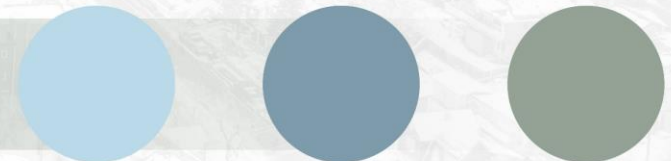




e•create **248**

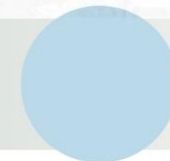
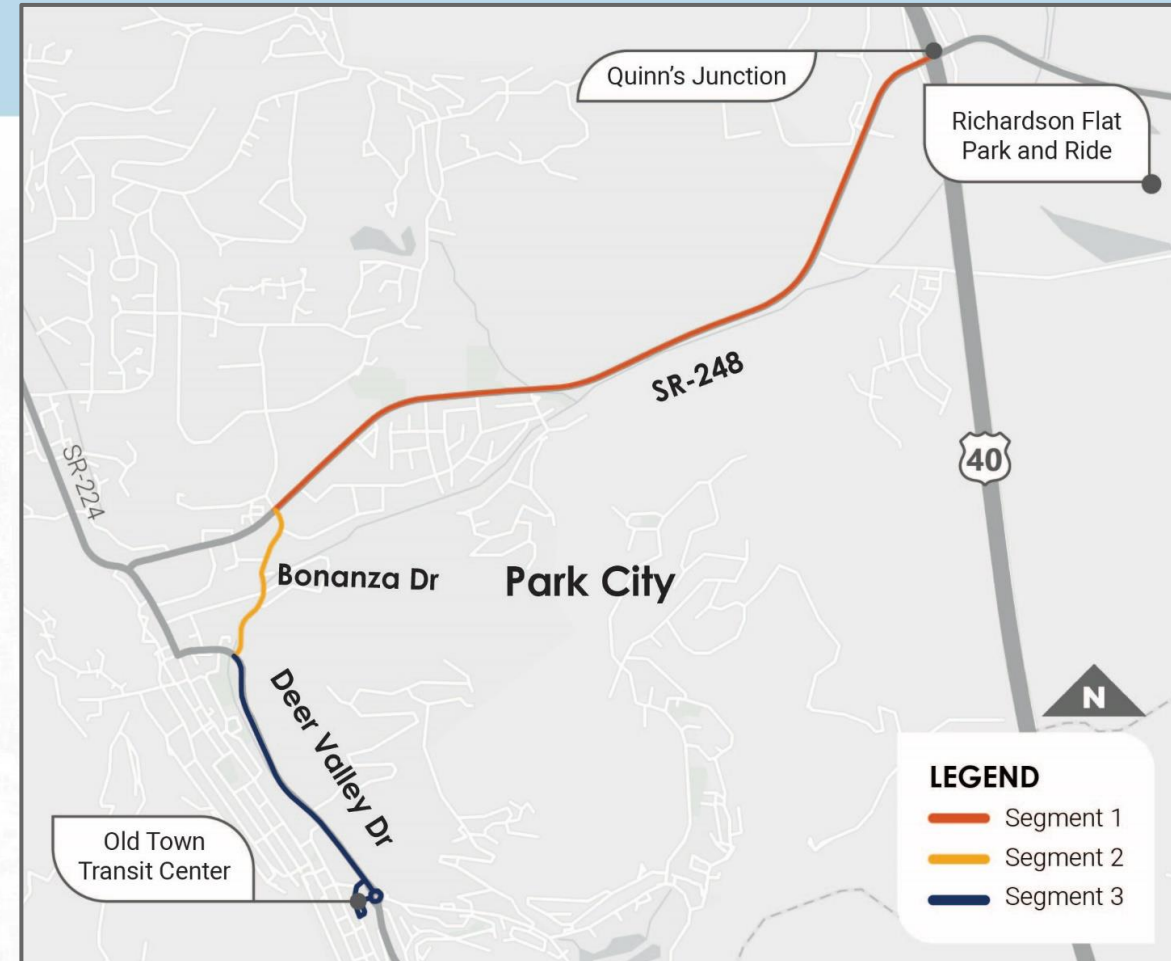
Council Work Session

December 6, 2024
Park City Council Chambers



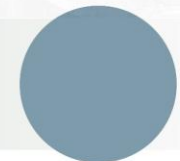
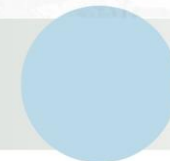
Why Are We Here?

- Address today's congestion and through 2050
- Council direction was a transit-focused study on the corridor
- Qualify for federal funding and leverage potential Olympic funding
- We are currently in the driver's seat



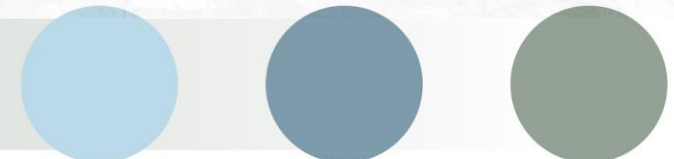
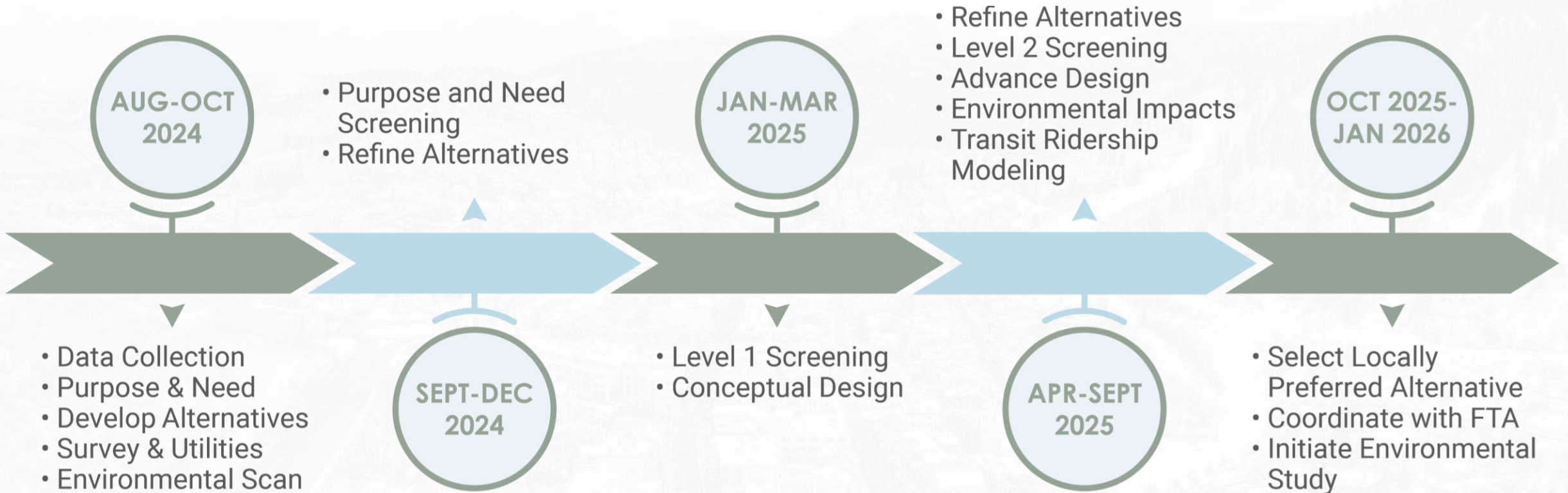
Today's Objectives

- Confirmation of Purpose and Need
- Confirmation of Range of Alternatives
- Identify Next Steps

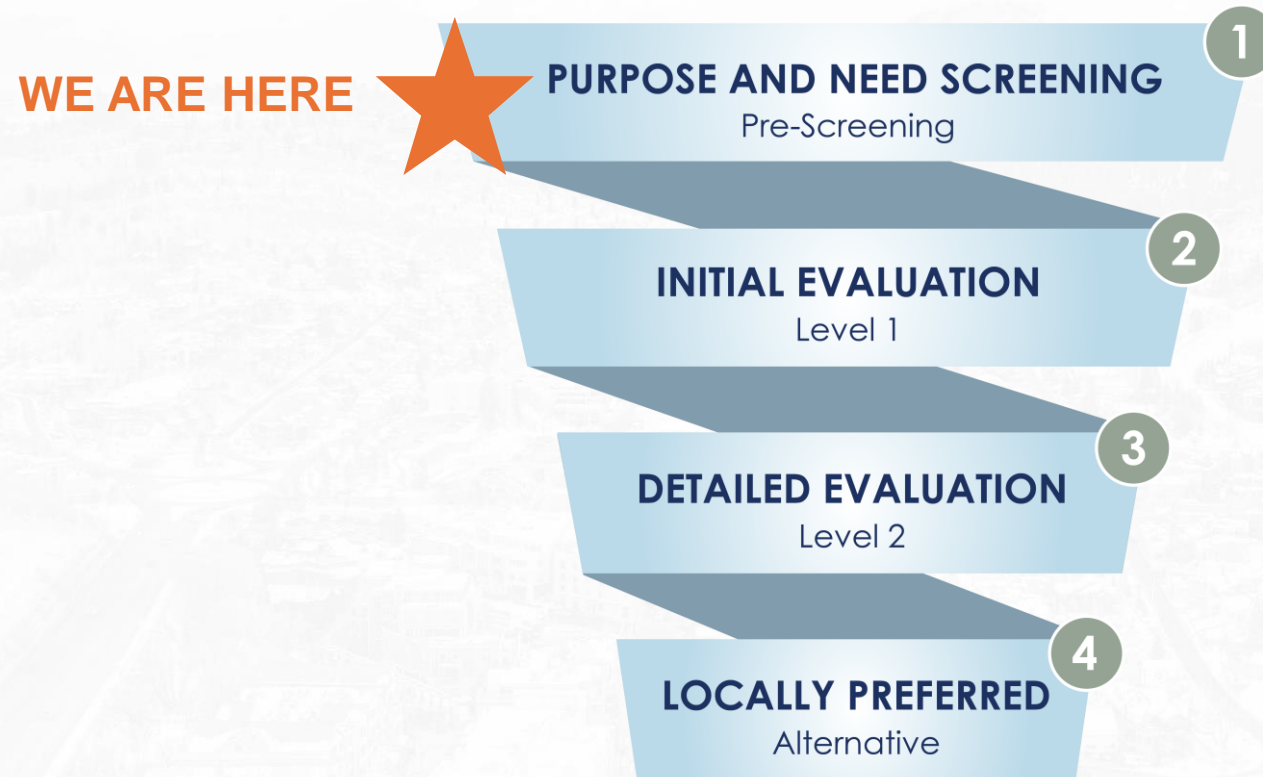


Study Overview

Defensible transit study to prepare for NEPA and ultimately recommend a project eligible for federal funding.



