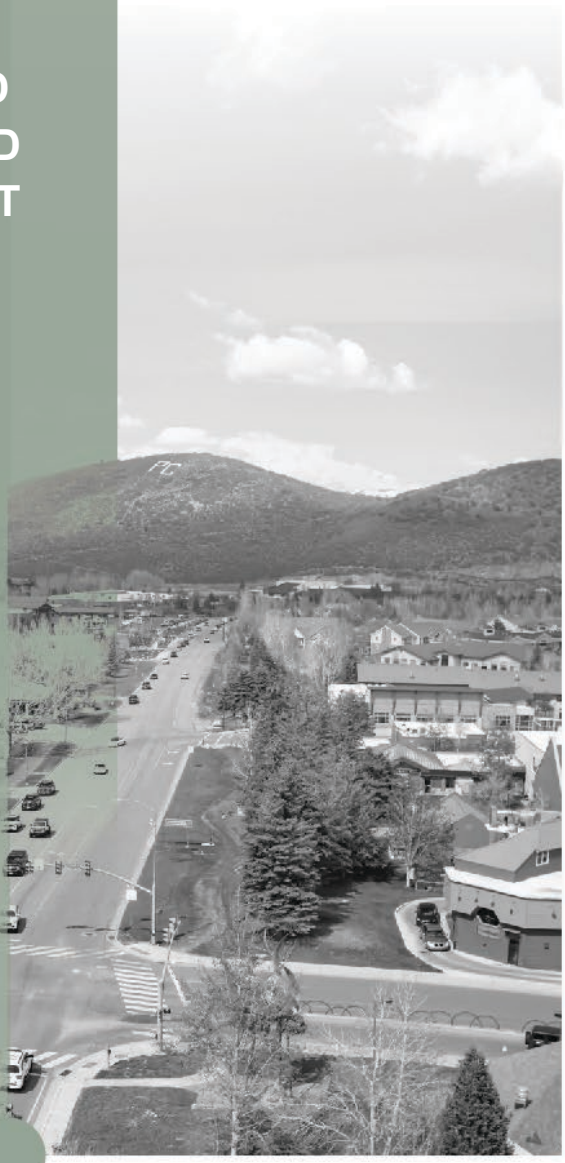
Re·create 248

RANGE OF ALTERNATIVES AND PURPOSE AND NEED SCREENING REPORT

January 2025



Re·create 248

Table of Contents

List of Tables

List of Figures

Acronyms and Abbreviations

AGT	Automated Guideway Transit
BRT	Bus Rapid Transit
CRT	Commuter Rail Transit
EV	Electric Vehicle
HOV	High-Occupancy Vehicle
HVT	High Valley Transit
LPA	Locally Preferred Alternative
LRT	Light Rail Transit
MOE	Measures of Effectiveness
OTTC	Old Town Transit Center
PCMC	Park City Municipal Corporation
PCT	Park City Transit
PRT	Personal Rapid Transit
Rail Trail	Historic Union Pacific Rail Trail
Re-create 248	Re-create 248 Transit Study
ROW	Right-of-way
SOV	Single-Occupancy Vehicle
SRTP	Short-Range Transit Plan
UDOT	Utah Department of Transportation

1 EXECUTIVE SUMMARY

The Purpose and Need Screening was conducted as a preliminary pre-screening exercise for the Re-create 248 Transit Study. The goal of a pre-screening step is to evaluate a wide range of potential transit solutions to ensure that alternatives advancing into the formal Level 1 and Level 2 screening process most closely meet the Purpose and Need. A pre-screening exercise is typically used when there is a large number of alternatives, and it is unclear whether they are viable to advance into a formal alternatives screening process. Based on the results of this pre-screening exercise, alternatives that most closely meet the Purpose and Need are advanced for further evaluation into Level 1 screening. Alternatives that do not meet the Purpose and Need are not advanced for further consideration.

> Goal: To follow a defensible process to evaluate and document what is feasible and reasonable to advance through the transit study process.

The range of alternatives (the full list of alternatives can be found in Table 1) were compiled based on past plans, studies, and local transit interests. The evaluation framework and the screening matrix were developed to aid in the screening process. For the pre-screening exercise, each alternative was screened using the study's Purpose and Need Statement and the Measures of Effectiveness (MOEs) to determine how well the alternatives met the project needs. Alternatives that clearly did not meet the Purpose and Need Statement / MOEs, had some sort of fatal flaw to execution, or did not meet the feasibility criteria were screened out in an effort to reduce the number of alternatives that moved forward in the Level 1 screening process. For more information on how the Purpose and Need Statement was developed, please review the study's Existing and Future Conditions Report and the Purpose and Need Report.

The alternatives that successfully made it through the Purpose and Need Screening advanced to the Level 1 Screening. The Level 1 Screening is a largely qualitative-based planning-level evaluation that includes defining alignment assumptions, developing generalized cross-sections, performing a high-level environmental analysis, and reviewing high-level operational assumptions.

The alternatives advancing to Level 1 Screening are:

- Dedicated Bus Lanes
- Light Rail
- Automated Guideway Transit (AGT)
- A Rail Trail alignment for the three modes listed above

Additionally, flex lanes will be studied as operational considerations for the alternatives, where applicable.

