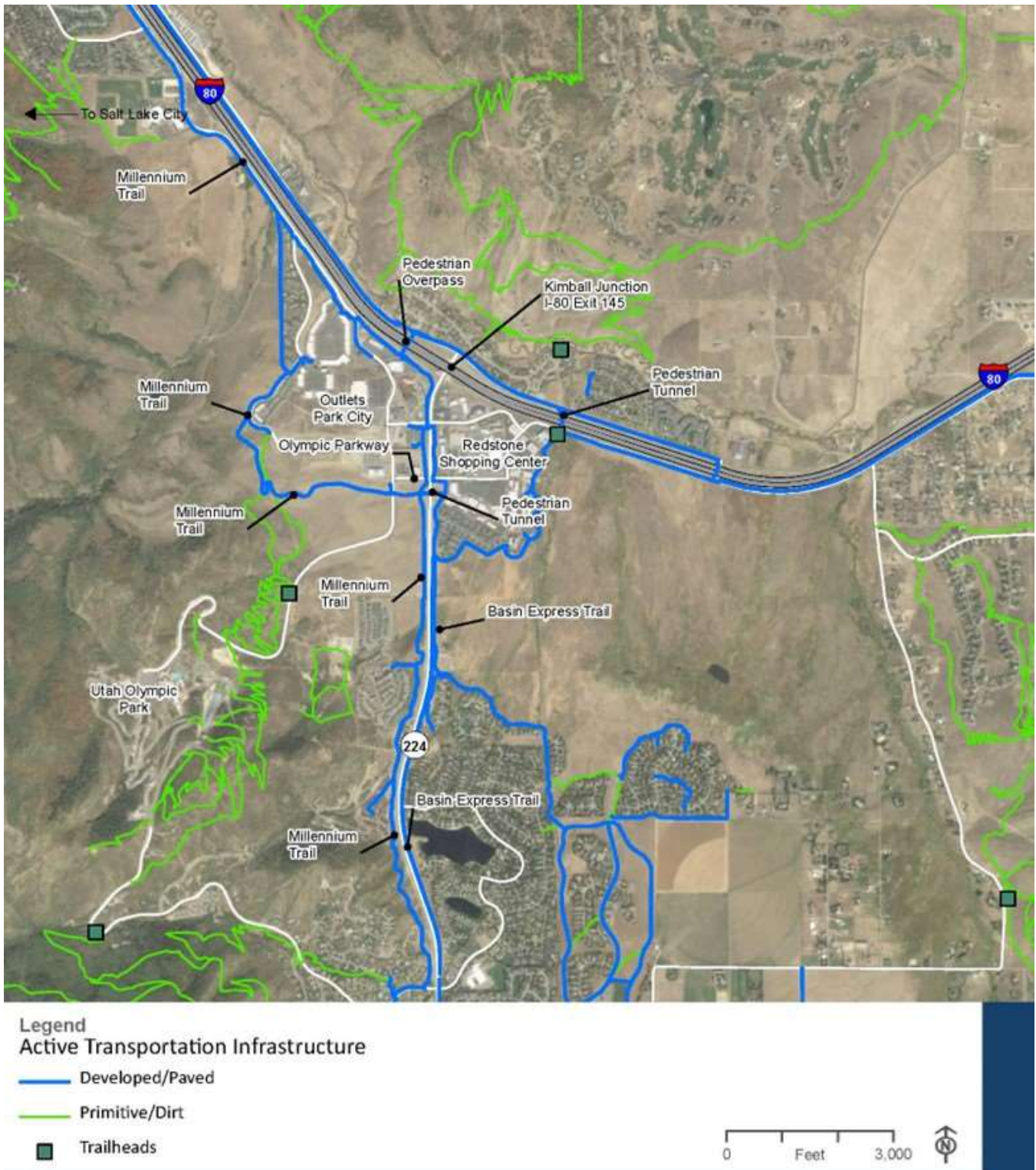


Figure 5: Existing Active Transportation Facilities



Intersection crossings for the multi-use trails in the Kimball Junction area are typically provided via people-actuated crosswalks at existing traffic signals. However, several grade-separated crossings are also provided in the study area. As mentioned prior, a non-motorized bridge crosses I-80 approximately 800 feet west of the Kimball Junction SPUI. This bridge provides a connection from the retail and commercial space on the south side of I-80 to the neighborhoods on the north side of I-80 and Rasmussen Road. An undercrossing of I-80 also exists approximately one-half mile east of the SPUI. Along SR-224, an undercrossing of the highway is located approximately 200 feet south of the Olympic Boulevard intersection which connected trails along Bitner Road to Highland Road adjacent to the Swaner Nature Preserve. This provides for a connection between the retail and residential uses on the south side of the Redstone Center to the trails and open space on the west side of SR-224. These crossings help facilitate safe movements for people bicycling and walking across the major highways within the study area. However, they can also require out of direction travel for people which could result in lower use compared to the at-grade crosswalks at Ute Boulevard or Olympic Parkway or along SR-224 crossing the SPUI.

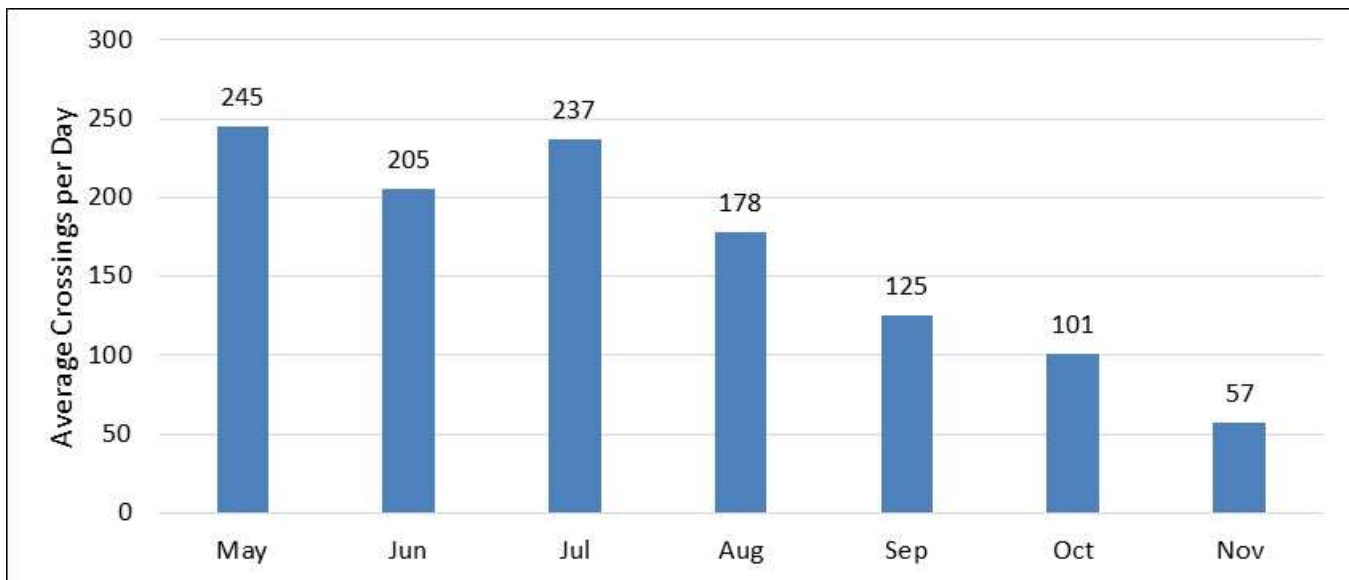
Within the study area, Summit Bike Share provides short term bicycle rental at several stations in Kimball Junction along with others in the Canyons area, Park City, and other locations in the Basin. In Kimball Junction, bicycle rental stations are included by the Basin Recreation Field House and the Newpark Plaza on the east side of SR-224. On the westside of SR-224, bicycle rental stations are located at the Outlets, along Landmark Drive, and at the Kimball Junction Transit Center. All Summit Bike Share bikes are electric bikes with single-ride fares of \$3.50 for a 30-minute ride and monthly and annual memberships are available. Due to the amount of snowfall received in the Park City area, bicycles are typically available from late spring to late fall and are removed during the winter months for safety and to preserve the equipment.

During winter months, snowfall can cause inaccessible conditions for the multi-use trails and sidewalks. Snow is typically plowed from the roads in the area onto the shoulders and adjacent landscaping. This can include onto sidewalks which can discourage use. Snow is typically cleared from sidewalks following the removal of snow from all streets in the area.

Pedestrian and bicycle data crossing data was collected and synthesized for the SR-224/Ute Boulevard and SR-224/Olympic Parkway intersections as well as the SR-224 undercrossing south of Olympic Parkway. The data was a mixture of the following:

- AM and PM peak hour pedestrian crossing data from the January 2021 intersection turning movement volume counts
- Pedestrian push button data from ATSPM online database
- Daytime pedestrian and bicycle counts at both signals and the undercrossing from October 2022
- A seven-month count summary of the SR-224 undercrossing from 2016

Comparing daytime and peak hour count data to corresponding daily ATSPM push button data at Ute Boulevard and Olympic Parkway, an estimate of summer daily pedestrian crossings at both signals was developed. It should be noted that this method counted cyclists riding through intersection crosswalks as pedestrians. Then, the daytime October 2022 pedestrian and bicycle counts at the undercrossing were factored to a summer daily volume using the seven-month count data from 2016 (see Figure 6).