Process



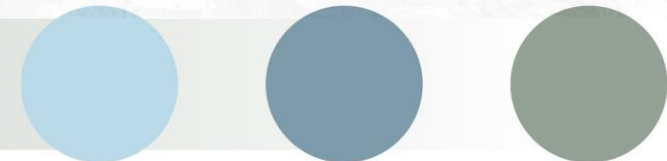
Existing and Future Conditions

Local and regional population and job growth is expected to increase.

- Summit County is expected to increase in population by 28%.
- Wasatch County is expected to see an increase of 80% in population.
- Employment will increase by 22% in Summit County and 33% in Wasatch County.
- Trips utilizing the study area corridor originating in eastern Summit and Wasatch Counties are projected to increase by 43% in 2050.
 - From 800,000 trips annually in 2024 to 1,145,000 trips.

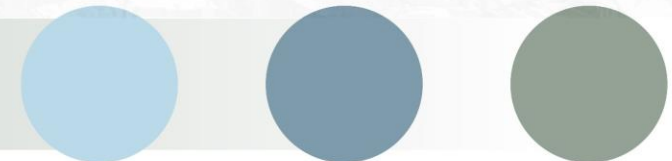
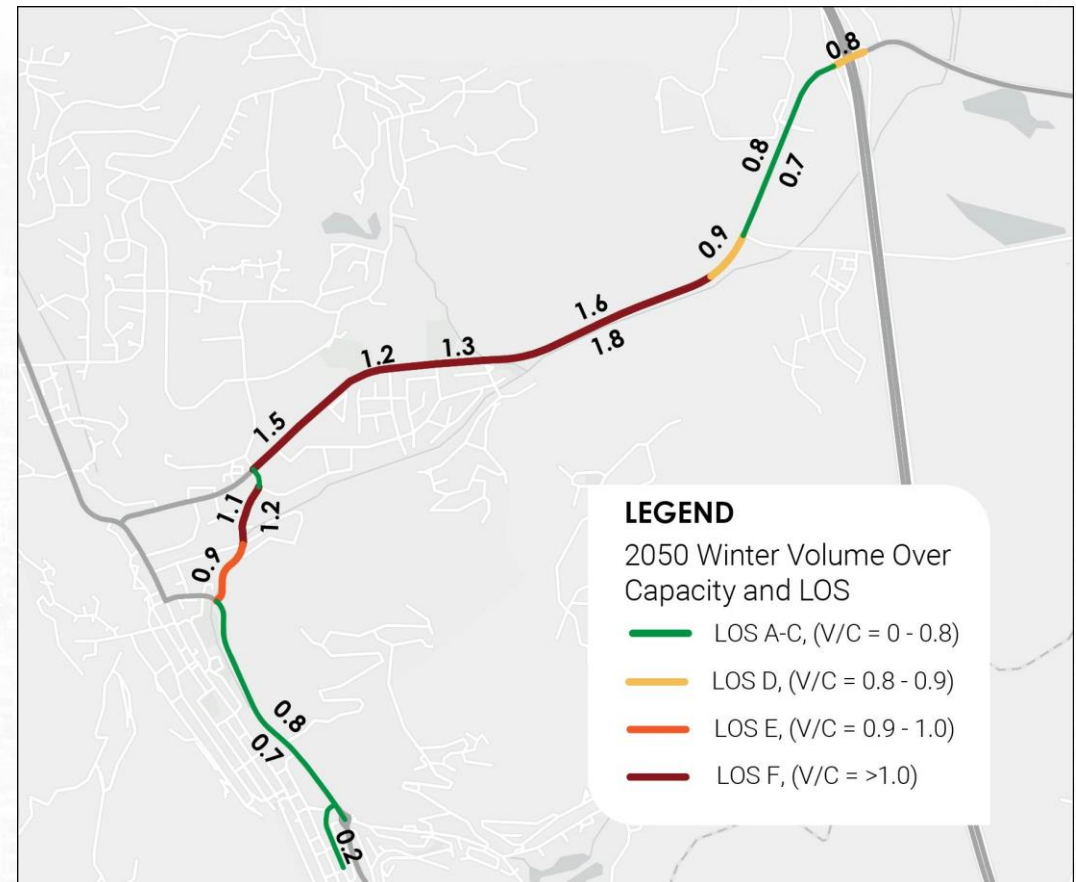
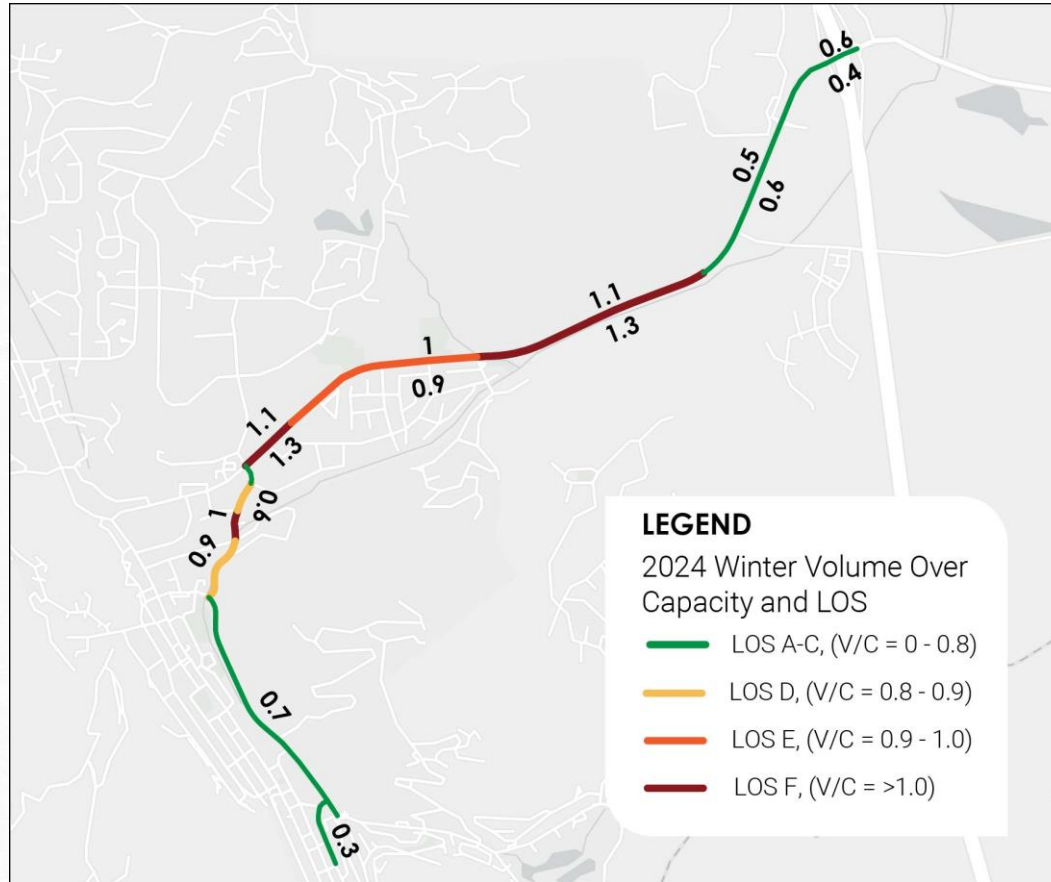
CATEGORY	2024	2050	PERCENT CHANGE
Study Area (TAZs within ½ mile of the corridor)			
Population	6,981	7,973	14.21%
Household	3,592	4,696	30.73%
Employment	17,574	21,736	23.68%
Summit County			
Population	44,003	56,361	28.08%
Household	17,133	25,379	48.13%
Employment	41,466	50,567	21.95%
Wasatch County			
Population	38,291	68,789	80%
Household	12,777	26,861	110%
Employment	16,632	22,047	33%

Current and Forecasted Numbers for Population, Household, and Employment
 Source: WFRC-MAG Travel Demand Model