2 STUDY OVERVIEW

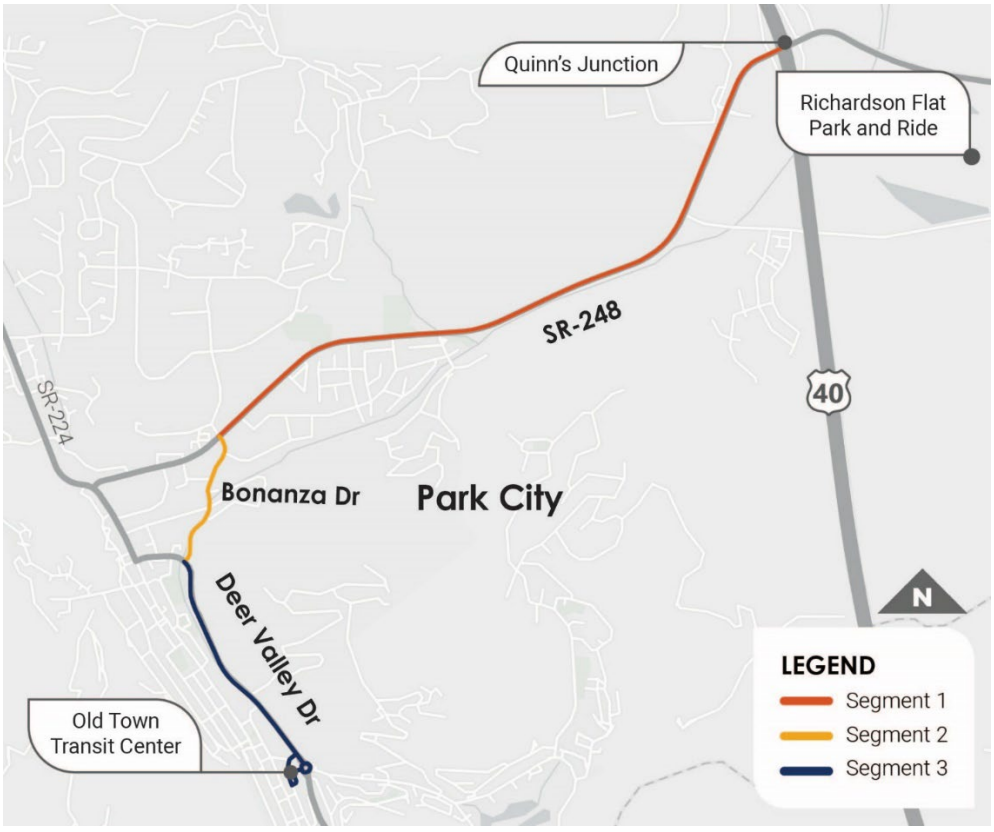
2.1 INTRODUCTION

Park City Municipal Corporation (PCMC), located in Summit County, UT, in collaboration with the Utah Department of Transportation (UDOT), also called the Study Partners, has initiated the Re-create 248 Transit Study (Re-create 248). The study is aimed at enhancing reliable high-capacity transit service along the SR-248 corridor, Bonanza Drive, and Deer Valley Drive that can be advanced to the next phase of project development: a National Environmental Policy Act (NEPA)-level environmental study and preliminary engineering. This study will identify a locally preferred alternative (LPA) that will include a definition of areas to be served, transit mode/type of transit technology, and logical termini (project limits).

2.2 STUDY AREA

The study area for Re-create 248 is between Quinn's Junction (the interchange to access US-40) and the Richardson Flat Park and Ride on the east (Segment 1), along SR-248, then south along Bonanza Drive (Segment 2), and Deer Valley Drive to the Old Town Transit Center (OTTC) on the west (Segment 3) (Figure 1).

Figure 1. Re-create 248 Study Area Map



2.3 REPORT PURPOSE

This report aims to document the Purpose and Need Screening process and findings that inform the alternatives recommended to advance into Level 1 Screening. This report describes:

1. The Project Purpose and Need
2. Screening approach and methodology
3. Screening results for the range of alternatives considered
4. Alternatives advancing into Level 1 screening
5. Alternatives not advancing into additional analysis

3 PURPOSE AND NEED

The Re-create 248 Purpose and Need was developed through a collaborative process and informed by an understanding of the study area context (documented in the Existing and Future Conditions Report) and ongoing Study Partner and agency coordination. The detailed Purpose and Need Report is also available for review on the study website.

3.1 PROJECT PURPOSE STATEMENTS

Based on the identification of needs in the study area, the following Purpose statements describe the objectives to be achieved by this project.

- Support the transportation demands of population, employment growth, and economic resiliency in the region.
- Increase the reliability, accessibility, and overall resiliency of travel on the corridor by improving transit travel times between Quinn's Junction and the OTTC.
- Enhance the quality of life in the region by improving access to opportunities between existing and planned employment, housing, and key destination centers on the corridor, especially during peak periods.
- Support local and regional plans and policies that address transportation demand management and avoid excessive road widening.
- Enhance mobility along the corridor through transportation choices.

3.2 PROJECT NEED STATEMENTS

The following are the identified project need statements that identify the underlying problems or conditions the project should address:

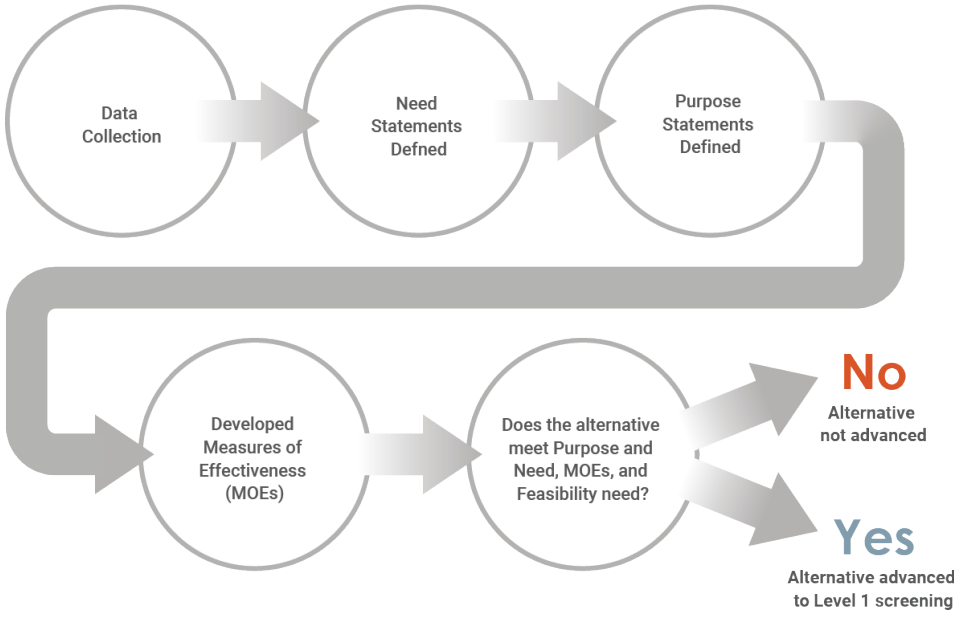
- Local and regional population and job growth are substantial and will continue to increase travel demand on the corridor.
- Populations need access to key destinations on-corridor between Quinn's Junction and the OTTC for employment, education, and services.
- Current transit travel times are often unreliable due to existing and future corridor congestion, which is exacerbated during peak times.
- Shoulder-running buses transitioning into mixed-flow traffic limits the ability to provide contiguous transit service and decreases transit reliability.
- Populations living on and near the corridor and commuting into the area for work, need reliable transit service.
- Local and regional plans indicate a need for multimodal corridor solutions to support efforts that promote satellite parking strategies that are well served by a high-frequency transit backbone network and are in line with the local desire to limit roadway widening.
- Parking is limited in town and highly utilized; additional travel modes are needed to access Park City.

4 PURPOSE AND NEED SCREENING

4.1 APPROACH

A wide range of transit alternatives that could potentially address existing and future travel demands along the corridor was developed. The range of alternatives was based on past plans, studies, and local transit interests. This resulted in 12 possible alternatives. The evaluation framework and the screening matrix were then developed to aid the screening, creating a defensible process to evaluate and document which alternatives are feasible and reasonable to advance through the transit study process and that meet the Purpose and Need (Figure 2).