**Figure 6: Seven-month Count Summary of SR-224 Undercrossing (2016)**

Table 9 summarizes the daily volume estimate for each location. The SR-224 undercrossing experiences the highest estimated daily usage at nearly 600 crossings per day. The Ute Boulevard intersection has consistent usage whereas the Olympic Parkway intersection sees the fewest crossings. Additionally, east-west crossings comprise 80 percent of total crossings at the Ute Boulevard intersection but only 25 percent of total crossings at the Olympic Parkway. Both these patterns are likely due to its proximity to the SR-224 undercrossing to Olympic Parkway and fewer developed destinations on the west side of SR-224 by Olympic Parkway.

**Table 9: SR-224 Intersection and Undercrossing Volume Summary**

Location	Metric	Summer Volume Estimate	Percent East-West Crossings	East-West Crossings
Ute Boulevard Intersection	Daily Pedestrian Crossings (all directions) <sup>1</sup>	250	80%	200
Olympic Parkway Intersection	Daily Pedestrian Crossings (all directions) <sup>1</sup>	50	25%	15
SR-224 Undercrossing south of Olympic Parkway	Daily Pedestrian and Bicycle Crossings (east-west)	580	100%	580

1. Cyclists riding on the sidewalk and crosswalk counted as pedestrians

## Safety

Crash analysis was conducted with the most recently available three years of crash data (2019-2021) from the UDOT Traffic & Safety Division for roadways in the vicinity of Kimball Junction. This included SR-224 from Rasmussen to Olympic Parkway and the I-80 on/off ramps. There were approximately 215 total crashes over the three-year period, with one fatal crash, and eight serious injury crashes. There were two crashes involving a pedestrian and zero crashes involving cyclists. The two pedestrian-involved crashes accounted for the one fatal crash and one of the serious injury crashes in the analysis area. Crashes at the three signalized intersections accounted for 158, or nearly 75 percent, of the total crashes.

**Table 10: Crash Summary 2019-2021**

Year	Total Crashes	Fatal	Serious Injury	Pedestrian-involved	Bicycle-Involved
2019	74	0	2	0	0
2020	67	0	1	0	0
2021	74	1	5	2	0
<b>Total</b>	<b>215</b>	<b>1</b>	<b>16</b>	<b>2</b>	<b>0</b>

For the last several years, UDOT has focused on reducing statewide fatal and serious injury crashes. There was one fatal crash and eight serious injury crashes within the analysis area for the three-year period 2019 to 2021. As mentioned, the one fatal crash in the analysis area involved a pedestrian. A vehicle on SR-224 ran the red light at Ute Boulevard and collided with other vehicles as well as a pedestrian standing on the raised median between northbound and southbound lanes.

Of the eight serious injury crashes, four occurred at the SR-224/Ute Boulevard intersection, one occurred at the SR-224/Olympic Parkway intersection and three on SR-224 south of Olympic Parkway. Five of the eight serious injury crashes were angle crashes. The serious injury crash involving a pedestrian occurred at the SR-224/Ute Boulevard intersection when a vehicle turning right collided with a pedestrian entering the crosswalk.

Figure 7 through Figure 9 present crash diagrams for the three signals in the analysis area. The diagrams label each crash by the year the crash occurred and indicate the direction and movements of the vehicles involved. Several patterns are evident from the diagrams. First, at the I-80 interchange SPUI, there are frequent rear-end collisions at the eastbound off-ramp. Rear-end crashes at an off-ramp are usually correlated with ramp congestion which matches observation and traffic data at this location.

Second, there are frequent angle crashes at the SR-224/Ute Boulevard intersection particularly involving southbound vehicles turning left onto Ute Boulevard colliding with northbound through vehicles on SR-224. Roadways with heavy left-turn volumes and opposing through volumes tend to see high amounts of left-turn crashes, especially when permitted left-turn signal phasing is present. The SR-224/Ute Boulevard and SR-224/Olympic Parkway intersections both operate with protected-permitted left-turn phasing for left turns from SR-224. Lastly, there are frequent rear-end collisions on northbound SR-224 at both Ute Boulevard and Olympic Parkway. Again, this is likely a reflection of the congestion experienced on SR-224 at these signals.

UDOT currently has a planned project in 2025 to install dual northbound/southbound left-turn lanes on SR-224 at Ute Boulevard. These left-turn lanes will add capacity but also convert the phasing to protected only. The protected-only phasing is likely to help mitigate the strong pattern of angle crashes at the intersection.

