

POINT OF THE MOUNTAIN
TRANSIT STUDY



Alternatives Evaluation Report

JUNE 2021



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Acronyms and Abbreviations

BRT	bus rapid transit
BUILD	Better Utilizing Investments to Leverage Development
CIG	Capital Investments Grants
Commission	Point of the Mountain Development Commission
CRA	Community Reinvestment Area
CRT	commuter-rail transit
DMU	Diesel Multiple Unit
FEIS	Final Environmental Impact Statement
FTA	Federal Transit Administration
HB	House Bill
I-15	Interstate 15
LPA	locally preferred alternative
LRT	light trail transit
MAG	Mountainland Association of Governments
PA	Preferred Alternative
PID	Public Infrastructure District
POM	Point of the Mountain
POMSLA	POM State Land Authority
RTPs	Regional Transportation Plans
SR-92	State Route 92
STP	Surface Transportation Program
TAC	Technical Advisory Committee
TIFIA	Transportation Infrastructure Finance and Innovation Act
TMA	Transportation Management Association
TOD	transit-oriented development
TRZ	transportation reinvestment zone
UDOT	Utah Department of Transportation
UTA	Utah Transit Authority
WFRC	Wasatch Front Regional Council

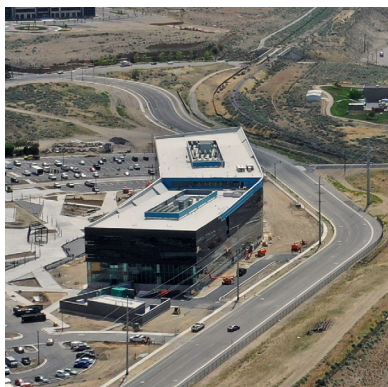
POINT OF THE MOUNTAIN TRANSIT STUDY



Project Overview

The Point of the Mountain Transit Study advanced a proposal to investigate options to expand the regional high-capacity transit system to **provide high-quality transit connecting Utah's fastest growing areas** in southern Salt Lake County and northern Utah County. The study led to regional consensus for a Preferred Alternative to develop a world class bus rapid transit line from Draper to Lehi, serving up to 10 stations, and connecting to FrontRunner and the proposed Central Corridor Bus Rapid Transit project. The next steps include engineering design and environmental study to help move the project toward rapid implementation.

The Point of the Mountain Transit Study was a collaborative partnership of local governments, agencies, and business groups committed to developing regional transit improvements to enhance mobility and complement the region's unique economic growth opportunities.