Figure 2. Purpose and Need Screening Approach

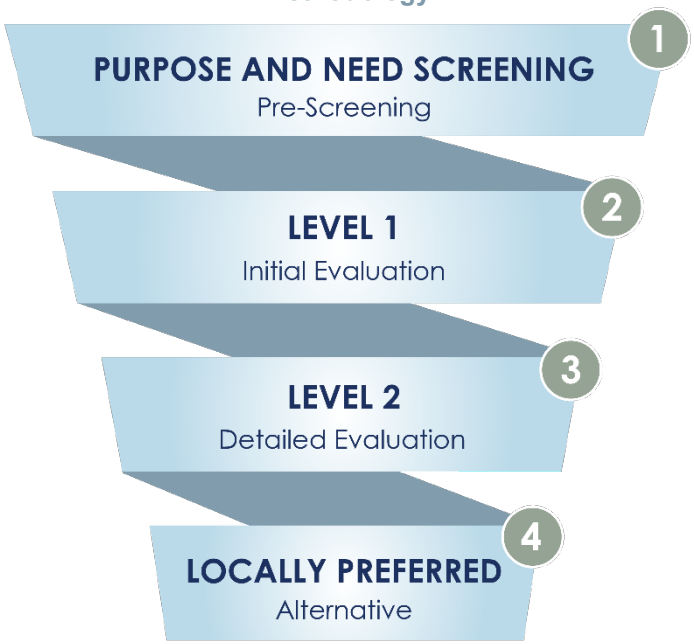


4.2 METHODOLOGY

Purpose and Need Screening is Step 1 of this multistep screening process with the end goal of identifying an LPA that best meets corridor needs (Figure 3). The goal of this screening was to develop a list of alternatives from the broader range of 12 alternatives identified at the beginning of the study that could then be further refined in Step 2, the Level 1 Screening. The range of alternatives, explained in greater detail below in Section 5, comes primarily from various adopted local and regional plans. Several were identified by local officials or through past stakeholder/public input.

Alternatives that were from previously completed planning studies and other guiding documents were selected based on their relevance to the study area and the scope of this transit study.

Figure 3. Re-create 248 Screening Methodology



4.3 MEASURES OF EFFECTIVENESS

Measures of Effectiveness (MOE) were developed by utilizing the existing and future conditions data and are directly tied to the project Need statements. The MOEs aid in screening the alternatives by providing measurable metrics for evaluation. The MOEs are as follows:

- Does the alternative manage congestion, or does it reduce travel delay?
- Does the alternative provide access to key destinations on the corridor?
- Does the alternative reduce transit travel times?
- Does the alternative increase transit on-time performance?
- Does the alternative provide reliable transit on-corridor for populations?
- Does the alternative provide high-frequency transit service on-corridor with limited road widening?
- Does the alternative provide additional travel modes on-corridor in the study area?

Feasibility Requirement:

- Is the alternative feasible to implement by 2034; is the alternative a service-proven technology? Is the alternative compatible with the existing transit system?

The feasibility requirement is tied to PCMC's desire to have a viable service-proven transit project prior to Utah's 2034 Winter Olympics. While the transit solution is intended to serve local and regional travelers in perpetuity, there is a desire to avoid construction impacts during the Olympics and develop an attractive alternative to single-occupancy vehicles (SOVs) on SR-248, Bonanza Drive, and Deer Valley Drive for visitors during this timeframe and into the future.

5 RANGE OF ALTERNATIVES

Several plans and studies completed over the last decade worked to address the growing traffic congestion in Park City and the need for a more robust public transit system, especially on gateway corridors including SR-248. Table 1 defines the pertinent alternatives gathered and includes the mode (where applicable), alignment assumption, and relevant planning document. The analyses provided in the sourced planning documents were used to define these alternatives for the Purpose and Need Screening.

Table 1. Range of Alternatives Definitions and Sources

ALTERNATIVE	MODE	ALIGNMENT ASSUMPTION	SOURCE
Gondola	Monocable Gondola or Tramway	Point-to-point access from Quinn's Junction to OTTC or other major destinations, bypassing road alignments.	Gondola Feasibility Study 2020 (PCMC) Emerging Disruptors Study 2024 (PCMC)
One-way Loop	SOV/High-Occupancy Vehicle (HOV) - Potential for Enhanced Transit	Conversion of SR-248, SR-224, and Bonanza Drive into a counterclockwise traffic circulation loop.	Emerging Disruptors Study 2024 (PCMC)
Reversible Flex Lanes	SOV/HOV - Potential for Enhanced Transit	On SR-248 from Wyatt Earp Way to Richardson Flat Road.	SR-248 Corridor Plan 2009 (PCMC) Emerging Disruptors Study 2024 (PCMC)
Dedicated Bus Lanes	Bus Rapid Transit (BRT) (Side or Center-Running)	On SR-248 from Quinn's Junction to Bonanza Drive, Bonanza Drive to Deer Valley Drive, and Deer Valley Drive to the OTTC. Generally, includes stations every 1/2-1 mile.	Park City Forward 2022 (PCMC) Emerging Disruptors Study 2024 (PCMC)
Light Rail / Streetcar	LRT, or Streetcar in Mixed Traffic	On SR-248 from Quinn's Junction to Bonanza Drive, Bonanza Drive to Deer Valley Drive, and Deer Valley Drive to the OTTC. Generally, includes stations every ~1 mile.	Emerging Disruptors Study 2024 (PCMC)
AGT	Assume Monorail or like-system that is competitive with other public transit in terms of capacity, headways, and footprints.	On SR-248 from Quinn's Junction to Bonanza Drive, Bonanza Drive to Deer Valley Drive, and Deer Valley Drive to the OTTC.	Emerging Disruptors Study 2024 (PCMC)
Rail Trail Transit Alignment	Personal Rapid Transit (PRT)/LRT/BRT/Monorail	From Quinn's Junction or Richardson Flat Park and Ride to Wyatt Earp Way.	SR-248 Corridor Plan 2009 (PCMC)
EV Tunnel	SOV	Option 1 alignment on SR-248, Bonanza Drive, Deer Valley Drive to Old Town. Option 2 alignment SR-248 to SR-224 to Old Town.	Emerging Disruptors Study 2024 (PCMC)
Traditional Widening	SOV	On SR-248 from Wyatt Earp Way to Richardson Flat Road.	SR-248 Environmental Assessment 2020 (UDOT) SR-248 Concept Report 2014 SR-248 Corridor Plan 2009 (PCMC)

ALTERNATIVE	MODE	ALIGNMENT ASSUMPTION	SOURCE
Commuter Rail	Commuter Rail	From Quinn's Junction and Richardson Flat Park and Ride, SR-248 to Bonanza Drive, and Deer Valley Drive to OTTC. Commuter rail station spacing is approximately 5 miles between stations meaning one stop at Quinn's Junction and one at OTTC).	Not formally studied
Minor Transit Improvements	Bus System/Amenity Enhancements/Station Access	From Quinn's Junction and Richardson Flat Park and Ride, SR-248 to Bonanza Drive, and Deer Valley Drive to OTTC.	Park City Short Range Transit Plan 2023 (PCMC) SR-248 Concept Report 2014
No Action Alternative*	N/A	N/A	N/A

*The No Action Alternative provides a baseline for comparing the potential impacts of the other alternatives. The No Action Alternative includes planned projects from the 2023 Wasatch Back RPO Transportation Plan and other local projects that would be constructed within the study area between now (2024) and 2050 but does not include any components of the Project. The existing transit routes would continue to use the current schedule and provide service at existing capacities.