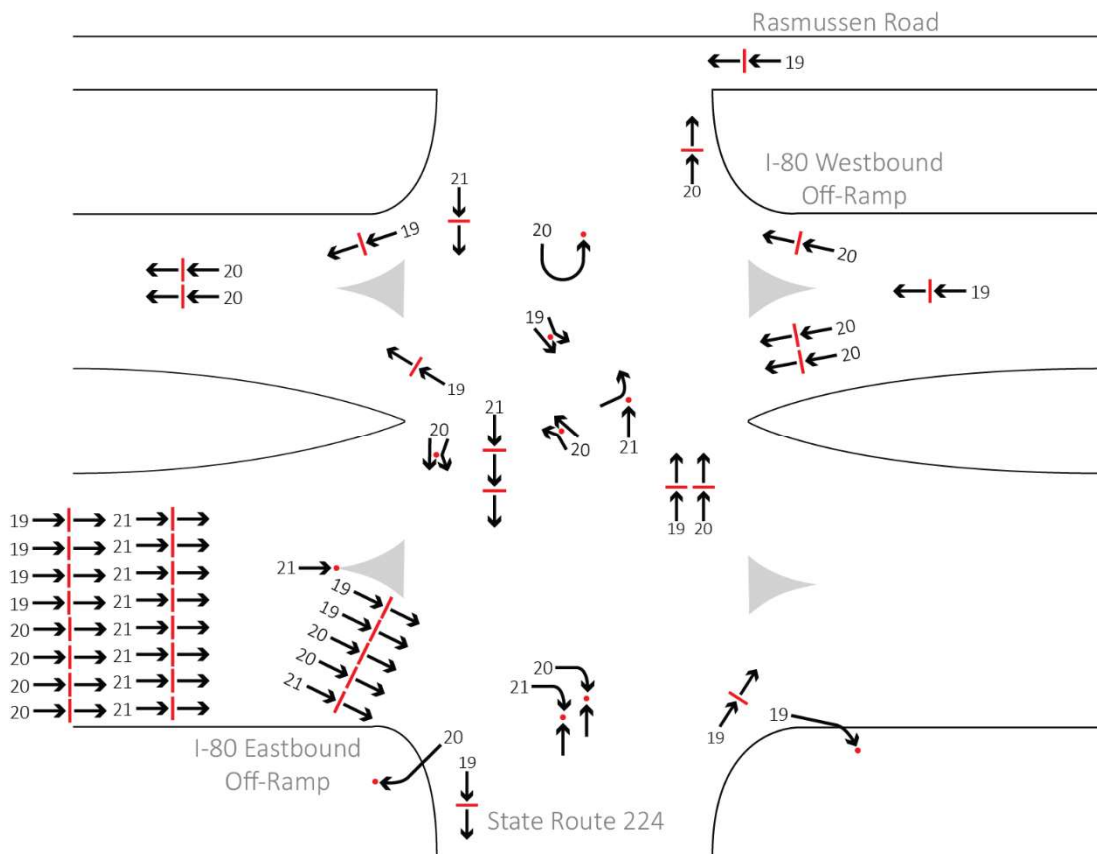


Figure 7: SR-224/I-80 SPUI and SR-224/Rasmussen Road Crash Diagram

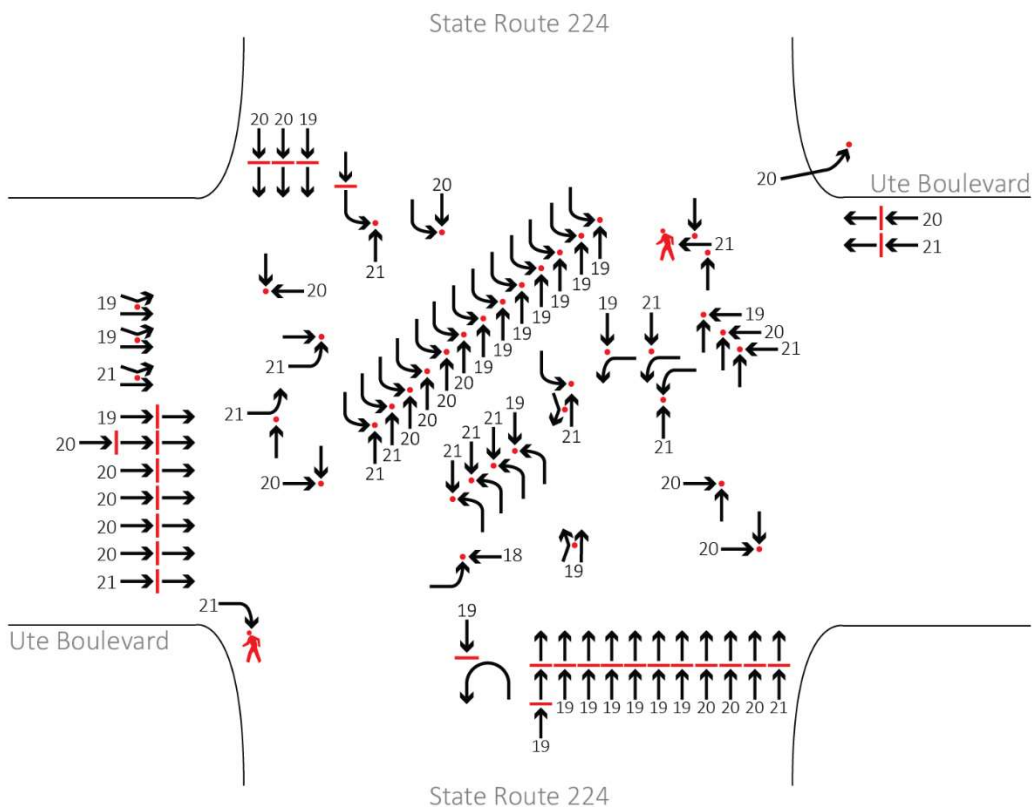
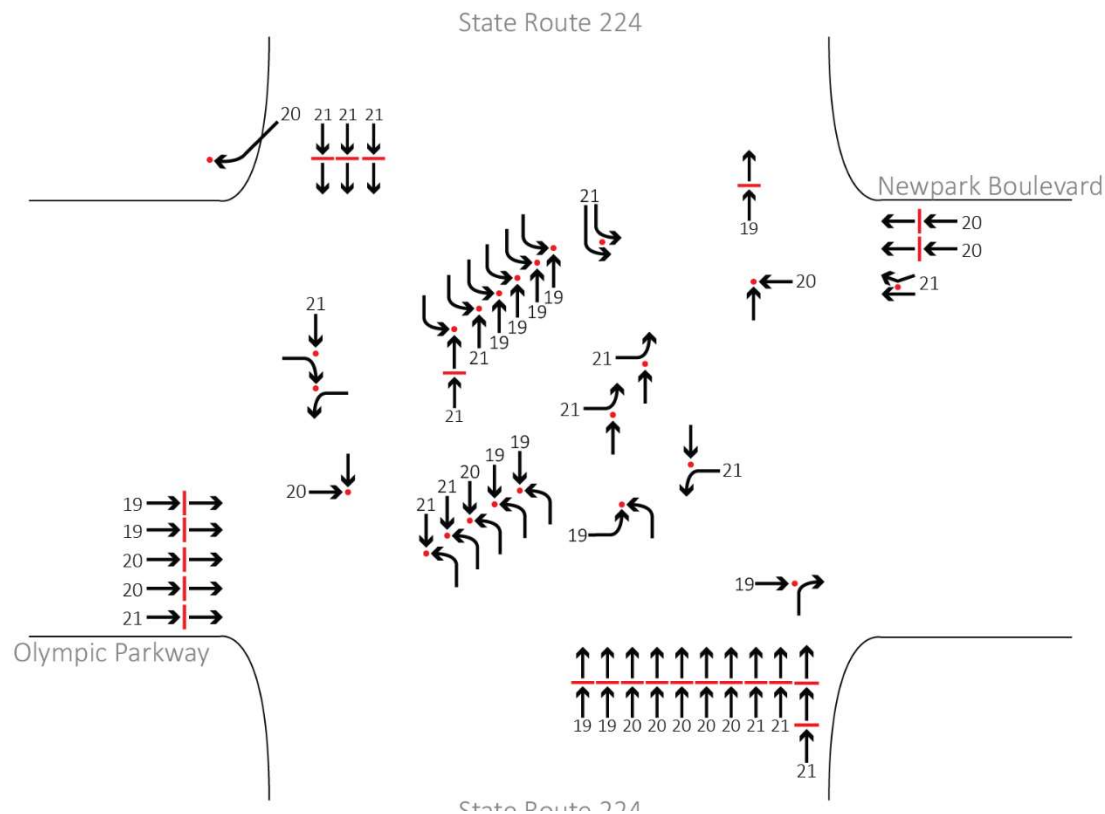


Figure 8: SR-224/Ute Boulevard Crash Diagram



**Figure 9: SR-224/Olympic Parkway Crash Diagram**

## 2050 NO ACTION TRAFFIC CONDITIONS

### Travel Demand Modeling

The Summit County/Wasatch County travel demand model (v1 - 2020-06-10) (referred to as the Summit County model in this document) was used for the purposes of generating 2050 no action traffic forecasts for use in the VISSIM traffic simulation model. The model is a traditional four-step travel demand model consisting of trip generation, trip distribution, model split, and trip assignment.

This version of the Summit County model incorporated the model refinements to socioeconomic (SE) data and network structure identified through the Kimball Junction Area Plan. As such, no other model refinements were conducted. The following sections document the modeling methods and forecasts.

### Model Results

#### 2050 No Action Forecasts

2050 no action conditions were modeled using the revised Kimball Junction model. Figure 10 shows the 2050 Kimball Junction no action forecasts.

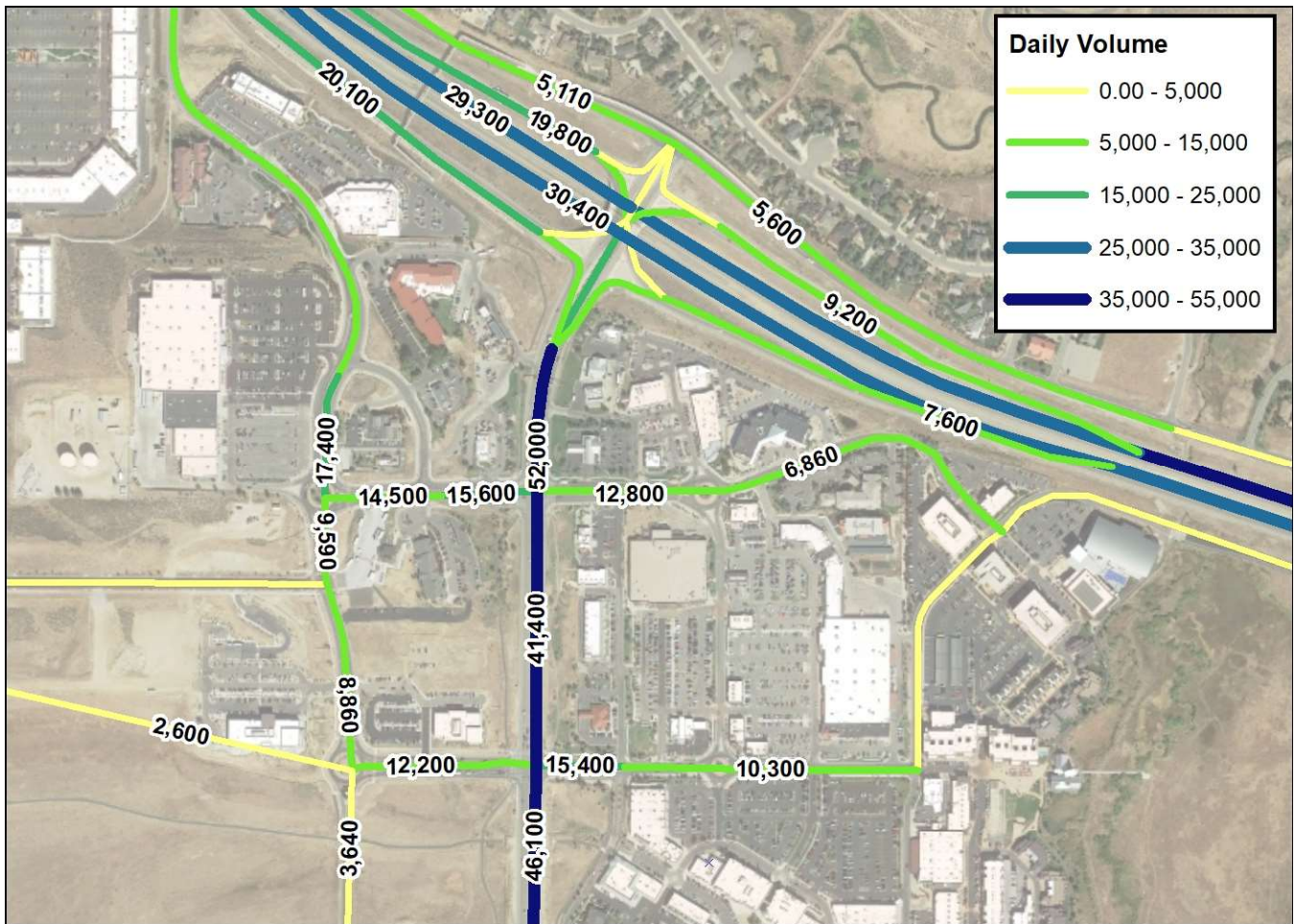
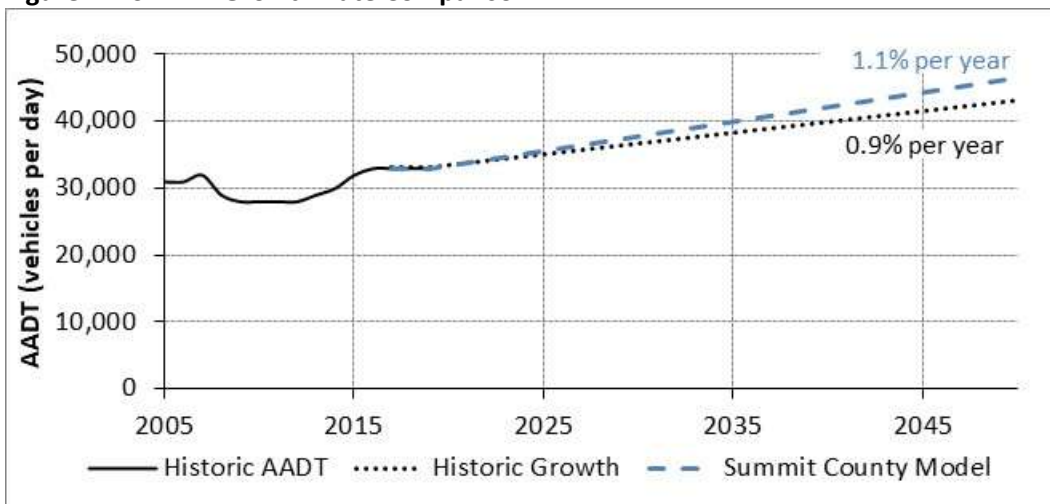


Figure 10: 2050 No Action Modeled Volumes

Figure 11 compares the forecasted growth on SR-224 from the Summit County model with historic traffic volumes. As seen in Figure 11, the annual growth rate from the Summit County model (1.1% per year) is similar to the historic growth rate (0.9% per year). This indicates that the forecasts are reasonably in line with historic trends. Historic growth trends and traffic modeling for the 2050 no action condition forecasts an average daily volume of over 40,000 vehicles per day, or about a 30%-40% increase over existing conditions.