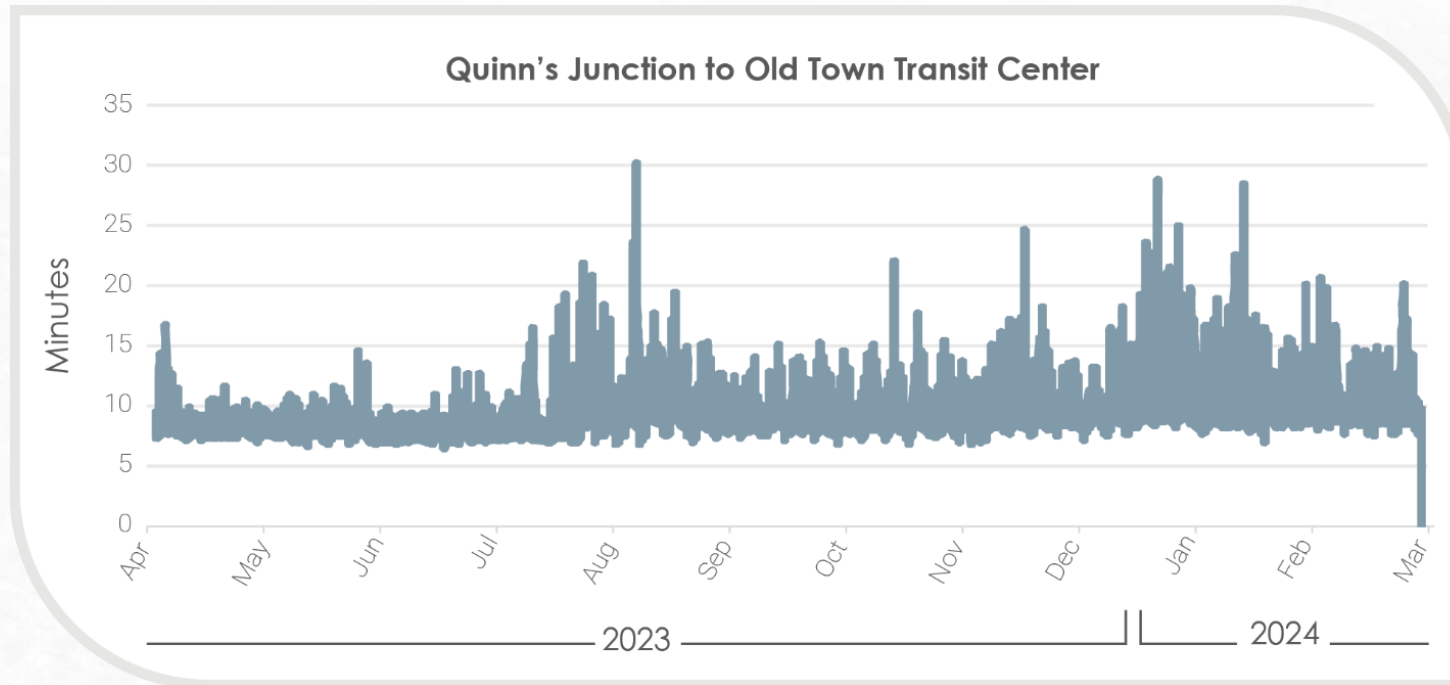
Existing and Future Conditions

Current and future corridor capacity exacerbates congestion and travel delay.

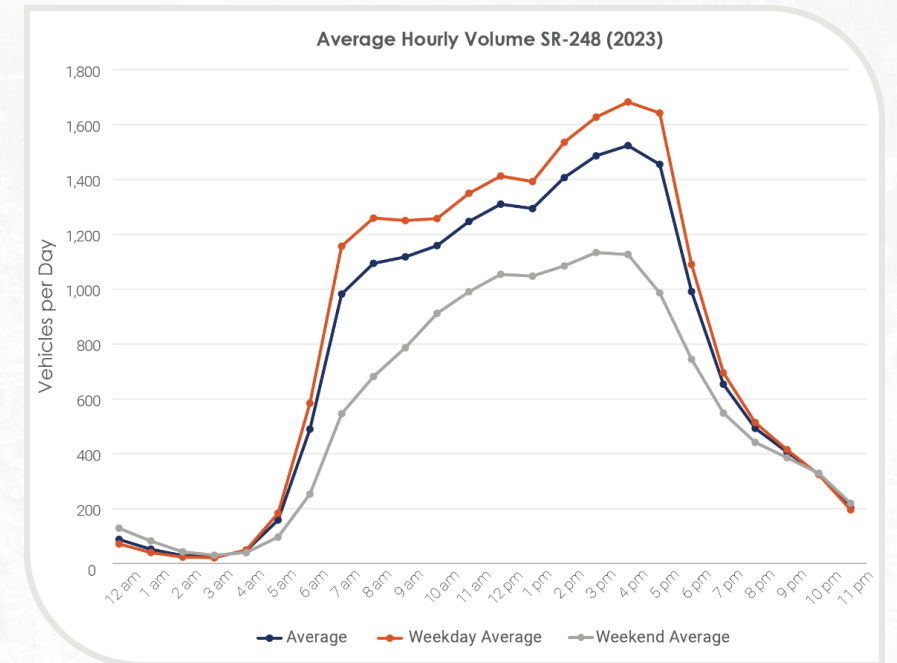


Existing and Future Conditions

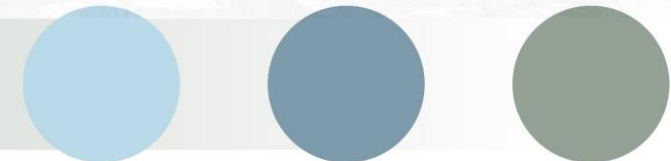
Current transit service can be unreliable due to peak time traffic volumes, and travel times.



Average Travel Times from Quinn's Junction to OTTC
Source: Iteris/ClearGuide



Average Hourly Traffic Volumes on SR-248 in 2023
Source: UDOT AADT



Existing and Future Conditions

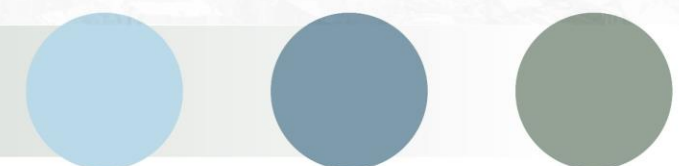
Low income and minority populations live on the corridor and need access to reliable transportation choices.

LOCATION	TOTAL POPULATION	MINORITY POPULATION (RACE)	PERCENT MINORITY (RACE)
County			
Summit County	42,357	6,430	15.2%
Census Tract 9643.08			
Block Group 2	837	179	21.4%
Census Tract 9644.02			
Block Group 1	667	99	14.8%
Block Group 2	1,222	566	46.3%
Block Group 3	528	78	14.8%
Block Group 4	1,713	717	41.9%

Minority Populations by Race in the Study Area Compared to County Average
 Source: 2020 US Census

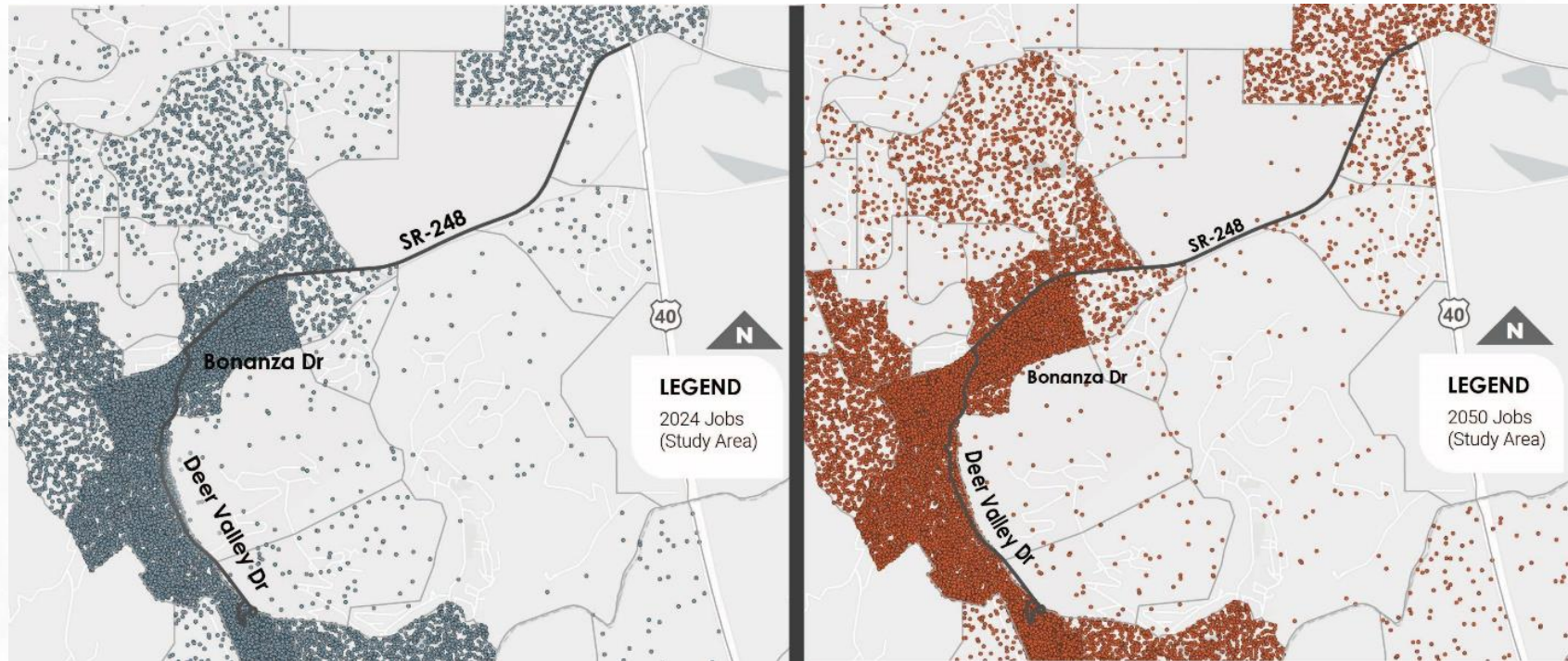
LOCATION	TOTAL POPULATION	MINORITY POPULATION (ETHNICITY)	PERCENT MINORITY (ETHNICITY)
County			
Summit County	42,357	4,737	11.2%
Census Tract 9643.08			
Block Group 2	837	159	19.0%
Census Tract 9644.02			
Block Group 1	667	59	8.8%
Block Group 2	1,222	561	45.9%
Block Group 3	528	39	7.4%
Block Group 4	1,713	639	37.3%

Minority Populations by Ethnicity in the Study Area Compared to County Average
 Source: 2020 US Census



Existing and Future Conditions

People need access to key destinations, like employment and housing, ON corridor.