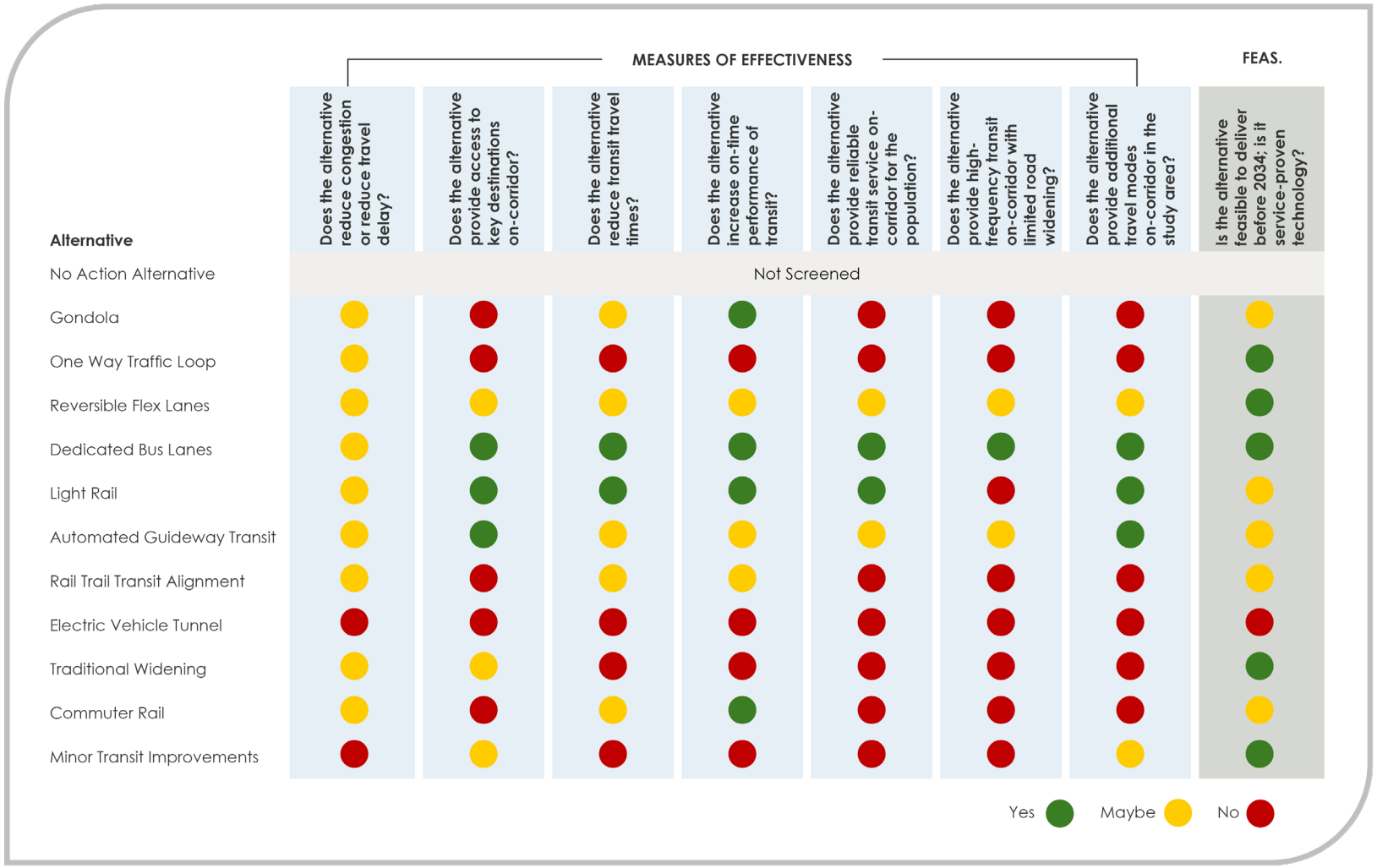
Based on the list above, the Re-create 248 Existing and Future Conditions Report, and the Re-create 248 Purpose and Need Report, these alternatives advanced into the Purpose and Need Screening process (Figure 4).

Figure 4. Range of Alternatives that Advanced to the Purpose and Need Screening

5.1 SUMMARY OF SCREENING RESULTS

Each alternative was evaluated against the MOEs and the feasibility requirement and given either a Yes, meets MOEs well (green); May meet MOEs but not enough information or data exists to define at this time (yellow); or No, does not meet MOEs well (red). Figure 5 illustrates how each alternative was screened during this process. A more detailed explanation of the screening results and the alternatives can be found in the sections below.

Figure 5. Purpose and Need Screening Summary



6 ALTERNATIVES ADVANCING TO LEVEL 1 SCREENING

Four of the alternatives were evaluated favorably or did not have enough technical analysis or detail to screen out at this phase and will advance to Level 1 Screening for further review.

The alternatives advancing to Level 1 Screening include:

- Dedicated Bus Lanes
- Light Rail
- Automated Guideway Transit (AGT)
- A Rail Trail alignment for the three modes

Reversible Flex Lanes will be reviewed as a subset of alternatives, as a way to potentially optimize operations and/or reduce footprints and potential impacts where practical. This more detailed evaluation will occur in Level 2 screening.

The range of transit alternatives, Purpose and Need Statement, and Level 1 screening approach were presented to Park City Council on December 6, 2024. Council was supportive of the alternatives recommended for advancement into Level 1 screening, and additionally, requested further analysis to understand what opportunities may exist by utilizing the Historic Union Pacific Rail Trail (Rail Trail) corridor for transit, which is currently a recreational trail facility that runs parallel to SR-248 from Quinn's Junction to Bonanza Drive.

The alternatives have been categorized into on-corridor and off-corridor (Rail Trail) alignments (Table 2).

Forecasted future traffic and transportation conditions on the corridor will be used to determine what a No Action alternative would look like.

Table 2.Transit Mode Definitions

MODE	PRELIMINARY ASSUMPTIONS	ON-CORRIDOR ALIGNMENT	RAIL TRAIL ALIGNMENT
Dedicated Bus Lanes (Bus Rapid Transit)	• Operates in exclusive (ROW), center-running, or side-running. • May operate in mixed-flow traffic on Bonanza Drive and Deer Valley Drive. • Considerations for how to operate exclusively with flex lanes will be analyzed • Assum ~3-6 stations, with spacing of ~1/2 to 1 mile between • For Rail Trail alignment, assume the cross-section includes a trail	Y	Y

MODE	PRELIMINARY ASSUMPTIONS	ON-CORRIDOR ALIGNMENT	RAIL TRAIL ALIGNMENT
Light Rail	• Light rail operates in exclusive ROW, assume center-running • Assume 2-4 stations, ~1 mile between, but highly dependent on density and land uses	Y	Y
Automated Guideway Transit (Monorail)	• Operates in exclusive ROW, elevated/completely grade-separated including stations • Assume ~2-4 stations, with spacing of ~1 mile between • For Rail Trail alignment, assume the cross-section includes a trail	Y	Y

6.1 DEDICATED BUS LANES

Dedicated bus lanes (often referred to as BRT) are generally implemented on major routes and offer exclusive ROW for public transit. They are often used where traffic congestion affects transit reliability. Dedicated bus lanes may be located adjacent to the curb (side-running) or in the middle of the corridor (center-running). There is a wide range of definitions for BRT; however, for the purpose of this study, BRT includes dedicated bus lanes and more frequent headways (e.g., 10-minute frequency during peak times). Side-running versus center-running BRT options will be evaluated in Level 2 screening if the alternative is advanced.