Figure 11: SR-224 Growth Rate Comparison



### Traffic Data

The results from the Summit County travel demand model were used to develop the 2050 no action traffic volume forecasts for the study area. As described previously, the travel demand model accounts for traffic volumes growth attributed to changes in both regional land uses as well as local land uses. The future 2050 no action traffic volumes are shown in Figure 12 for the weekday AM peak hour and Figure 13 for the weekday PM peak hour.

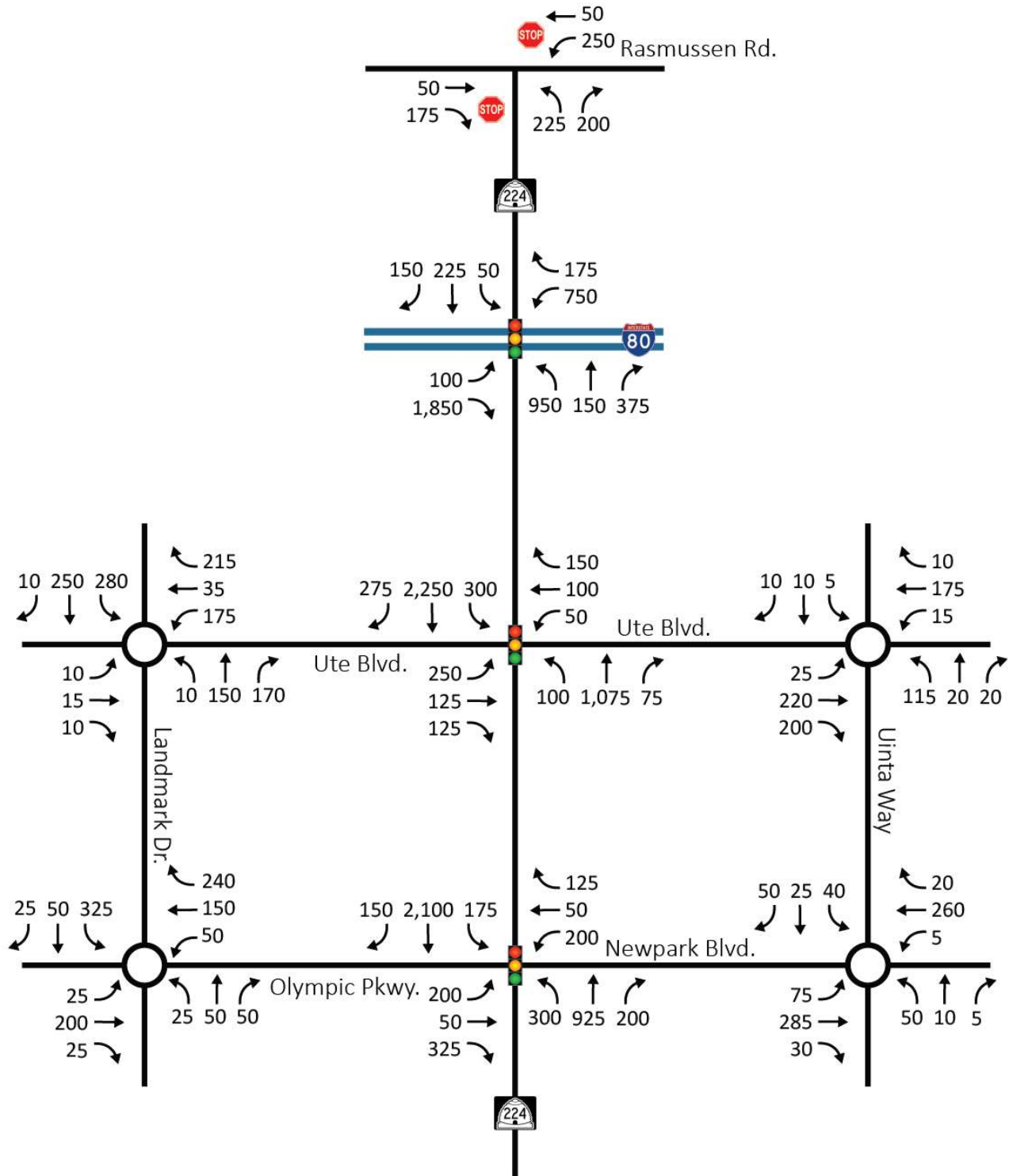


Figure 12: No Action (2050) Weekday AM Peak Hour Traffic Volumes

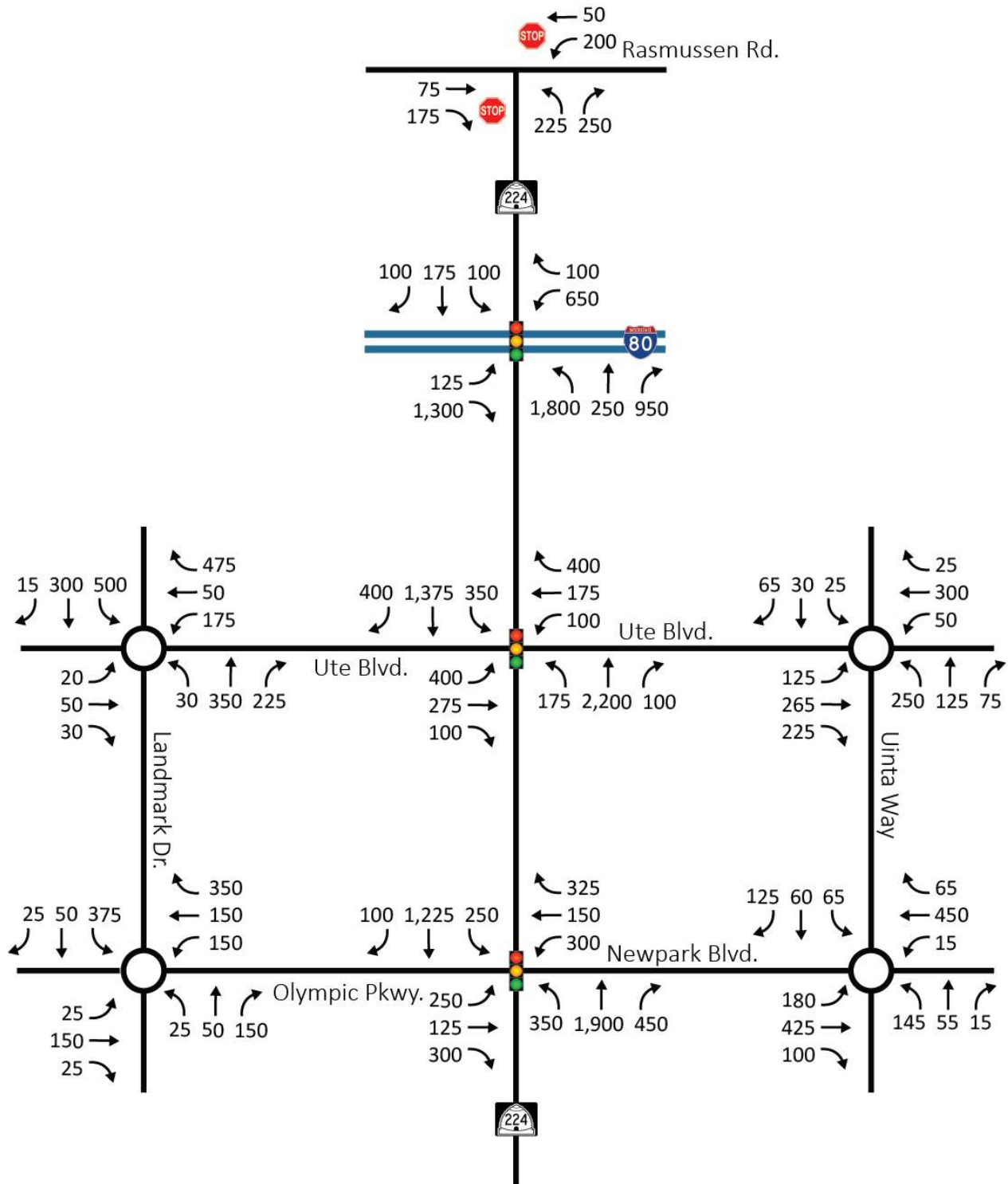


Figure 13: No Action (2050) Weekday PM Peak Hour Traffic Volumes



## Traffic Operations

Traffic operations along the corridor were evaluated for the 2050 no action conditions using the same VISSIM microsimulation traffic model which was used for existing conditions. This allows for a comparison between the existing and 2050 no action conditions to determine relative changes in traffic operations. Future improvements within the Kimball Junction area were included in the model to accurately represent 2050 conditions. This included installation of northbound and southbound dual left-turn lanes at the SR-224/Ute Boulevard intersection, which are programmed for construction in 2025. Additionally, the planned SR-224 BRT project was included as per the preferred alternative in the SR-224 environmental study. The elements of the BRT project that affect the study area include converting Route 10 to the BRT, modifying the Route 10 circulation pattern through the Kimball Junction Transit Center, adding transit-only lanes on the outside of SR-224 south of Olympic Parkway, adding dual northbound left-turn lanes and a transit-only westbound right-turn lane to the SR-224/Olympic Parkway intersection. Finally, signal timing cycle lengths, phase lengths, and offsets along the corridor were optimized to efficiently meet the changes in traffic demand during the weekday AM and PM peak hours.