Job density on-corridor, 2024 and 2050.

Source: Summit-Wasatch Travel Demand Model v2.1 May 2024



Existing and Future Conditions

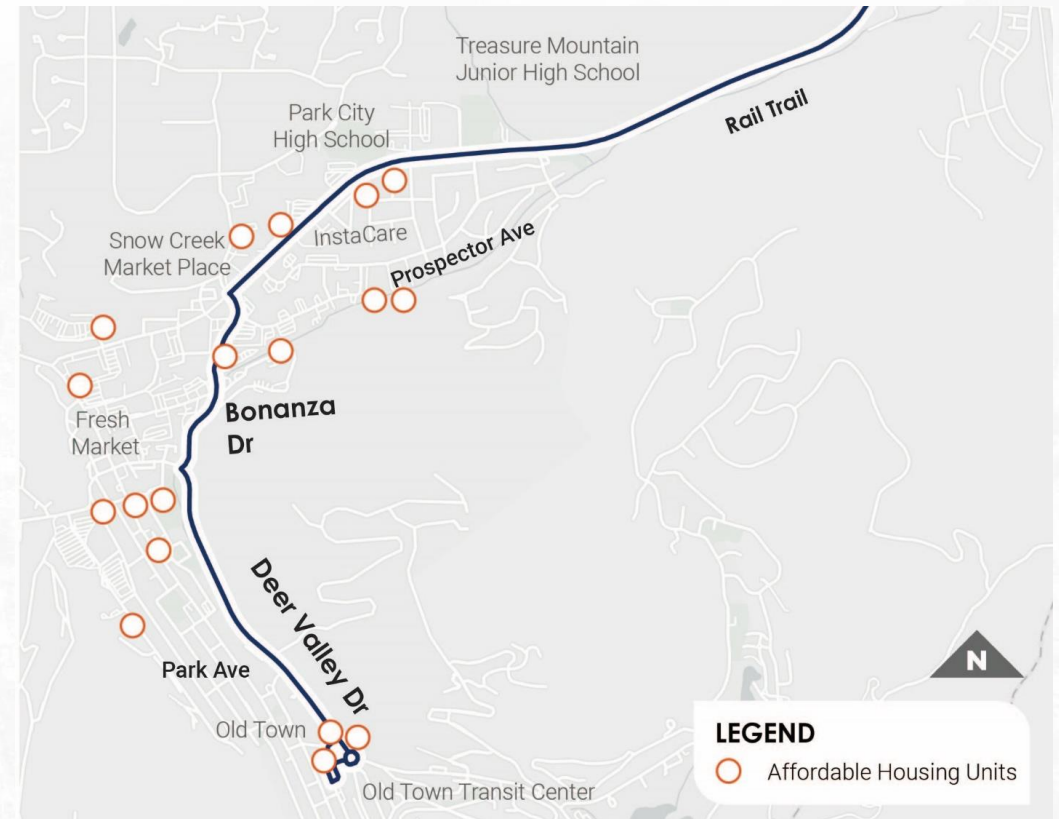
People need access to key destinations, like employment and housing, ON corridor.



NAME	BOARDINGS	ALIGHTINGS	TOTAL RIDERS
Old Town Transit Center	447,743	525,454	973,197
Ironhorse Inbound	23,664	7,406	31,070
Ironhorse Outbound	7,039	23,627	30,666
Munchkin Road	9,151	4,915	14,066
Park City Plaza	386	934	1,320
Homestake*	4,529	5,794	10,323
Park City Cemetery*	980	841	1,821
Kimball Arts Center*	1,225	2,641	3,866
Kearns and Bonanza*	751	7,800	8,551
Parkside Apartments	25,907	7,975	33,882
Park City High School Inbound	96,611	34,475	131,086
Park City High School Outbound	5,189	58,419	63,608
Learning Center	14,755	3,625	18,380
Treasure Mountain	352	9,608	9,960
Park City Heights	6,140	6,585	12,725
Richardson Flat Park and Ride	52,687	51,745	104,432

*On-corridor, within walking distance of the study area portion of SR-248
 Total bus stop ridership – January 1, 2023, to October 9, 2024

Source: Park City Transit APC data



Affordable housing unit locations

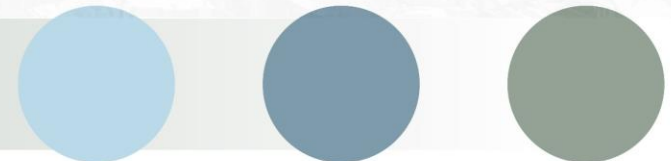
Source: Park City SRTD



Project Need Statements

Developed after thorough existing & future conditions analysis.

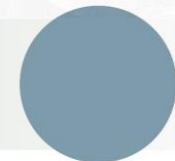
- Local and regional population and job growth is substantial and will continue to increase travel demand on SR-248.
- Populations need access to key destinations on-corridor between Quinn's Junction and the OTTC for employment, education, and services.
- Current (2024) transit travel times are often unreliable due to existing corridor congestion, which is exacerbated during peak times and will be a condition that continues into the future (2050).
- Shoulder-running buses transitioning into mixed-flow traffic limits the ability to provide contiguous transit service and decreases transit reliability.



Project Need Statements

Developed after thorough existing & future conditions analysis.

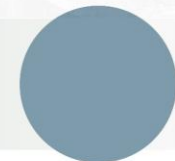
- Low-income and minority populations living on and near the corridor and commuting into the area for work, need reliable transit service.
- Local and regional plans indicate a need for multimodal corridor solutions to support efforts that promote satellite parking strategies that are well-served by a high-frequency transit backbone network.
- Parking is limited in town and highly utilized; additional travel modes are needed to access Park City.



Project Purpose Statements

Based on the data that supports the project needs statements.

- 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 by improving equitable 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, sustainability, and equity, and avoid excessive road widening.
- Enhance mobility along the corridor through transportation choices.



Measures of Effectiveness

Developed to aid in screening against Purpose and Need statements.

- Does the alternative reduce congestion, OR, does it reduce travel delay?
- Does the alternative provide access to key destinations on 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 low-income and minority 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?

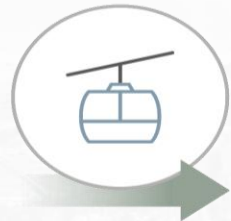
FEASIBILITY REQUIREMENT:

- Is the alternative feasible to implement by 2034; is the alternative service-proven technology?



Range of Alternatives

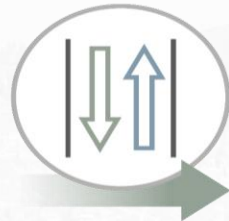
Based on past plans, studies, and local transit interests.



Gondola

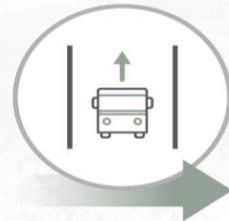


One-way Loop



Reversible Flex Lanes

on SR-248 (and possibly Bonanza, Deer Valley Drive)



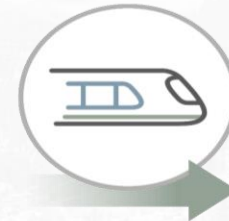
Dedicated Bus Lanes

center and Side running



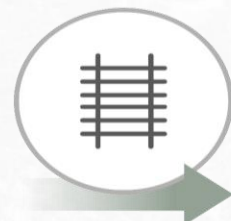
Light Rail

dedicated guideway
Streetcar
mixed with traffic



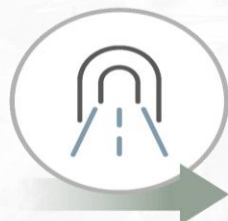
Automated Guideway Transit

personal rapid transit



Rail Trail Transit Alignment

various modes



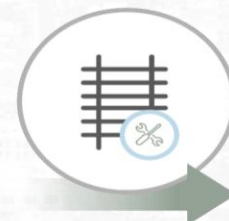
EV Tunnel



Widen to 4-5 GP Lanes



Commuter Rail



Minor Improvements to Existing System



No Action Alternative

Goal

Follow a transit study process that is fundable, feasible and reasonable to FTA.



Initial Purpose and Need Screening

Alternative	MEASURES OF EFFECTIVENESS							FEAS.
	Does the alternative reduce congestion or reduce travel delay?	Does the alternative provide access to key destinations on-corridor?	Does the alternative reduce transit travel times?	Does the alternative increase on-time performance of transit?	Does the alternative provide reliable transit service on-corridor for low-income and minorities?	Does the alternative provide high-frequency transit on-corridor with limited road widening?	Does the alternative provide additional travel modes on-corridor in the study area?	
No Action Alternative	Not Screened							
Gondola	Yes	No	Yes	Yes	No	No	No	Yes
One Way Traffic Loop	Yes	No	No	No	No	No	No	Yes
Reversible Flex Lanes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dedicated Bus Lanes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Light Rail	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Automated Guideway Transit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rail Trail Transit Alignment	Yes	No	Yes	Yes	No	No	No	Yes
Electric Vehicle Tunnel	No	No	No	No	No	No	No	No
Traditional Widening	Yes	Yes	No	No	No	No	No	Yes
Commuter Rail	Yes	No	Yes	Yes	No	No	No	Yes
Minor Transit Improvements	No	Yes	No	No	No	No	Yes	Yes

Yes ● Maybe ● No ●



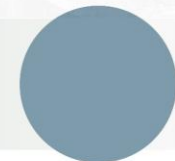
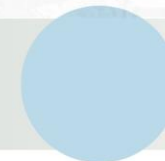
Gondola

Point-to-point access from Quinn's Junction to OTTC or other major destinations, bypassing existing road alignments to be feasible.