This high-frequency transit alternative for SR-248 was recommended as a Phase 1 project in Park City Forward 2022, the city's recently completed transportation master plan. It was also studied in the more recent Emerging Disruptors Study 2024, among others (listed in Table 1). This alternative could achieve higher passenger capacity than today's bus service, it is compatible with the existing system and the BRT project (currently in design) on SR-224 and would be a low-emissions transit option with the use of PCMC's electric fleet. Table 6 outlines how the Dedicated Bus Lane Alternative fared during the Purpose and Need Screening. This Alternative met nearly all the MOEs, the Feasibility Need, and the Purpose and Need and will be advancing into Level 1 screening.

Table 3. Dedicated Bus Lane Alternative MOE Results

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on the corridor? -OR- Does the alternative reduce travel delay on the corridor?	Does the alternative improve access to key destinations on the corridor between Quinns Junction and the OTTC?	Does the alternative reduce transit travel times on the corridor between Quinns Junction and the OTTC?	Does the Alternative increase the on-time performance of transit on the corridor between Quinns Junction and the OTTC?	Does the alternative provide reliable transit service on the corridor that serves the population?	Does the alternative provide high-frequency transit on the corridor between Quinns Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on the corridor between Quinns Junction and the OTTC?	**Feasibility:** Implementable before 2034? Service proven technology?
							
May reduce congestion at certain times. Will reduce travel delays for transit riders.	A dedicated bus lane will improve access on-corridor and between destinations.	Transit travel times are expected to be reduced with dedicated bus lanes.	Transit on-time performance is expected to increase with dedicated bus lanes.	Transit reliability for the population is expected to increase with dedicated bus lanes.	Provides a high-frequency transit solution that could be implemented with limited corridor widening.	A dedicated bus provides additional travel modes in the study area.	Implementable with reasonable changes to the corridors and transit infrastructure/ vehicles. Service-proven.

6.2 LIGHT RAIL

LRT operates exclusively in dedicated guideways. LRT was studied in the Emerging Disruptors Study; however, possible alignments and corridors were left undetermined. LRT would have reliable fixed transit routes, could see high ridership if connected with a regional rail system, and would be a low-emissions transit option. Additional ROW would likely be required to operate LRT in the corridor, with wider sections at stations. Additionally, 10-20 acres would be required at the end of the line for an operations and maintenance facility. An operations and maintenance facility would require a separate federally compliant site selection screening process and environmental study to clear the area if federal funds are desired for future phases. Streetcar was also assessed as part of this alternative preliminarily, and because it operates in-lane with general purpose traffic and would be susceptible to the same travel delays as vehicles, it was determined to not be competitive with transit in a designated guideway and did not meet the MOEs as well as LRT. This alternative met some of the MOEs, may meet the Feasibility Need, and met the Purpose and Need and will be advancing into Level 1 screening.

Table 4. Light Rail Alternative MOE Results

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on the corridor? -OR- Does the alternative reduce travel delay on the corridor?	Does the alternative improve access to key destinations on the corridor between Quinns Junction and the OTTC?	Does the alternative reduce transit travel times on the corridor between Quinns Junction and the OTTC?	Does the Alternative increase the on-time performance of transit on the corridor between Quinns Junction and the OTTC?	Does the alternative provide reliable transit service on the corridor that serves the population?	Does the alternative provide high-frequency transit on the corridor between Quinns Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on the corridor between Quinns Junction and the OTTC?	**Feasibility:** Implementable before 2034? Service proven technology?
							
LRT may reduce congestion and travel delays. Streetcar could exacerbate congestion and travel delays operating in mixed traffic with inline stops.	LRT and streetcar will improve access on-corridor and between destinations.	Transit travel times are expected to be reduced with LRT, but not streetcar.	Transit on-time performance is expected to increase with LRT, but not streetcar.	Transit reliability for the population is expected to increase with LRT	LRT would likely require corridor widening.	Both provide additional travel modes in the study area.	Time needed to environmentally clear and design a wider rail corridor plus O&M facility may be tight. Service-proven technology.

6.3 AUTOMATED GUIDEWAY TRANSIT (AGT)

AGT is a computer-controlled fleet of driverless transit vehicles that operates on an elevated track. AGT was studied in the Emerging Disruptors Study 2024, and several modes were discussed. Because Monorail, PRT, and other AGT systems fall under this umbrella, this alternative will be advanced into Level 1 Screening to better define the mode and therefore its operations, alignment, footprint, and potential impacts. A mode most competitive with the other public transit alternatives will be selected to ensure comparable headways, station locations, and passenger capacity.

Monorail operates and requires a similar ROW footprint to light rail. PRT may not be a service-proven technology, as few existing PRT systems exist for public transit and passenger loads

may be much lower than other modes. AGT may be nimbler, and some manufacturers indicate the system can make sharper turns and climb steeper grades compared to other rail options. Additional data is needed to determine how to maintain this alternative, particularly during snow events, as well as to better understand part replacement and lead times, staff training for maintaining a system, and what options exist to meet federal Buy America standards for manufacturing. This alternative will also likely require 10-20 acres for an operations and maintenance facility, requiring a separate environmental study for the site. This Alternative requires more information to determine if it meets the MOEs and the Feasibility Need. It does meet the Purpose and Need and will be advancing into Level 1 screening.

Of Note: FTA has remained vague on determining AGT/monorail eligibility for federal funds. The Core-Capacity section of the Capitol Improvement Grants Program (CIG) states that "*Other fixed guideway modes such as gondola, inclined plane, cable car, monorail, etc. are seldom proposed to FTA for CIG funding. Therefore, FTA has not implemented Core Capacity eligibility calculations for these types of proposed projects. FTA intends to work with project sponsors of these modes on a case-by-case basis as necessary to determine Core Capacity eligibility.*"

Table 5. AGT Alternative MOE Results

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on the corridor? -OR- Does the alternative reduce travel delay on the corridor?	Does the alternative improve access to key destinations on the corridor between Quinns Junction and the OTTC?	Does the alternative reduce transit travel times on the corridor between Quinns Junction and the OTTC?	Does the Alternative increase the on-time performance of transit on the corridor between Quinns Junction and the OTTC?	Does the alternative provide reliable transit service on the corridor that serves the population?	Does the alternative provide high-frequency transit on the corridor between Quinns Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on the corridor between Quinns Junction and the OTTC?	**Feasibility:** Implementable before 2034? Service proven technology?
							
Mode, passenger load, speed, and logic termini must be determined before assessing.	AGT has the potential to improve access to destinations on-corridor and at either end.	Mode will need to be determined to assess transit travel times.	Mode will need to be determined to assess on-time performance.	Mode and station location capabilities will need to be determined to assess service for these populations.	Mode will need to be determined to assess service. Monorail may not limit widening.	Yes, this would offer a new mode of travel on the corridor.	Time required to clear and design this system plus operations and maintenance facility may be tight. Not many examples of service proven; certain systems in decline now.