### Traffic Operations

Vehicle level of service (LOS) was calculated for each of the intersections using the intersection node data. Node data was collected in 15-minute increments to determine average vehicle delay at each intersection during the peak hour of each model. The peak hour of the AM model was 8:00 AM – 9:00 AM and the peak hour of the PM model was 4:00 PM – 5:00 PM. Using the average vehicle delay, level of service was determined from the HCM thresholds for unsignalized and signal-controlled intersections.

Table 11 summarizes the results of the existing conditions traffic operations. Results from the existing traffic operations analysis are also included for comparison. As mentioned previously, unsignalized intersection LOS is defined on a separate scale than signalized intersections and is reported for the worst-performing approach rather than the intersection as a whole. Additionally, for this study, when intersections exceed the LOS F threshold by a significant margin, the average delay is reported as >100 seconds per vehicle for signalized intersections and >80 seconds per vehicle for unsignalized intersections.

As shown in Table 11, overall conditions worsen from existing conditions with the increase in traffic volumes in the area. Every signalized intersection operates at LOS E or LOS F in at least one peak hour. When signalized intersections show better than LOS E or LOS F, it is likely due to upstream bottlenecks metering the traffic flow as discussed previously. As mentioned with existing conditions, due to the overcapacity conditions occurring at Olympic Parkway, vehicles at the intersections to the north are being artificially metered and are not serving the actual demand volumes. By remediating the traffic issues solely at the Olympic Parkway intersection, it is likely that the congestion points would be moved to either the Ute Boulevard or I-80 SPUI.

Traffic performance at the unsignalized intersections is generally acceptable other than the delay for the northbound approach at the Ute Boulevard/Landmark Drive roundabout worsening from existing conditions. Again, the heavy southbound flow into the roundabout and queues along Ute Boulevard from the SR-224 signal are the key contributors to congestion at this location.

**Table 11: Existing and 2050 No Action Peak Hour Intersection Vehicle Delay and LOS**

Location	Control Type	Existing Conditions		2050 No Action Conditions	
		Vehicle Delay (sec / veh)	LOS (Worst Approach)	Vehicle Delay (sec / veh)	LOS (Worst Approach)
<b>Weekday AM Peak Hour</b>					
SR-224/Rasmussen Rd	Stop-Controlled	11	B (WB)	14	B (WB)
SR-224/I-80 SPUI	Traffic Signal	>100	F	>100	F
SR-224/Ute Blvd	Traffic Signal	29	C	37	D
SR-224/Olympic Pkwy	Traffic Signal	30	C	36	D
Ute Blvd/Landmark Dr	Roundabout	3	A (NB)	9	A (NB)
Olympic Pkwy/Landmark Dr	Roundabout	2	A (SB)	6	A (SB)
Ute Blvd/Uinta Way	Roundabout	3	A (EB)	5	A (EB)
Newpark Blvd/Uinta Way	Roundabout	4	A (EB)	3	A (EB)
<b>Weekday PM Peak Hour</b>					
SR-224/Rasmussen Rd	Stop-Controlled	12	B (WB)	12	B (WB)
SR-224/I-80 SPUI	Traffic Signal	25	C	>100	F
SR-224/Ute Blvd	Traffic Signal	53	D	63	E
SR-224/Olympic Pkwy	Traffic Signal	>100	F	>100	F
Ute Blvd/Landmark Dr	Roundabout	56	F (NB)	>80	F (NB)
Olympic Pkwy/Landmark Dr	Roundabout	2	A (WB)	8	A (SB)
Ute Blvd/Uinta Way	Roundabout	5	A (EB)	16	C (WB)
Newpark Blvd/Uinta Way	Roundabout	19	C (SB)	38	E (WB)

### Travel Times

Using the same travel time segments and parameters in the existing peak hour VISSIM models, vehicular travel times for the 2050 no action were analyzed. Table 12 summarizes the AM and PM peak hour travel times from the VISSIM simulation model. Travel times for 2050 no action nearly double from existing conditions as congestion increases. This is anticipated due to the large increase of vehicles on the northbound approach traveling from the Canyons and Park City to I-80 as well as increases anticipated on the east and west side of SR-224 at Kimball Junction.

**Table 12: Existing and 2050 No Action AM and PM Peak Hour Travel Times**

Travel Time Segment		Time Period	VISSIM Average Travel Time (min)	
From	To		Existing	2050 No Action
I-80 EB off ramp Gore	SB SR-224 approx 1,100 ft south of Olympic Pkwy	AM Peak Hour	5:30	11:00
NB SR-224 at Canyons Resort Drive	SR-224/I-80 SPUJ	PM Peak Hour	12:00	23:30

## Queues

The weekday AM and PM peak hour vehicle queues were analyzed for the 2050 no action scenario. The queues were analyzed using the same methodology as was used for the existing weekday AM and PM peak hour conditions. Average and 95<sup>th</sup> percentile vehicle queues are reported in Table 13. The existing weekday AM and PM peak hour queues are also included to provide a comparison of the relative change expected between existing and 2050 no action conditions.

For 2050 no action conditions, the AM peak hour eastbound off ramp queues extend on the I-80 mainline well past the Jeremy Ranch interchange. The PM peak hour queues extend past Canyons Resort Drive. The PM average queue and 95<sup>th</sup> percentile queue lengths are similar because the PM peak hour queues show no dissipation during the PM peak hour.

**Table 13: Existing and 2050 No Action AM and PM Peak Hour Vehicle Queues**

	Existing		2050 No Action	
	Average Queue (ft)	95 <sup>th</sup> Percentile Queue (ft)	Average Queue (ft)	95 <sup>th</sup> Percentile Queue (ft)
<b>AM Peak Hour</b>				
I-80 eastbound off ramp queue	1,900 ft (0.4 mi)	2,600 ft (0.5 mi)	12,300 ft (2.3 mi)	19,400 ft (3.7 mi)
<b>PM Peak Hour</b>				
S.R. 224 northbound queue at Olympic Parkway	8,100 ft (1.5 mi)	9,600 ft (1.8 mi)	12,400 ft (2.4 mi)	12,400 ft (2.4 mi)

## Transit

Within the Kimball Junction Area, transit service is expected to maintain an important role in moving people to and through the area. Existing levels of transit service in the Kimball Junction Area are anticipated to be maintained or expanded in order to provide frequent and reliable service connecting the surrounding area. As previously mentioned, the SR-224 BRT is planned to be constructed within the next five years. Successful implementation of this project could lead to a higher percentage of users choosing transit as an option to navigate throughout the SR-224 corridor, including the Kimball Junction Area.

## Active Transportation

With the planned development of vacant land uses in the Kimball Junction Area, it is likely that the area could become more walkable as potential destinations will be located closer together and there will be a higher density of complementary land uses. Similar to existing conditions, it will be important to determine where the desire paths are for people walking and to make sure these are constructed and maintained throughout the year to create a well-connected network for people walking and bicycling in the neighborhood on both sides of SR-224.

## CONCLUSIONS

This memorandum documents traffic conditions for existing and the 2050 no action scenario to support the Kimball Junction Environmental Study. The conclusions of the analysis are:

### Traffic

Existing traffic conditions exhibit traffic operational concerns during the winter AM and PM peak hours. Several of the study intersections operate at LOS E or LOS F which indicates heavy vehicle delays with long queues and extended travel times. Traffic volume growth is expected along the SR-224 corridor and on both sides of the Kimball Junction neighborhood by 2050. In the 2050 no action conditions, severe congestion is anticipated to occur, particularly for the I-80 eastbound off ramp during the AM peak hour and the northbound direction of SR-224 during the weekday PM peak hour. Average vehicle delay, vehicle travel times, and queue lengths are all anticipated to grow from existing to 2050 no action conditions. Travel times during peak hours for key movements are anticipated to nearly double from existing conditions for vehicles traveling northbound on SR-224 to I-80.

### Transit

Transit service within the Kimball Junction area is concentrated around the Kimball Junction Transit Center on the west side of SR-224. This center is served by multiple, local fixed routes and on-demand micro-transit service. A regional connection to Salt Lake City is also available. Within five years, the Route 10 is expected to be converted into a BRT with the construction of transit-only lanes on the sides of SR-224. As vehicle volumes and travel times within the Kimball Junction area and along the SR-224 corridor are anticipated to increase by the 2050 horizon year, it is important to find alternative ways to move people more efficiently using less space throughout the basin.

### Active Transportation

The Kimball Junction area currently has a robust network of multiuse paths on both sides of SR-224 providing access throughout the basin as well as to multiple recreational opportunities. Within the Kimball Junction area, there are two grade separated crossings of I-80 as well as one grade-separated crossing of SR-224 and two signalized at-grade pedestrian crosswalks. As the Kimball Junction area continues to develop and densify, it is likely that walking and bicycling to different uses could become a more attractive transportation option. There will be increased demand to cross SR-224 by active transportation users.