- Studied in the Gondola Feasibility Study (2020) and the Emerging Disruptors Study (2024).
- **Trip types:** local and regional
- **Operating environment:** dedicated right-of-way
- **Typical stop spacing:** Point A to Point B only
- **Typical peak frequency:** TBD
- **Ridership Capacity:** ~4,500 passengers per hour, per direction.
- **Compatibility with existing system:** No
- **Other considerations:**
 - Monocable would not follow existing roadway alignments or serve the numerous destinations between study limits.
 - Cost, ROW, and visual/environmental impacts are challenges.
 - It may not be effective in reducing congestion on SR-248.
 - Unlikely to qualify for federal funds.











Monocable gondola, Doppelmayr



Gondola

MEASURES OF EFFECTIVENESS

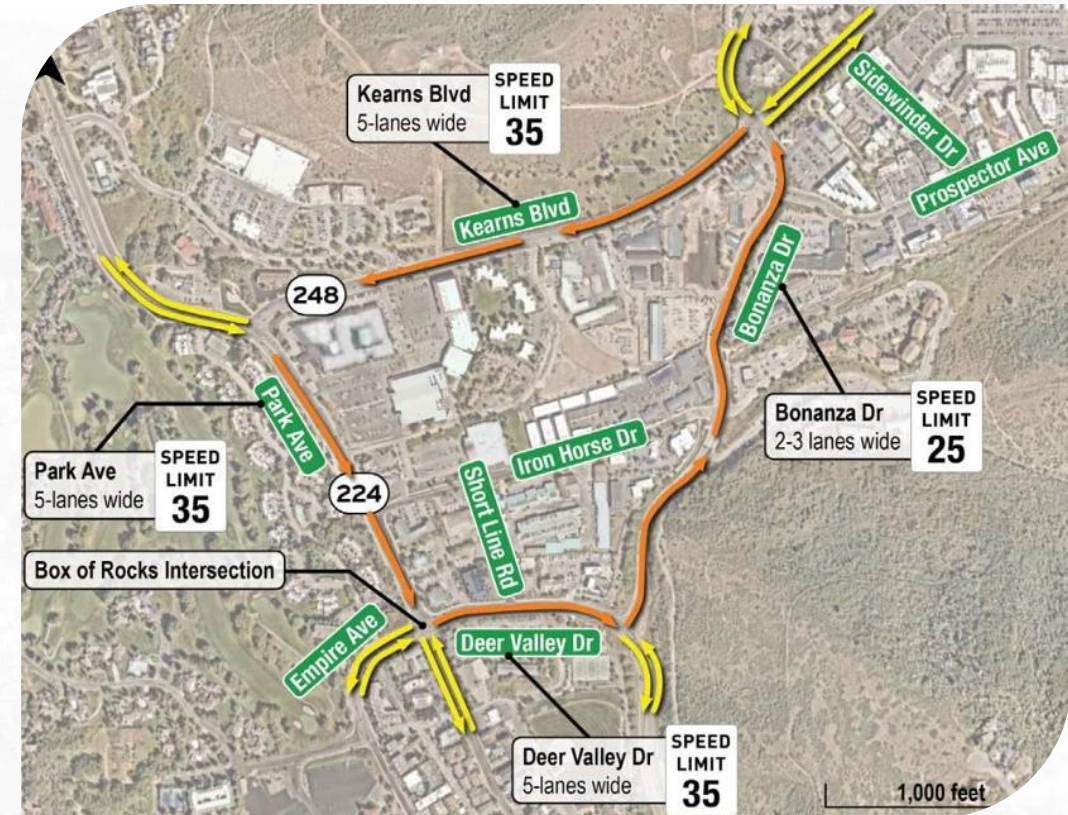
Does the alternative reduce congestion on SR-248? - OR - Does the alternative reduce travel delay on SR-248?	Does the alternative improve access to key destinations on SR-248 between Quinn's Junction and the OTTC?	Does the alternative reduce transit travel times on SR-248 between Quinn's Junction and the OTTC?	Does the alternative increase on-time performance of transit on SR-248 between Quinn's Junction and the OTTC?	Does the alternative provide reliable transit service on SR-248 that serves low-income and minority populations?	Does the alternative provide high-frequency transit on SR-248 between Quinn's Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on SR-248 between Quinn's Junction and the OTTC?	Feasibility: Implementable before 2034? Service proven technology?
 <ul style="list-style-type: none"> Preliminary study indicates it may not be effective in reducing congestion and therefore may not reduce travel delay on corridor. 	 <ul style="list-style-type: none"> The off-corridor alignment recommendation does not provide access to destinations on SR-248. 	 <ul style="list-style-type: none"> Transit travel time would be competitive, this mode may not reduce travel times on-corridor as it may not adequately address congestion. 	 <ul style="list-style-type: none"> Gondola/aerial tramways offer consistently reliable transit service. 	 <ul style="list-style-type: none"> This mode does not serve low-income or minority populations that live on the corridor or have destinations on the corridor. 	 <ul style="list-style-type: none"> This mode does not provide high-frequency transit on SR-248. 	 <ul style="list-style-type: none"> This alternative does not provide additional travel modes on SR-248. 	 <ul style="list-style-type: none"> Additional information needed on manufacture and delivery times. ROW requirements and negotiations may take time.



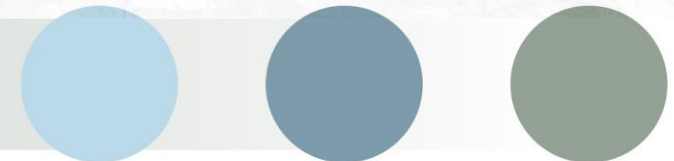
One-Way Traffic Loop

Conversion of portions of study area streets into a counterclockwise traffic circulation loop.

- Studied in the Emerging Disruptors Study (2024).
- **Trip types:** local and regional
- **Operating environment:** existing roadways
- **Typical stop spacing:** N/A
- **Typical peak frequency:** N/A
- **Ridership Capacity:** N/A
- **Compatibility with existing system:** No
- **Other considerations:**
 - Would require a second eastbound lane on SR-248.
 - Concerns expressed over impacts to resident and business access.
 - May increase speeds and traffic volumes.
 - Potential for transit but not studied.



One way loop, Emerging Disruptors Study (2024)



One-Way Traffic Loop

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on SR-248? - OR - Does the alternative reduce travel delay on SR-248?	Does the alternative improve access to key destinations on SR-248 between Quinn's Junction and the OTTC?	Does the alternative reduce transit travel times on SR-248 between Quinn's Junction and the OTTC?	Does the alternative increase on-time performance of transit on SR-248 between Quinn's Junction and the OTTC?	Does the alternative provide reliable transit service on SR-248 that serves low-income and minority populations?	Does the alternative provide high-frequency transit on SR-248 between Quinn's Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on SR-248 between Quinn's Junction and the OTTC?	Feasibility: Implementable before 2034? Service proven technology?
<ul style="list-style-type: none"> This alternative did not define solutions for most of SR-248 in the study area (east of Bonanza Drive). 	<ul style="list-style-type: none"> Does not address access on SR-248 between these two destinations. 	<ul style="list-style-type: none"> Does not provide solutions to improve transit travel times between Quinn's Junctions and OTTC. 	<ul style="list-style-type: none"> Does not provide solutions that would increase on-time performance for transit on SR-248. 	<ul style="list-style-type: none"> This alternative does not provide reliable transit service on SR-248 for low-income and minority populations. 	<ul style="list-style-type: none"> Does not define a transit-forward solution that increases transit frequency between Quinn's Junction and SR-248. 	<ul style="list-style-type: none"> Does not provide transportation choices between Quinn's Junction and OTTC. 	<ul style="list-style-type: none"> Would require minimal changes to the existing roadway network. Service proven technology.



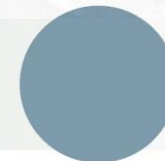
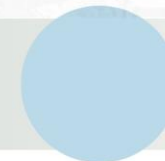
Flex Lanes

Four to five general purpose lanes in the “chokepoint” section of SR-248 from Richardson Flat Road to Wyatt Earp Way.









- Only studied SR-248 between Wyatt Earp Way and Richardson Flat Road, additional corridors will need to be considered for opportunities.
- **Trip types:** local and regional
- **Operating environment:** N/A
- **Typical stop spacing:** N/A
- **Typical peak frequency:** N/A
- **Ridership Capacity:** N/A
- **Compatibility with existing system:** N/A
- **Other considerations:**
 - Additional study is required to determine opportunities and constraints on the transportation system.
 - This is not by itself, a transit solution.
 - Could incentivize single-occupancy vehicle use.
 - Stakeholders determined it may be confusing for visitors.