Connects Economic Centers












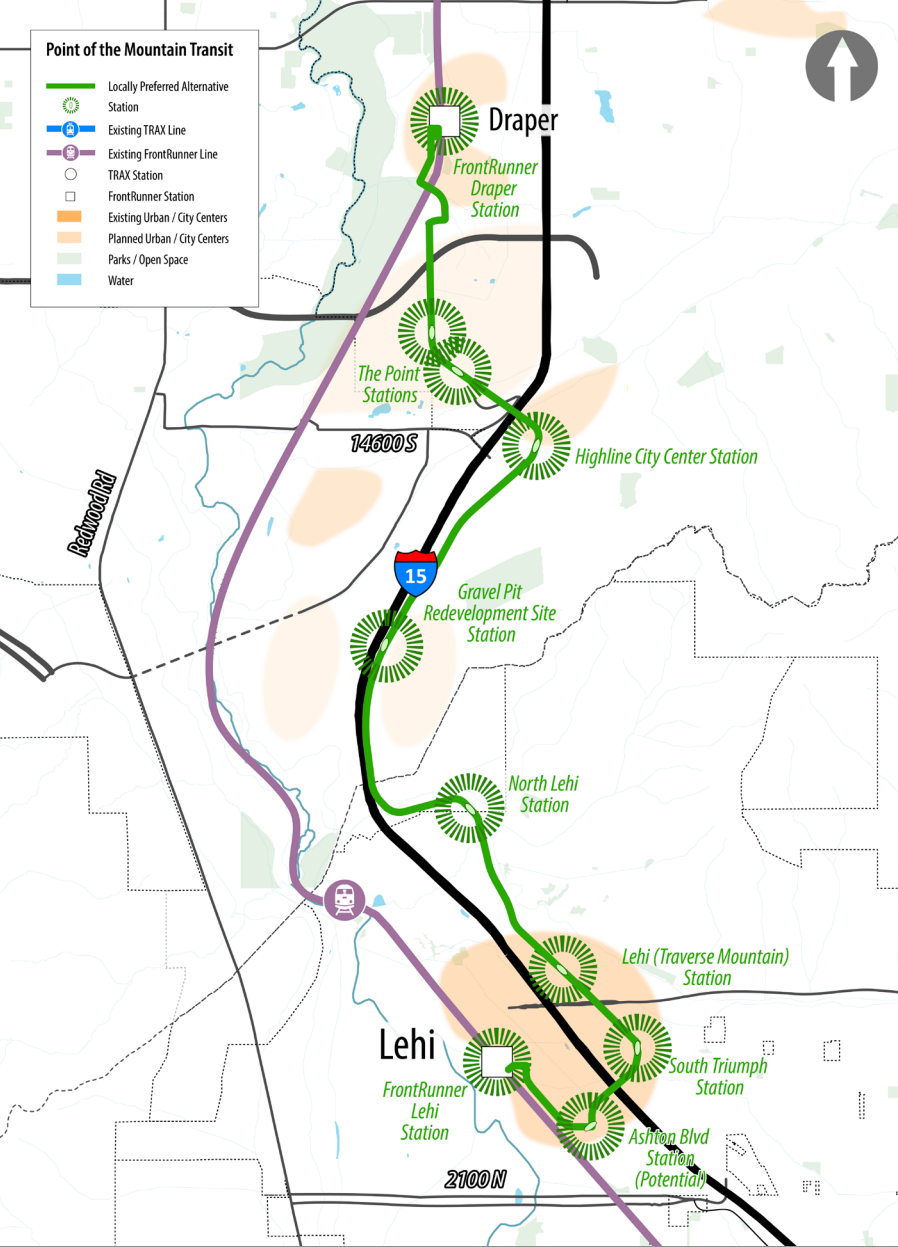
Regional Collaboration



FrontRunner Connection

Point of the Mountain Transit

-  Locally Preferred Alternative Station
-  Existing TRAX Line
-  Existing FrontRunner Line
-  TRAX Station
-  FrontRunner Station
-  Existing Urban / City Centers
-  Planned Urban / City Centers
-  Parks / Open Space
-  Water



Preferred Alternative

A Preferred Alternative for transit in Point of the Mountain was developed recognizing:

ECONOMIC DEVELOPMENT BENEFITS AS CRITICAL DRIVER

Connecting Draper FrontRunner to The Point, Highline City Center, and Silicon Slopes in Lehi, links current and future economic development centers not directly served by high-capacity transit.

IMPORTANCE OF AN EARLY AND IMPLEMENTABLE ACTION

Providing a transit solution that achieves economic benefits and serves communities as quickly as possible.

STRATEGIC CONNECTIONS

At the southern end, the project will connect with the proposed Central Corridor BRT project serving Lehi to Provo, and will extend BRT to a major medical center, TOD site, and FrontRunner Lehi.