## APPENDIX A: ANALYSIS TIMEFRAME CONTEXTUAL DATA

The following represents data used to identify the analysis timeframe for the study. It is a compilation of travel time, flow, and speed data obtained from the UDOT ClearGuide and PeMS platforms.

Clearguide travel time and speed data were gathered for a southbound route and northbound route as shown in Figure A-1. Vehicular travel times and speeds were analyzed for the time period from April 1, 2021 to April 1, 2022. Figures A-2 and A-3 show the average southbound travel times during the AM peak period (7:00 AM to 10:00 AM) for a 12-month period and a four-month winter time period. Figure A-4 illustrates the relationship between travel times and flow rates for the four-month winter time period. The four-month winter 85<sup>th</sup> percentile travel time is noted in Figure A-3 and A-4. Figures A-5 to A-8 summarize daily speed contours for each winter month. Figures A-9 through A-15 present similar information for the northbound route.

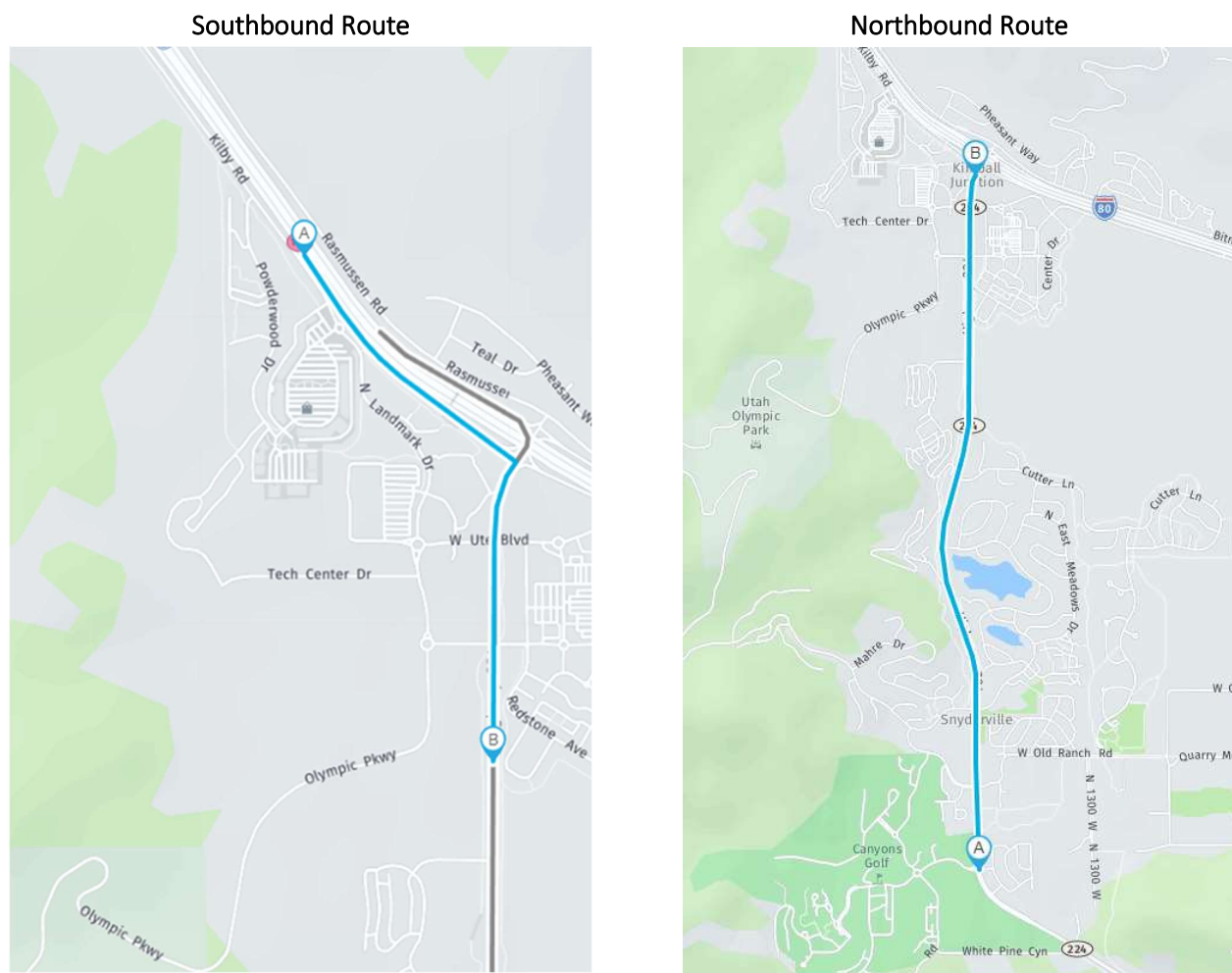


Figure A-1: ClearGuide Travel Time Routes

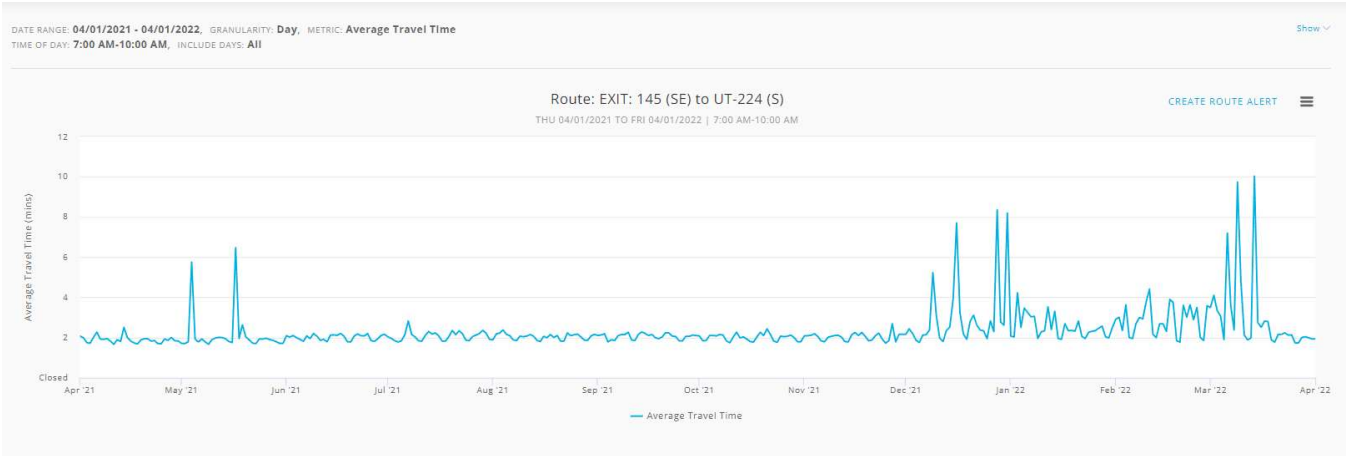


Figure A-2: Southbound AM (7:00-10:00 AM) Average Travel Times April 1, 2021 to April 1, 2022

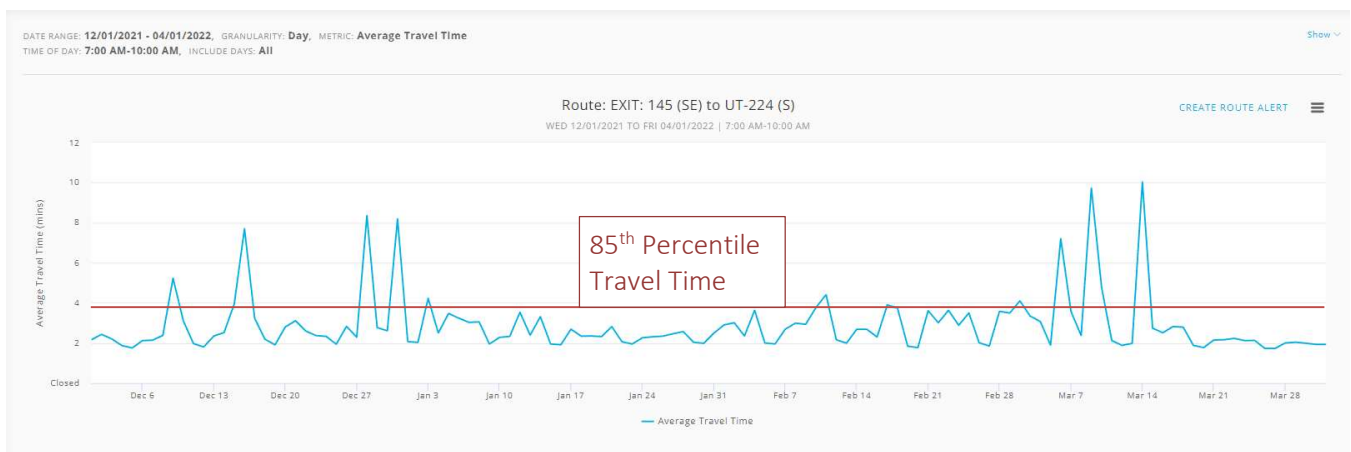


Figure A-3: Southbound AM (7:00-10:00 AM) Average Travel Times Dec 1, 2021 to April 1, 2022