5400 South flex lanes, West Valley City, UT



Flex Lanes

MEASURES OF EFFECTIVENESS							
<p>Does the alternative reduce congestion on SR-248? - OR - Does the alternative reduce travel delay on SR-248?</p>	<p>Does the alternative improve access to key destinations on SR-248 between Quinn's Junction and the OTTC?</p>	<p>Does the alternative reduce transit travel times on SR-248 between Quinn's Junction and the OTTC?</p>	<p>Does the alternative increase on-time performance of transit on SR-248 between Quinn's Junction and the OTTC?</p>	<p>Does the alternative provide reliable transit service on SR-248 that serves low-income and minority populations?</p>	<p>Does the alternative provide high-frequency transit on SR-248 between Quinn's Junction and the OTTC that limits road widening?</p>	<p>Does the alternative provide additional travel modes on SR-248 between Quinn's Junction and the OTTC?</p>	<p>Feasibility: Implementable before 2034? Service proven technology?</p>
 <ul style="list-style-type: none"> • More data and analysis needed to determine effectiveness of transit-only flex lanes on each corridor. 	 <ul style="list-style-type: none"> • Flex lanes could offer improved access to key destinations, further study needed. 	 <ul style="list-style-type: none"> • The alternative may reduce transit travel times by alleviating conflicts with traffic particularly at pinch points. 	 <ul style="list-style-type: none"> • More data and analysis needed to determine if there are benefits to on-time performance. 	 <ul style="list-style-type: none"> • Could provide reliable transit service, depending on stop and station access. 	 <ul style="list-style-type: none"> • Likely to be implementable with limited widening. 	 <ul style="list-style-type: none"> • Further study needed to determine feasibility of transit-only flex lanes to confirm. 	 <ul style="list-style-type: none"> • Would require minimal changes to the existing roadway network. • Service proven technology.



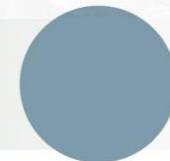
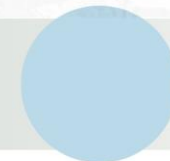
Dedicated Bus Lane

High-frequency bus lanes (likely BRT) that would run on the side or center of SR-248 from Quinn's Junction to the OTTC.

- **Trip types:** local and regional
- **Operating environment:** dedicated right-of-way or mixed with traffic
- **Typical stop spacing:** ½ mile to 1 mile
- **Typical peak frequency:** 5-10 minutes
- **Ridership Capacity:** 60-90 per bus
- **Compatibility with existing system:** yes
- **Other considerations:**
 - Low emissions transit option.
 - Recommended as a Phase 1 project in Park City Forward.
 - Stations would serve the key destinations on the corridor.

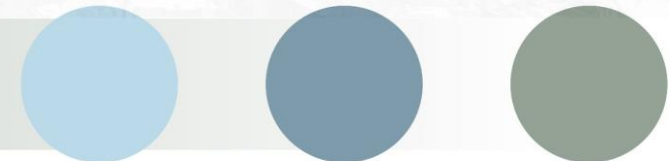


Dedicated bus lane rendering, King County Metro, Seattle, WA



Dedicated Bus Lane

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on SR-248? - OR - Does the alternative reduce travel delay on SR-248?	Does the alternative improve access to key destinations on SR-248 between Quinn's Junction and the OTTC?	Does the alternative reduce transit travel times on SR-248 between Quinn's Junction and the OTTC?	Does the alternative increase on-time performance of transit on SR-248 between Quinn's Junction and the OTTC?	Does the alternative provide reliable transit service on SR-248 that serves low-income and minority populations?	Does the alternative provide high-frequency transit on SR-248 between Quinn's Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on SR-248 between Quinn's Junction and the OTTC?	Feasibility: Implementable before 2034? Service proven technology?
<ul style="list-style-type: none"> • May reduce congestion at certain times. • Will reduce travel delay for transit riders. 	<ul style="list-style-type: none"> • Dedicated bus will improve access on-corridor, and between destinations. 	<ul style="list-style-type: none"> • Transit travel times expected to be reduced with dedicated bus lanes. 	<ul style="list-style-type: none"> • Transit on-time performance expected to increase with dedicated bus lanes. 	<ul style="list-style-type: none"> • Transit reliability for low-income and minority populations expected to increase with dedicated bus lanes. 	<ul style="list-style-type: none"> • Provides a high-frequency transit solution that could be implemented with limited corridor widening. 	<ul style="list-style-type: none"> • Dedicated bus provides additional travel modes in the study area. 	<ul style="list-style-type: none"> • Implementable with reasonable changes to the corridors and transit infrastructure/vehicles. • Service-proven.



Light Rail (LTR)

Electrified rail service, in a dedicated guideway, or – streetcar in mixed traffic.

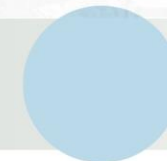
- Studied in the Emerging Disruptors Study (2024), alignments/corridors undetermined.
- **Trip types:** local and regional
- **Operating environment:** dedicated right-of-way for LRT, in-lane with vehicles Streetcar
- **Typical stop spacing:** 1 mile
- **Typical peak frequency:** 15 minutes
- **Ridership Capacity:** 120-180 per car
- **Compatibility with existing system:** No
- **Other considerations:**
 - Requires 10-20 acres at end of line for O&M facility.
 - Steep grades may restrict the route.
 - Turning radii footprints may have property impacts.
 - Streetcar runs in-lane with traffic and would be subject to the same congestion and delay as SOVs.
 - Low emissions transit option.



Streetcar service in Portland, OR











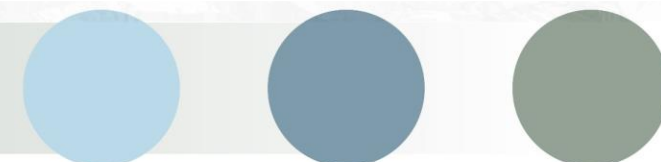
Light rail service in Charlotte, NC



Light Rail

MEASURES OF EFFECTIVENESS

Does the alternative reduce congestion on SR-248? - OR - Does the alternative reduce travel delay on SR-248?	Does the alternative improve access to key destinations on SR-248 between Quinn's Junction and the OTTC?	Does the alternative reduce transit travel times on SR-248 between Quinn's Junction and the OTTC?	Does the alternative increase on-time performance of transit on SR-248 between Quinn's Junction and the OTTC?	Does the alternative provide reliable transit service on SR-248 that serves low-income and minority populations?	Does the alternative provide high-frequency transit on SR-248 between Quinn's Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on SR-248 between Quinn's Junction and the OTTC?	Feasibility: Implementable before 2034? Service proven technology?
 <ul style="list-style-type: none"> LTR may reduce congestion and travel delay. Streetcar could exacerbate congestion and travel delay, operating in mixed traffic with inline stops. 	 <ul style="list-style-type: none"> LTR and streetcar will improve access on-corridor and between destinations. 	 <ul style="list-style-type: none"> Transit travel times expected to be reduced with LTR, but not streetcar. 	 <ul style="list-style-type: none"> Transit on-time performance expected to increase with LTR, but not streetcar. 	 <ul style="list-style-type: none"> Transit reliability for low-income and minority populations expected to increase with LTR. 	 <ul style="list-style-type: none"> LTR would likely require corridor widening, particularly at station locations. 	 <ul style="list-style-type: none"> Both provide additional travel modes in the study area. 	 <ul style="list-style-type: none"> Time needed to environmentally clear and design a wider rail corridor plus O&M facility may be tight. Service proven technology.



Automated Guideway Transit (AGT)

Mode currently undefined, could be monorail, personal rapid transit, or other.

Re create 248

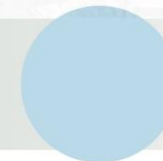
- Studied briefly in the Emerging Disruptors Study (2024)
- **Trip types:** local and regional
- **Operating environment:** dedicated right-of-way
- **Typical stop spacing:** TBD
- **Typical peak frequency:** TBD
- **Ridership Capacity:** ~8-80 passengers per car
- **Compatibility with existing system:** No
- **Other considerations:**
 - Monorail operates and requires similar ROW to light rail.
 - Personal rapid transit is not a service-proven technology for public transit.
 - AGT may be nimbler to make sharp turns and steep grades.
 - Additional data needed to determine how to maintain, particularly during snow events.
 - Likely requires 10-20 acres for O&M facility.
 - Unlikely to qualify for FTA funds.



Disneyland Monorail, Anaheim, CA











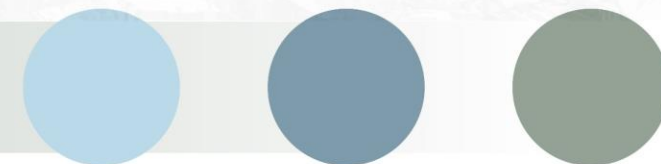
PRT rendering, Richard Garriott, Austin, TX



Automated Guideway Transit

MEASURES OF EFFECTIVENESS

Does the alternative reduce congestion on SR-248? - OR - Does the alternative reduce travel delay on SR-248?	Does the alternative improve access to key destinations on SR-248 between Quinn's Junction and the OTTC?	Does the alternative reduce transit travel times on SR-248 between Quinn's Junction and the OTTC?	Does the alternative increase on-time performance of transit on SR-248 between Quinn's Junction and the OTTC?	Does the alternative provide reliable transit service on SR-248 that serves low-income and minority populations?	Does the alternative provide high-frequency transit on SR-248 between Quinn's Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on SR-248 between Quinn's Junction and the OTTC?	Feasibility: Implementable before 2034? Service proven technology?
 <ul style="list-style-type: none"> Mode, passenger load, speed, and logic termini must be determined before assessing. 	 <ul style="list-style-type: none"> AGT has the potential to improve access to destinations on-corridor and at either end. 	 <ul style="list-style-type: none"> Mode will need to be determined to assess transit travel times. 	 <ul style="list-style-type: none"> Mode will need to be determined to assess on-time performance. 	 <ul style="list-style-type: none"> Mode and station location capabilities will need to be determined to assess service for these populations. 	 <ul style="list-style-type: none"> Mode will need to be determined to assess service for these populations. Monorail, likely does not limit road widening. 	 <ul style="list-style-type: none"> Yes, this would offer a new mode of travel on the corridor. 	 <ul style="list-style-type: none"> Time required to clear and design this system plus O&M facility may be tight. Not many examples of service proven, certain systems in decline now.