6.4 RAIL TRAIL ALIGNMENT

A transit alignment (Figure 6) could be considered from Quinn's Junction to Bonanza Drive utilizing the existing Rail Trail alignment, which parallels SR-248 until Bonanza Drive, which integrates with the local paved trail network in town. This alternative has not been formally studied by Park City in the past.

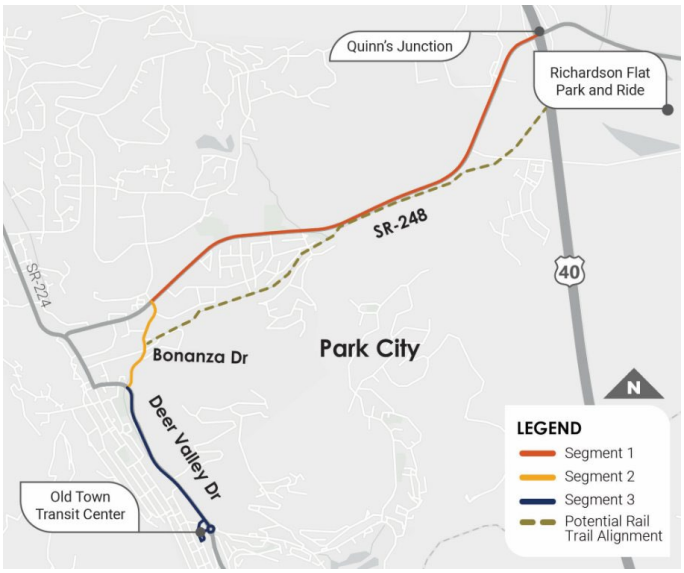


Figure 6. Potential Rail Trail Alignment

The Rail Trail Alignment Alternative would likely need to terminate and merge into mixed-flow traffic at Bonanza Drive or utilize a dedicated transit lane on Bonanza Drive or Deer Valley Drive. At the time of this report, if the existing public recreational Rail Trail was removed or compromised, federal funding could not be used for transit if there are feasible and prudent alternatives that would avoid impacting the property. In Level 1 Screening, a footprint will be determined for a transit solution that is context-sensitive to the adjacent neighborhood environment and will include a trail facility to avoid those potential impacts. Table 6 outlines how the Rail Trail Transit Alignment Alternative was evaluated during the Purpose and Need Screening. Although the alternative does not appear to meet many of the MOEs, because it has not been studied previously, there was a desire from policymakers to better understand the performance of a transit option on this corridor and therefore will advance into Level 1 Screening.

Table 6. Rail Trail Transit Alignment Alternative MOE Results

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on the corridor? -OR- Does the alternative reduce travel delay on the corridor?	Does the alternative improve access to key destinations on the corridor between Quinns Junction and the OTTC?	Does the alternative reduce transit travel times on the corridor between Quinns Junction and the OTTC?	Does the Alternative increase the on-time performance of transit on the corridor between Quinns Junction and the OTTC?	Does the alternative provide reliable transit service on the corridor that serves the population?	Does the alternative provide high-frequency transit on the corridor between Quinns Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on the corridor between Quinns Junction and the OTTC?	**Feasibility:** Implementable before 2034? Service proven technology?
							
May reduce SOVs depending on the mode; however, it may not without a dedicated connection to OTTC or other in-town destinations.	Assuming termination at Bonanza Drive or a merge into mixed flow traffic, unlikely to improve access to OTTC.	May reduce transit travel time for a portion of the corridor.	May increase on-time performance for a portion of the corridor.	It does not provide contiguous on-corridor access to the population.	There is no solution identified for the whole study area (Bonanza Drive and Deer Valley Drive).	This alignment does not provide on-corridor transit options.	Feasibility is mode-dependent, and additional study is required to determine if this is the case for this alternative.

6.5 FLEX LANES

Flex lanes are travel lanes that are dynamically reversible utilizing overhead signals to provide additional capacity in a certain direction to accommodate peak travel movements. For example, during the morning peak times, the flex lane would indicate through signage that it is an inbound travel lane.

Historically, flex lanes were studied on SR-248 only, between Wyatt Earp Way and Richardson Flat Road, and only for general-purpose traffic, as part of the Emerging Disruptors Study 2024. The initial assumption was that flex lanes in this small segment of the corridor would not provide operational efficiencies if used solely for transit buses. Additional opportunities for transit-specific flex lane systems will be developed for Level 1 Screening. More information is required to determine if this Alternative meets the MOEs. It does meet the Feasibility Need and the Purpose and Need, therefore it will be advancing into Level 1 screening.

Table 7 outlines how the flex lanes alternative was evaluated.

Table 7. Flex Lanes Alternative MOE Results

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on the corridor? -OR- Does the alternative reduce travel delay on the corridor?	Does the alternative improve access to key destinations on the corridor between Quinns Junction and the OTTC?	Does the alternative reduce transit travel times on the corridor between Quinns Junction and the OTTC?	Does the Alternative increase the on-time performance of transit on the corridor between Quinns Junction and the OTTC?	Does the alternative provide reliable transit service on the corridor that serves the population?	Does the alternative provide high-frequency transit on the corridor between Quinns Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on the corridor between Quinns Junction and the OTTC?	**Feasibility:** Implementable before 2034? Service proven technology?
							
More data and analysis are needed to determine the effectiveness of transit-only flex lanes on each corridor.	Flex lanes could offer improved access to key destinations. Further study is needed.	The alternative may reduce transit travel times by alleviating conflicts with traffic, particularly at pinch points.	More data and analysis are needed to determine if there are benefits to on-time performance.	Could provide reliable transit service depending on stop and station access.	Likely to be implementable with limited widening.	Further study is needed to determine the feasibility of transit-only flex lanes.	Would require minimal changes to the existing roadway network. Service-proven technology.

7 ALTERNATIVES NOT ADVANCING

During the screening, the following alternatives did not adequately meet the Purpose and Need to advance to Level 1 Screening.

7.1 GONDOLA

A gondola (an enclosed car suspended from a monocable and used for transporting passengers) would need to provide point-to-point access off-corridor from Quinn's Junction to OTTC or other major destinations and bypass existing road alignments in order to be feasible, according to the 2020 Gondola Study. Therefore, it would not serve the numerous key destinations between the two endpoints and does not meet project needs to service the corridor and the populations who need or benefit most from an on-corridor solution.

The Gondola Alternative was studied in the Gondola Feasibility Study 2020 and the Emerging Disruptors Study 2024. This alternative would not follow existing roadway alignments, and the cost, ROW acquisition, and visual/environmental impacts were identified as challenges. A gondola system could likely move up to 4,500 passengers per hour, per direction at a speed of 43 miles per hour. However, in the 2020 study, it was determined that a gondola would not be effective in reducing congestion. As noted under the AGT alternative, it is not clear this particular alternative would be eligible or receive federal funding to construct. Table 8 outlines how the gondola alternative was evaluated.