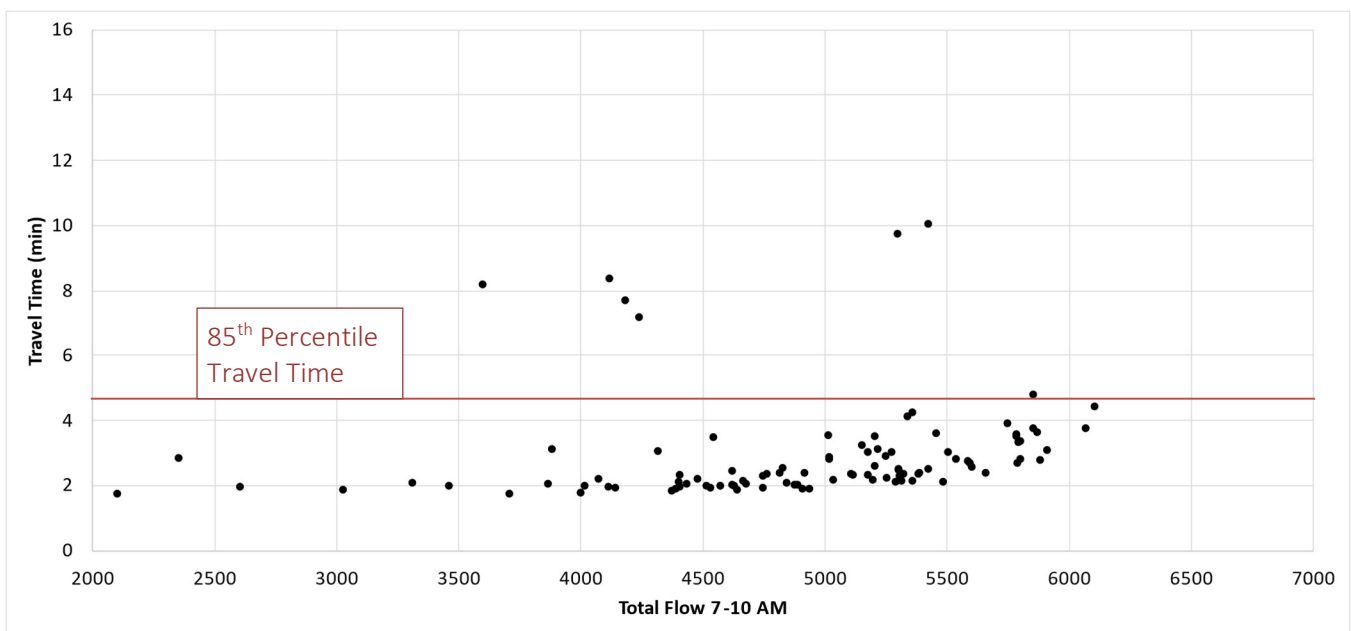


Figure A-4: Southbound AM (7:00-10:00 AM) Average Travel Time Versus Total Flow Dec 1, 2021 to April 1, 2022



Figure A-5: Southbound Daily Speed Contours December 2021

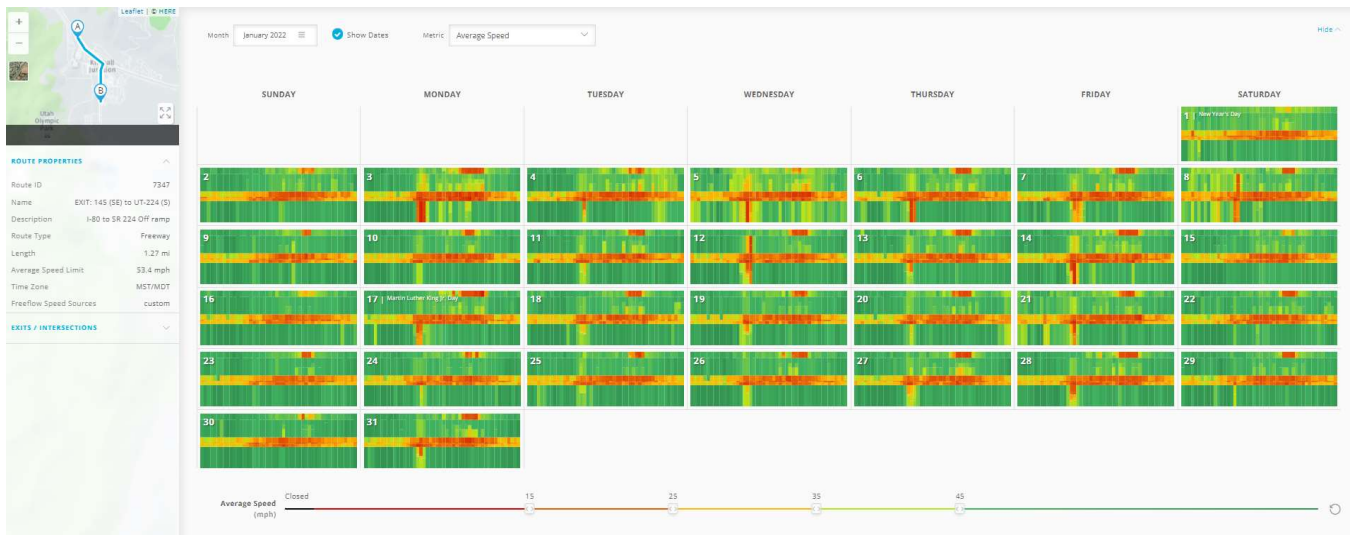


Figure A-6: Southbound Daily Speed Contours January 2022



Figure A-7: Southbound Daily Speed Contours February 2022



Figure A-8: Southbound Daily Speed Contours March 2022

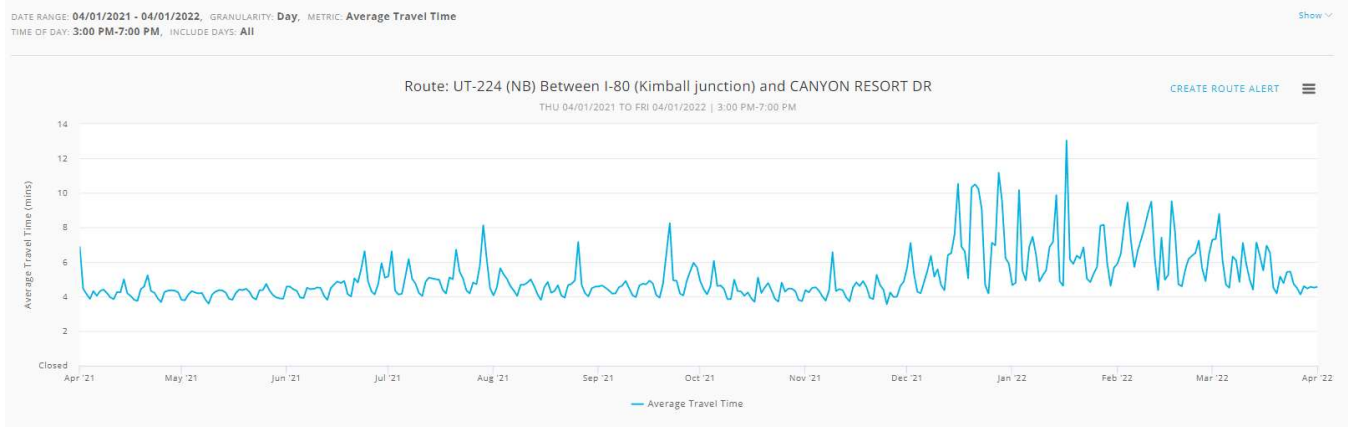


Figure A-9: Northbound AM (3:00-7:00 PM) Average Travel Times April 1, 2021 to April 1, 2022

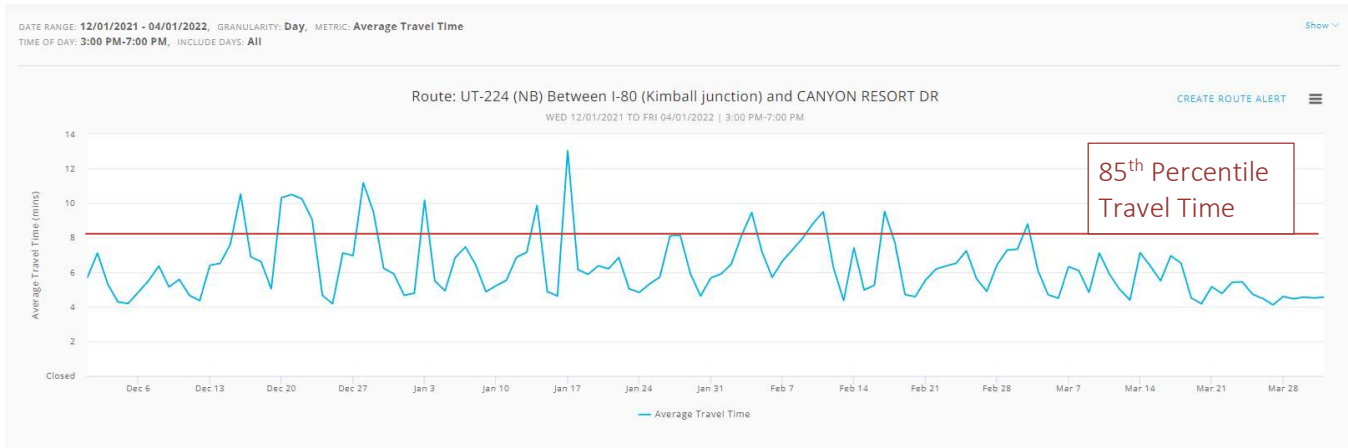


Figure A-10: Northbound AM (3:00-7:00 PM) Average Travel Times Dec 1, 2021 to April 1, 2022