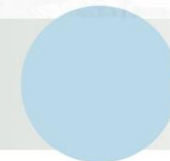
Rail Trail Transit Alignment

From Quinn's Junction to Bonanza Drive utilizing the existing trail.

- Multiple modes could be considered, not formally studied.
- **Trip types:** local and regional
- **Operating environment:** off corridor, then mixed flow at Bonanza Drive
- **Typical stop spacing:** TBD
- **Typical peak frequency:** TBD
- **Ridership Capacity:** TBD
- **Compatibility with existing system:** TBD
- **Other considerations:**
 - Would remove or compromise existing trail system.
 - Wetland and environmental resources exist and may be impacted.
 - Federal funding cannot be used for the trail if there are feasible and prudent alternatives that would avoid the property.











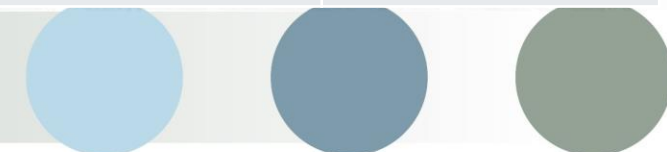
Potential Rail Trail alignment



Rail Trail Transit Alignment

MEASURES OF EFFECTIVENESS

Does the alternative reduce congestion on SR-248? - OR - Does the alternative reduce travel delay on SR-248?	Does the alternative improve access to key destinations on SR-248 between Quinn's Junction and the OTTC?	Does the alternative reduce transit travel times on SR-248 between Quinn's Junction and the OTTC?	Does the alternative increase on-time performance of transit on SR-248 between Quinn's Junction and the OTTC?	Does the alternative provide reliable transit service on SR-248 that serves low-income and minority populations?	Does the alternative provide high-frequency transit on SR-248 between Quinn's Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on SR-248 between Quinn's Junction and the OTTC?	Feasibility: Implementable before 2034? Service proven technology?
 <ul style="list-style-type: none"> • May reduce SOVs, depending on mode, however, without a dedicated connection to OTTC or other in-town destinations, it may not. 	 <ul style="list-style-type: none"> • Assuming a termination at Bonanza Drive, or a merge into mixed flow traffic, unlikely to improve access to OTTC. 	 <ul style="list-style-type: none"> • May reduce transit travel time for a portion of the corridor. 	 <ul style="list-style-type: none"> • May increase on-time performance for a portion of the corridor. 	 <ul style="list-style-type: none"> • It does not provide contiguous on-corridor access to low-income and minority populations. 	 <ul style="list-style-type: none"> • There is no solution identified for the whole study area (Bonanza Drive, and Deer Valley Drive). 	 <ul style="list-style-type: none"> • This alignment does not provide on-corridor transit options. 	 <ul style="list-style-type: none"> • Feasibility is mode-dependent, additional study required to determine.



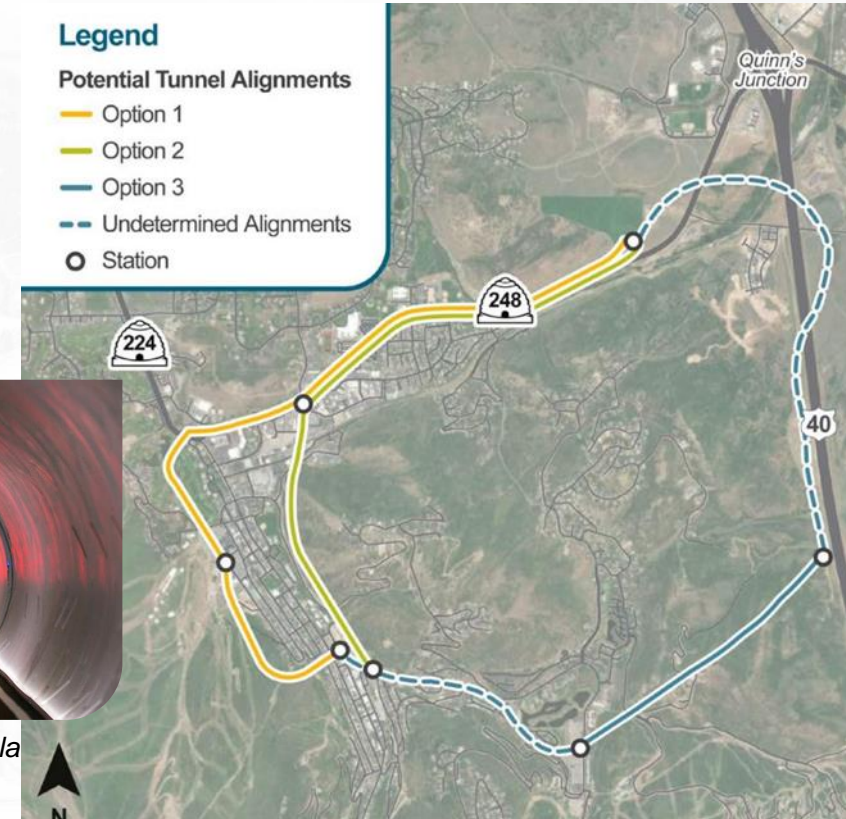
Electric Vehicle Tunnel

From Quinn's Junction to Bonanza Drive via a below-surface tunnel under SR-248.

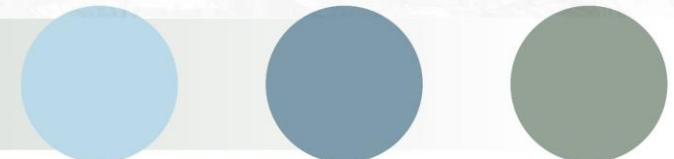
- Studied in the Emerging Disruptors Study (2024).
- **Trip types:** local
- **Operating environment:** subterranean tunnel
- **Typical stop spacing:** N/A
- **Typical peak frequency:** N/A
- **Ridership Capacity:** N/A
- **Compatibility with existing system:** No
- **Other considerations:**
 - Concerns over soils/environmental impacts.
 - Removes patronage from business access.
 - Not considered a service-proven technology.
 - Tunnels don't accommodate traditional transit vehicles and are geared toward SOVs.
 - Unlikely to qualify for federal funds.











Example of EV tunnel, Tesla Tunnel, Las Vegas

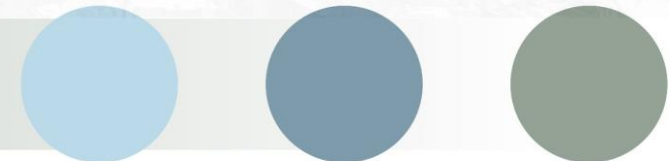


Potential tunnel alignments, Emerging Disruptors Study (2024)



Electric Vehicle Tunnel

MEASURES OF EFFECTIVENESS							
Does the alternative reduce congestion on SR-248? - OR - Does the alternative reduce travel delay on SR-248?	Does the alternative improve access to key destinations on SR-248 between Quinn's Junction and the OTTC?	Does the alternative reduce transit travel times on SR-248 between Quinn's Junction and the OTTC?	Does the alternative increase on-time performance of transit on SR-248 between Quinn's Junction and the OTTC?	Does the alternative provide reliable transit service on SR-248 that serves low-income and minority populations?	Does the alternative provide high-frequency transit on SR-248 between Quinn's Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on SR-248 between Quinn's Junction and the OTTC?	Feasibility: Implementable before 2034? Service proven technology?
							
<ul style="list-style-type: none"> Size of tunnel does not accommodate all types of vehicles and would provide relatively low capacity. 	<ul style="list-style-type: none"> Does not provide access between the point-to-point trips. 	<ul style="list-style-type: none"> Unlikely to reduce travel times due to vehicle size limitations and lack of on-corridor access. 	<ul style="list-style-type: none"> Does not provide solutions to increase on-time performance for transit. 	<ul style="list-style-type: none"> Does not provide a reliable transit service to low-income and minority populations. 	<ul style="list-style-type: none"> Does not provide high frequency transit solutions. 	<ul style="list-style-type: none"> Does not provide additional travel modes for the general public to utilize. 	<ul style="list-style-type: none"> Not a service proven technology, particularly for transit.



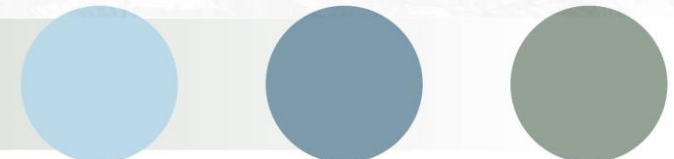
Traditional Widening

Four or five general purpose lanes in the “chokepoint” section of SR-248 from Richardson Flat Road to Wyatt Earp Way.

- Studied in the 2020 Environmental Assessment.
- **Trip types:** local and regional
- **Operating environment:** existing roadways plus some widening
- **Typical stop spacing:** N/A
- **Typical peak frequency:** N/A
- **Ridership Capacity:** N/A
- **Compatibility with existing system:** N/A
- **Other considerations:**
 - Not a dedicated transit solution.
 - May improve travel time and reduce congestion, for a time.