Table 8. Gondola Alternative MOE Results

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on the corridor? -OR- Does the alternative reduce travel delay on the corridor?	Does the alternative improve access to key destinations on the corridor between Quinns Junction and the OTTC?	Does the alternative reduce transit travel times on the corridor between Quinns Junction and the OTTC?	Does the Alternative increase the on-time performance of transit on the corridor between Quinns Junction and the OTTC?	Does the alternative provide reliable transit service on the corridor that serves the population?	Does the alternative provide high-frequency transit on the corridor between Quinns Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on the corridor between Quinns Junction and the OTTC?	**Feasibility:** Implementable before 2034? Service proven technology?
							
A preliminary study indicates it may not be effective in reducing congestion and therefore may not reduce travel delays on-corridor.	The nature of this system does not provide access to destinations on the corridor as it is a suspended point to point system.	Transit travel time would be competitive; this mode may not reduce travel times on-corridor as it may not adequately address congestion.	Gondola/aerial tramways offer consistently reliable transit service between endpoints.	This mode does not serve the population that lives on the corridor or has destinations on the corridor.	This mode does not provide high-frequency transit on the corridor, it is an off-corridor suspended alternative.	This alternative does not provide additional travel modes on the corridor.	Additional information is needed on manufacture and delivery times. ROW requirements and negotiations may take an extended amount of time and funding.

7.2 ONE-WAY LOOP

The One-way Loop Alternative would convert portions of the study area roadways into a counterclockwise traffic circulation loop and was not studied as an inherent transit solution, although the previous study mentioned it could be considered.

This alternative was studied in the Emerging Disruptors Study 2024. It could have transit potential if some lanes were converted to bus/transit-only lanes but was not formally analyzed. A one-way loop would require a second eastbound lane on SR-248 and may increase speeds and traffic volumes. Impacts on residential and business accesses were identified as potential challenges and this alternative was not broadly supported by stakeholders at the time of the Emerging Disruptors Study. Table 9 outlines how the One-Way Loop Alternative fared during the Purpose and Need Screening.

Table 9. One-Way Loop Alternative MOE Results

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on the corridor? -OR- Does the alternative reduce travel delay on the corridor?	Does the alternative improve access to key destinations on the corridor between Quinns Junction and the OTTC?	Does the alternative reduce transit travel times on the corridor between Quinns Junction and the OTTC?	Does the Alternative increase the on-time performance of transit on the corridor between Quinns Junction and the OTTC?	Does the alternative provide reliable transit service on the corridor that serves the population?	Does the alternative provide high-frequency transit on the corridor between Quinns Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on the corridor between Quinns Junction and the OTTC?	**Feasibility:** Implementable before 2034? Service proven technology?
							
This alternative did not define solutions for most of the corridor in the study area (east of Bonanza Drive).	Does not address access on the corridor between Quinn's Junction and the OTTC.	Does not provide solutions to improve transit travel times between Quinn's Junctions and the OTTC.	Does not provide solutions that would increase on-time performance for transit on the corridor. A one way loop creates inefficiencies through out of direction travel	This alternative does not provide reliable transit service on the corridor for the population.	Does not define a transit-forward solution that increases transit frequency between Quinn's Junctions and the OTTC.	Does not provide transportation choices between Quinn's Junction and OTTC.	Would require minimal changes to the existing roadway network. Service-proven technology.

7.3 EV TUNNEL

The previously considered EV tunnel would be a below-surface tunnel under SR-248 located between Quinn's Junction and Bonanza Drive. There were several alignments, loops, and connections considered for an EV tunnel network reviewed at a high level in the Emerging Disrupters Study 2024.

The underground tunnel could provide direct access to destinations around town but also removed patronage from business access. This is not considered a service-proven technology and concerns over managing contaminated soils and environmental impacts exist. In addition, this alternative does not increase or improve transit service along the corridor. EV tunnels, with one pilot example in Las Vegas, Nevada, utilize a boring machine to create a 12-foot diameter tunnel, which is not a width adequate to accommodate traditional transit or bus vehicles. Table 10 outlines how the EV Alternative was evaluated during the Purpose and Need Screening.

Table 10. EV Alternative MOE Results

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on the corridor? -OR- Does the alternative reduce travel delay on the corridor?	Does the alternative improve access to key destinations on the corridor between Quinns Junction and the OTTC?	Does the alternative reduce transit travel times on the corridor between Quinns Junction and the OTTC?	Does the Alternative increase the on-time performance of transit on the corridor between Quinns Junction and the OTTC?	Does the alternative provide reliable transit service on the corridor that serves the population?	Does the alternative provide high-frequency transit on the corridor between Quinns Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on the corridor between Quinns Junction and the OTTC?	**Feasibility:** Implementable before 2034? Service proven technology?
							
The size of the tunnel does not accommodate all types of vehicles and would provide relatively low capacity.	Does not provide access between the point-to-point trips.	Unlikely to reduce travel times due to vehicle size limitations and lack of on-corridor access.	Does not provide solutions to increase on-time performance for transit.	Does not provide a reliable transit service to the population.	Does not provide high-frequency transit solutions.	Does not provide additional travel modes for the general public to utilize.	Not a service-proven technology, particularly for transit.

7.4 TRADITIONAL WIDENING

This alternative considers widening the SR-248 corridor to allow for a consistent width and cross-section. Current congestion and travel delays are exacerbated due to the "chokepoint" section of SR-248 that currently exists from Richardson Flat Road to Wyatt Earp Way, forcing all vehicular traffic to merge down to one lane in each direction. This alternative was recommended as the Preferred Alternative in UDOT's 2019 Environmental Assessment as a way to manage travel demand on this corridor. The LPA was not widely supported at the time and does not currently align with the Purpose and Need proposed for this study.

A traditional widening project does not support transit needs along the corridor and does not address transit solutions on Bonanza Drive or Deer Valley Drive. Table 11 outlines how the Traditional Widening Alternative was evaluated during the Purpose and Need Screening.

Table 11. Traditional Widening Alternative MOE Results

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on the corridor? -OR- Does the alternative reduce travel delay on the corridor?	Does the alternative improve access to key destinations on the corridor between Quinns Junction and the OTTC?	Does the alternative reduce transit travel times on the corridor between Quinns Junction and the OTTC?	Does the Alternative increase the on-time performance of transit on the corridor between Quinns Junction and the OTTC?	Does the alternative provide reliable transit service on the corridor that serves the population?	Does the alternative provide high-frequency transit on the corridor between Quinns Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on the corridor between Quinns Junction and the OTTC?	**Feasibility:** Implementable before 2034? Service proven technology?
							
The alternative may alleviate congestion and delay, at least for some time.	If travel times are reduced, the alternative may improve access.	Does not improve transit travel times long term, particularly during peak times. Does not provide a transit-forward solution to address this MOE.	Does not provide a transit-forward solution that would address on-time performance if transit vehicles are in mixed-flow traffic.	Does not enhance reliable transit service for the population living.on-corridor.	Does not provide frequent transit service while limiting road widening.	Does not provide additional travel modes on the corridor.	Likely implementable before 2034. A project strategy for capacity building is needed.

7.5 COMMUTER RAIL

The Commuter Rail Transit (CRT) Alternative is defined as a dedicated commuter rail corridor in the study area.