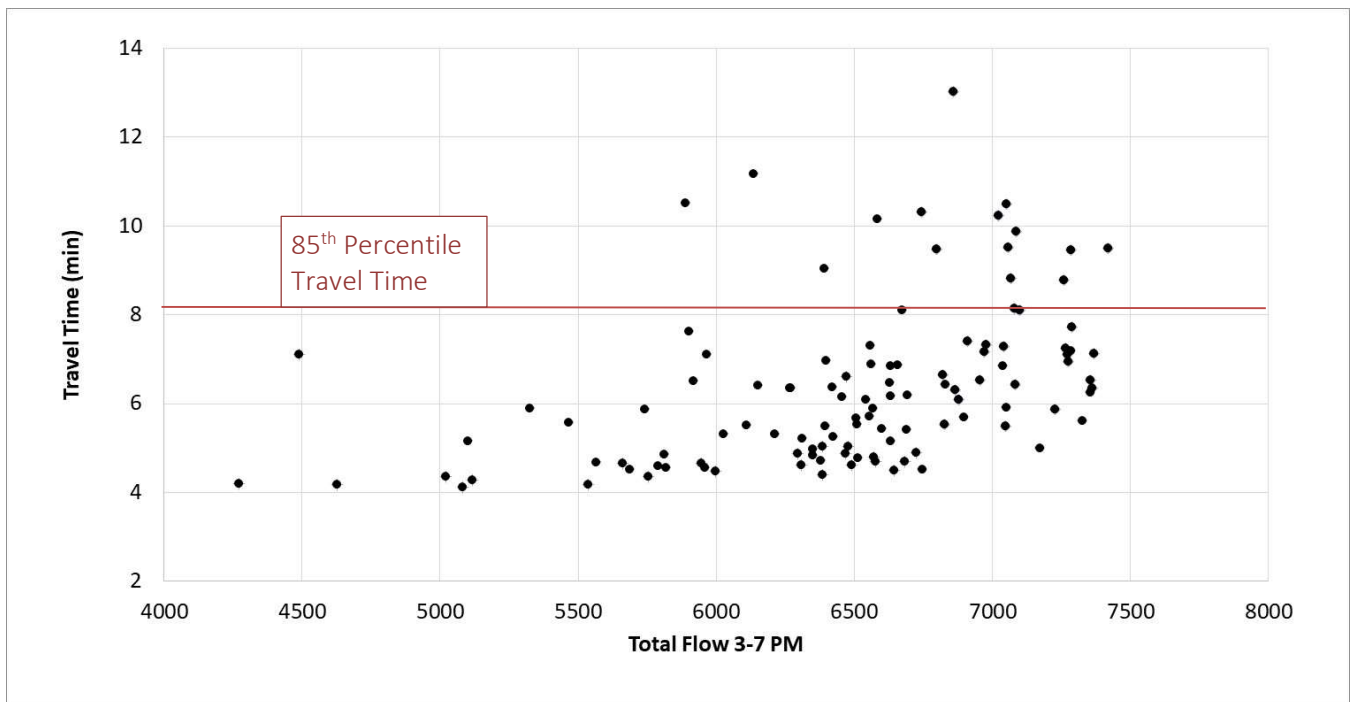


Figure A-11: Northbound AM (3:00-7:00 PM) Average Travel Time Versus Total Flow Dec 1, 2021 to April 1, 2022

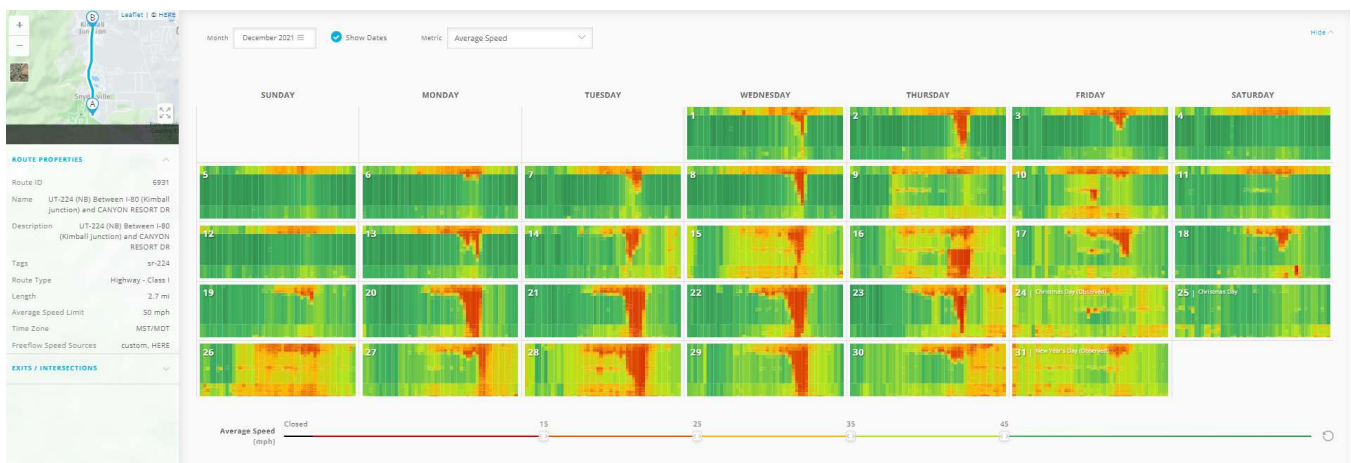


Figure A-12: Northbound Daily Speed Contours December 2021



Figure A-13: Northbound Daily Speed Contours January 2022

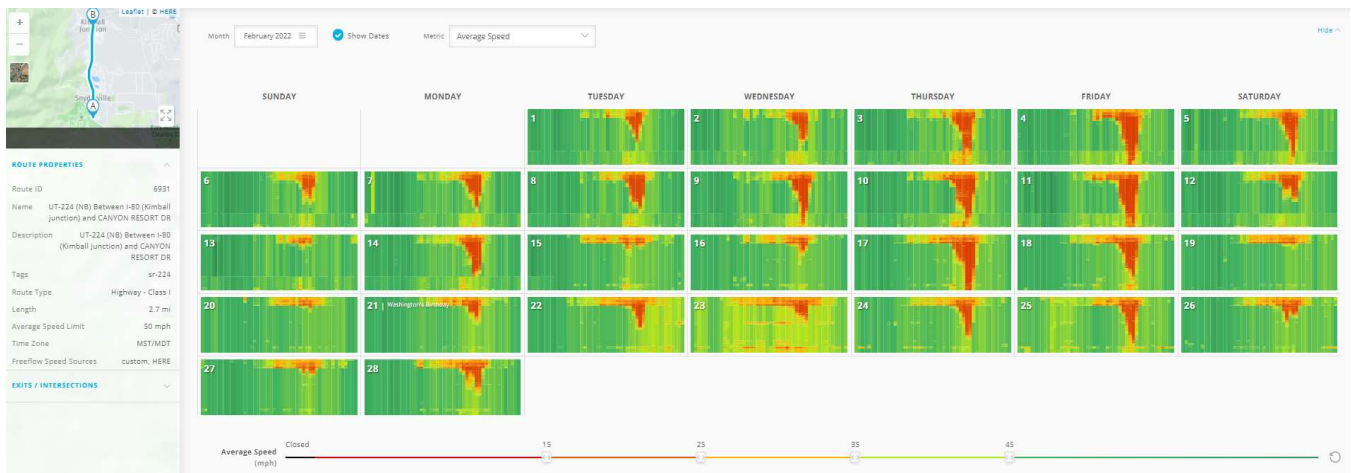


Figure A-14: Northbound Daily Speed Contours February 2022

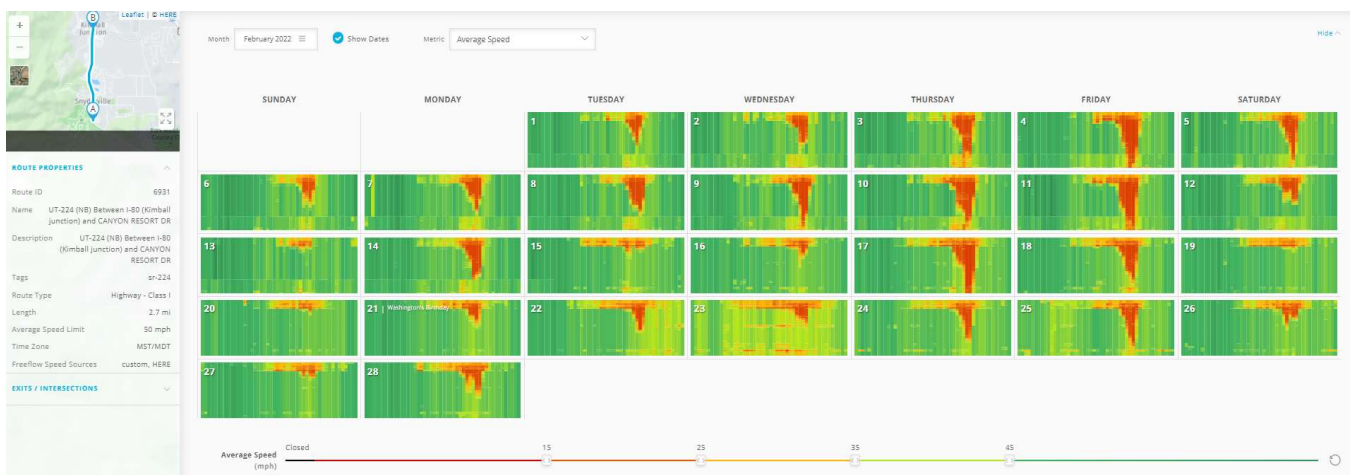


Figure A-15: Northbound Daily Speed Contours March 2022