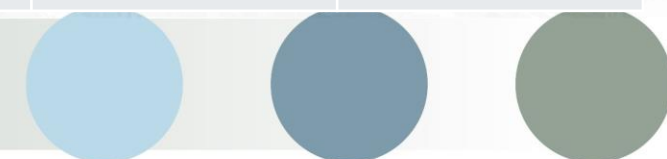
Example of a five-lane cross section, matching SR-248 west of Richardson Flat Road



Traditional Widening

MEASURES OF EFFECTIVENESS

Does the alternative reduce congestion on SR-248? - OR - Does the alternative reduce travel delay on SR-248?	Does the alternative improve access to key destinations on SR-248 between Quinn's Junction and the OTTC?	Does the alternative reduce transit travel times on SR-248 between Quinn's Junction and the OTTC?	Does the alternative increase on-time performance of transit on SR-248 between Quinn's Junction and the OTTC?	Does the alternative provide reliable transit service on SR-248 that serves low-income and minority populations?	Does the alternative provide high-frequency transit on SR-248 between Quinn's Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on SR-248 between Quinn's Junction and the OTTC?	Feasibility: Implementable before 2034? Service proven technology?
 <ul style="list-style-type: none"> It may alleviate congestion and delay at least for some time. 	 <ul style="list-style-type: none"> If travel times are reduced, it may improve access. 	 <ul style="list-style-type: none"> Does not improve transit travel times long term, particularly during peak times. Does not provide a transit-forward solution to address this measure. 	 <ul style="list-style-type: none"> It does not provide a transit-forward solution that would address on-time performance if transit vehicles are in mixed-flow traffic. 	 <ul style="list-style-type: none"> It does not enhance reliable transit service for low-income and minority populations on corridor. 	 <ul style="list-style-type: none"> It does not provide frequent transit service while limiting road widening. 	 <ul style="list-style-type: none"> It does not provide additional travel modes on SR-248. 	 <ul style="list-style-type: none"> Likely implementable before 2034. A project strategy for capacity building.



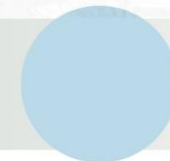
Commuter Rail

Dedicated commuter rail corridor on SR-248, may be unfeasible on Bonanza Drive and Deer Valley Drive.

- Not formally studied.
- **Trip types:** regional
- **Operating environment:** separated right-of-way
- **Typical stop spacing:** 3-5 miles
- **Typical peak frequency:** 15-30 minutes
- **Ridership Capacity:** 100-200 per car
- **Compatibility with existing system:** No
- **Other considerations:**
 - Service will not get up to speed (79 mph) in this short a segment.
 - Key destinations along the corridor would not be served.
 - Would likely have substantial property impacts to make turns or to accommodate the exclusive right-of-way necessary.
 - Not designed to be utilized on grades steeper than 4%, likely could not utilize Bonanza or Deer Valley Drive, or turn into the OTTC.











UTA FrontRunner commuter rail, Salt Lake City, UT



Commuter Rail

MEASURES OF EFFECTIVENESS

Does the alternative reduce congestion on SR-248? - OR - Does the alternative reduce travel delay on SR-248?	Does the alternative improve access to key destinations on SR-248 between Quinn's Junction and the OTTC?	Does the alternative reduce transit travel times on SR-248 between Quinn's Junction and the OTTC?	Does the alternative increase on-time performance of transit on SR-248 between Quinn's Junction and the OTTC?	Does the alternative provide reliable transit service on SR-248 that serves low-income and minority populations?	Does the alternative provide high-frequency transit on SR-248 between Quinn's Junction and the OTTC that limits road widening?	Does the alternative provide additional travel modes on SR-248 between Quinn's Junction and the OTTC?	Feasibility: Implementable before 2034? Service proven technology?
 <ul style="list-style-type: none"> • It may reduce travel delay on corridor for a time. • Mat not reduce congestion depending on termini (e.g., if it does not service OTTC it may see reduced ridership draw). 	 <ul style="list-style-type: none"> • May not make turns onto Bonanza and Deer Valley Drive without property impacts, may not make steep grades (>4%), service would terminate on SR-248 and not serve destinations at or near OTTC. 	 <ul style="list-style-type: none"> • Commuter rail may reduce transit travel time on SR-248, but unlikely to service Bonanza Drive and Deer Valley Drive. 	 <ul style="list-style-type: none"> • Service, on segments it could operate on, would be reliable. 	 <ul style="list-style-type: none"> • Station spacing for commuter rail is every ~5 miles; no stops on-corridor would be provided therefore limiting service for low-income and minority populations. 	 <ul style="list-style-type: none"> • Corridor widening would likely be required to accommodate commuter rail service. 	 <ul style="list-style-type: none"> • Commuter rail unlikely to service OTTC due to turning radii constraints and grade. 	 <ul style="list-style-type: none"> • Time required to clear and design this system plus O&M facility may be tight. • Service proven technology.



Minor Transit Improvements

Minor improvements to the existing service which may include station locations and amenities, and signal priority.









- **Trip types:** local and regional
- **Operating environment:** mixed flow with traffic, and shoulder-running in some locations
- **Typical stop spacing:** could be assessed for improvements
- **Typical peak frequency:** could be assessed for improvements
- **Ridership Capacity:** 40-45 per bus
- **Compatibility with existing system:** Yes
- **Other considerations:**
 - Does not address desire for a higher-level of investment in transit infrastructure.
 - Does not address congestion, travel delays, transit travel times, on-time improvements, or the reliability of transit services.

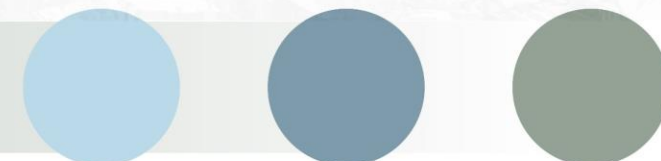


Fresh Market bus stop improvements, Park City, UT



Minor Transit Improvements

MEASURES OF EFFECTIVENESS							
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<ul style="list-style-type: none"> Minor improvements would not address congestion or travel delay. 	<ul style="list-style-type: none"> Would provide the same existing access as today, likely. 	<ul style="list-style-type: none"> Minor improvements would not reduce transit travel times. 	<ul style="list-style-type: none"> Minor improvements would not increase on-time performance. 	<ul style="list-style-type: none"> Minor improvements do not enhance reliability of transit service for low-income and minority populations. 	<ul style="list-style-type: none"> Minor improvements do not provide high-frequency transit between Quinn's Junction and OTTC as buses would merge into mixed-traffic. 	<ul style="list-style-type: none"> It does provide an additional travel mode, but the alternative would not be competitive with single occupancy vehicles. 	



Initial Purpose and Need Screening

Alternative	MEASURES OF EFFECTIVENESS							FEAS.
	Does the alternative reduce congestion or reduce travel delay?	Does the alternative provide access to key destinations on-corridor?	Does the alternative reduce transit travel times?	Does the alternative increase on-time performance of transit?	Does the alternative provide reliable transit service on-corridor for low-income and minorities?	Does the alternative provide high-frequency transit on-corridor with limited road widening?	Does the alternative provide additional travel modes on-corridor in the study area?	
No Action Alternative	Not Screened							
Gondola	Yellow	Red	Yellow	Green	Red	Red	Red	Yellow
One Way Traffic Loop	Yellow	Red	Red	Red	Red	Red	Red	Green
Reversible Flex Lanes	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green
Dedicated Bus Lanes	Yellow	Green	Green	Green	Green	Green	Green	Green
Light Rail	Yellow	Green	Green	Green	Green	Red	Green	Yellow
Automated Guideway Transit	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Green	Yellow
Rail Trail Transit Alignment	Yellow	Red	Yellow	Yellow	Red	Red	Red	Yellow
Electric Vehicle Tunnel	Red	Red	Red	Red	Red	Red	Red	Red
Traditional Widening	Yellow	Yellow	Red	Red	Red	Red	Red	Green
Commuter Rail	Yellow	Red	Yellow	Green	Red	Red	Red	Yellow
Minor Transit Improvements	Red	Yellow	Red	Red	Red	Red	Yellow	Green

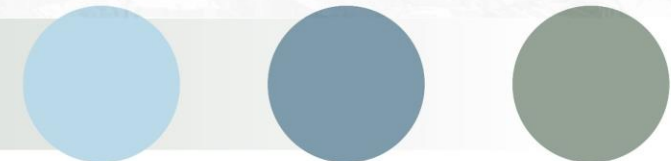
Yes ● Maybe ● No ●



Staff Recommended for Level 1 Screening

Alternative	MEASURES OF EFFECTIVENESS						FEAS.	
	Does the alternative reduce congestion or reduce travel delay?	Does the alternative provide access to key destinations on-corridor?	Does the alternative reduce transit travel times?	Does the alternative increase on-time performance of transit?	Does the alternative provide reliable transit service on-corridor for low-income and minorities?	Does the alternative provide high-frequency transit on-corridor with limited road widening?		Does the alternative provide additional travel modes on-corridor in the study area?
No Action Alternative	Not Screened							
Gondola	Yellow	Red	Yellow	Green	Red	Red	Red	Yellow
One Way Traffic Loop	Yellow	Red	Red	Red	Red	Red	Red	Green
Reversible Flex Lanes	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Green
Dedicated Bus Lanes	Yellow	Green	Green	Green	Green	Green	Green	Green
Light Rail	Yellow	Green	Green	Green	Green	Red	Green	Yellow
Automated Guideway Transit	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Green	Yellow
Rail Trail Transit Alignment	Yellow	Red	Yellow	Yellow	Red	Red	Red	Yellow
Electric Vehicle Tunnel	Red	Red	Red	Red	Red	Red	Red	Red
Traditional Widening	Yellow	Yellow	Red	Red	Red	Red	Red	Green
Commuter Rail	Yellow	Red	Yellow	Green	Red	Red	Red	Yellow
Minor Transit Improvements	Red	Yellow	Red	Red	Red	Red	Yellow	Green

Yes ● Green Maybe ● Yellow No ● Red



Next Steps