This alternative could handle high passenger loads if origins and destinations see high travel demand. CRT operates in urbanized areas and is implemented in places of high density. The implementation of CRT is based on land use densities. Park City and eastern Summit County are not expected to meet those denser thresholds in the next 10 years.

Since CRT is primarily implemented to provide regional transit service at higher speeds (up to 79 mph), stations are typically spaced every 3 to 5 miles to serve longer distances and achieve higher speeds. With station spacing at 3 to 5 miles, and the study corridor the length of 4.8 miles, numerous key destinations along the corridor would not be served unless stations are spaced more frequently (and therefore CRT would then operate more similarly to LRT).

CRT would likely have substantial property impacts due to larger turning radii requirements. CRT systems are not designed to be utilized on grades steeper than 4%, with the ideal operating grade of 2.5%, making this mode likely unfeasible on Bonanza Drive and/or Deer Valley Drive.

CRT generally requires a wider footprint than BRT or LRT as it operates in exclusive transit guideways and to be operationally efficient would need two tracks, one for each direction, safety standards and buffer requirements generally have a wider footprint than LRT. CRT generally has much higher ROW impacts compared to both BRT and LRT due to the horizontal geometry restrictions of a CRT vehicle (e.g., larger turning radius). In addition, due to the higher CRT speeds, further safety measures such as train horns, crossing arms, or grade separation may be required further exacerbating the footprint requirements. Table 12 outlines how the Commuter Rail Alternative was evaluated during the Purpose and Need Screening.

Table 12. Commuter Rail Transit Alternative MOE Results

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on the corridor? -OR- Does the alternative reduce travel delay on the corridor?	Does the alternative improve access to key destinations on the corridor between Quinns Junction and the OTTC?	Does the alternative reduce transit travel times on the corridor between Quinns Junction and the OTTC?	Does the Alternative increase the on-time performance of transit on the corridor between Quinns Junction and the OTTC?	Does the alternative provide reliable transit service on the corridor that serves the population?	Does the alternative provide high-frequency transit on the corridor between Quinns Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on the corridor between Quinns Junction and the OTTC?	**Feasibility:** Implementable before 2034? Service proven technology?
							
The alternative may reduce travel delays on the corridor for a time. May not reduce congestion depending on termini (e.g., if it does not service OTTC it may see reduced ridership draw).	May not make turns onto Bonanza Drive and Deer Valley Drive without property impacts. May not make steep grades (>4%), service would terminate on SR-248, and it would not serve destinations at or near the OTTC.	Commuter rail may reduce transit travel time on SR-248 but is unlikely to be able to service Bonanza Drive and Deer Valley Drive.	Service, on segments it could operate on, would be reliable.	Station spacing for commuter rail is every ~3-5 miles; no stops on-corridor would be provided, therefore limiting service for population living on-corridor.	Corridor widening would likely be required to accommodate commuter rail service.	Commuter rail is unlikely to service the OTTC due to turning radii constraints and grade.	Time required to environmentally clear and design this system plus environmentally clear and design an operations and maintenance facility may not be feasible by 2034. Service-proven technology.

7.6 MINOR TRANSIT IMPROVEMENTS

This alternative includes making minor improvements to the existing service, which may include adding or moving bus stop locations, improving stop amenities, adding first/last mile connections to stops through sidewalk connections, increasing service frequencies, and improving transit signal priority.

It focuses on the service already provided without addressing roadway or transportation infrastructure at a higher level of investment. It would consist of minor improvements to the passenger experience. Table 13 outlines how the Minor Transit Improvements Alternative was evaluated during the Purpose and Need Screening.

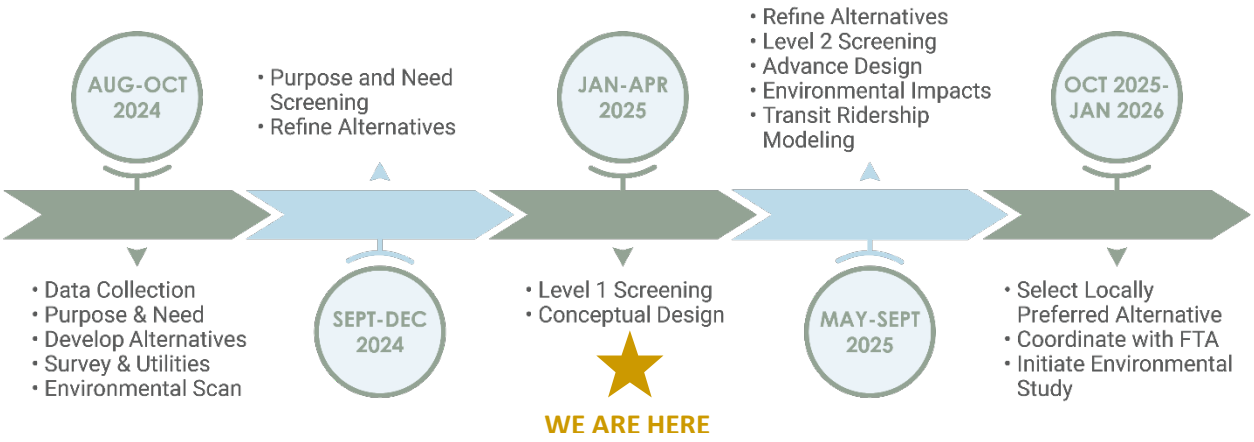
Table 13. Minor Transit Improvements Alternative MOE Results

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on the corridor? -OR- Does the alternative reduce travel delay on the corridor?	Does the alternative improve access to key destinations on the corridor between Quinns Junction and the OTTC?	Does the alternative reduce transit travel times on the corridor between Quinns Junction and the OTTC?	Does the Alternative increase the on-time performance of transit on the corridor between Quinns Junction and the OTTC?	Does the alternative provide reliable transit service on the corridor that serves the population?	Does the alternative provide high-frequency transit on the corridor between Quinns Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on the corridor between Quinns Junction and the OTTC?	**Feasibility:** Implementable before 2034? Service proven technology?
							
Minor improvements would not address congestion or travel delays.	Would likely provide the same existing access as today.	Minor improvements would not reduce transit travel times.	Minor improvements would not increase on-time performance.	Minor improvements would not enhance the reliability of transit services for the population living on-corridor.	Minor improvements would not provide high-frequency transit between Quinn's Junction and OTTC as buses would merge into mixed traffic.	Does not provide an additional travel mode; however, the alternative would not be competitive with single-occupancy vehicles.	Likely implementable before 2034. Service proven technology.

8 NEXT STEPS

Level 1 Screening will be initiated for the recommended alternatives. This is a planning-level analysis that includes minimal engineering. The Level 1 Screening Criteria are high-level, largely qualitative, and help illustrate key differences between the alternatives.

Figure 7. Re-create 248 Study Process and Key Milestones



Level 1 Screening will be followed by a further refined and detailed evaluation called a Level 2 screening process (as previously shown in Figure 3), consisting of fewer alternatives, and a greater level of design refinement, quantitative analysis, impacts assessment, and ridership forecasting.