UP TO
10
MILES



UP TO
10
STATIONS



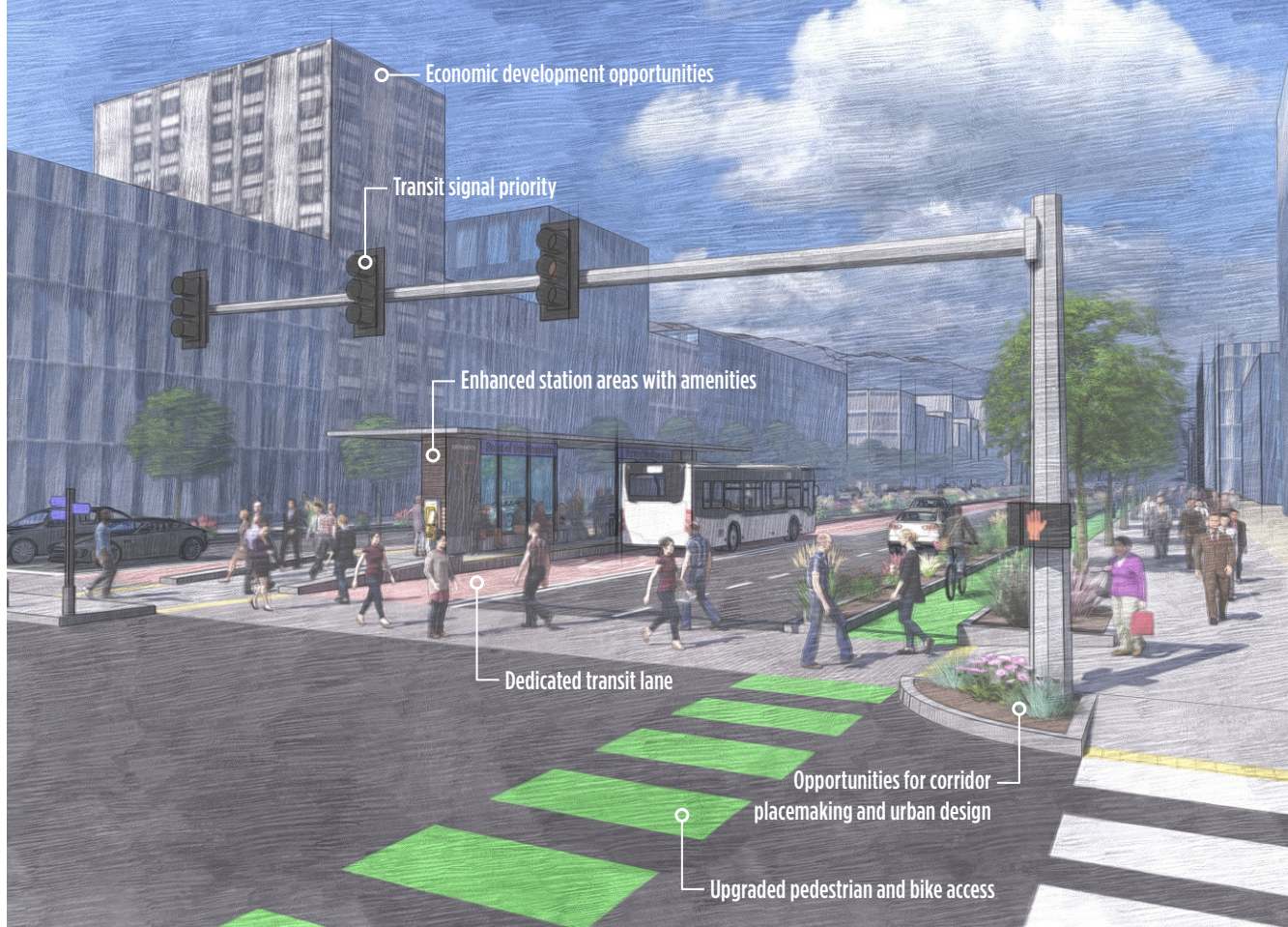
\$425-600M
ESTIMATED
CAPITAL COSTS



CONNECTIONS
TO FRONTRUNNER, LOCAL BUS, AND
PROPOSED CENTRAL CORRIDOR BRT



\$3.5-4.5M
ESTIMATED OPERATIONS AND
MAINTENANCE COSTS PER YEAR



All renderings are for illustrative purposes only to show key BRT features.

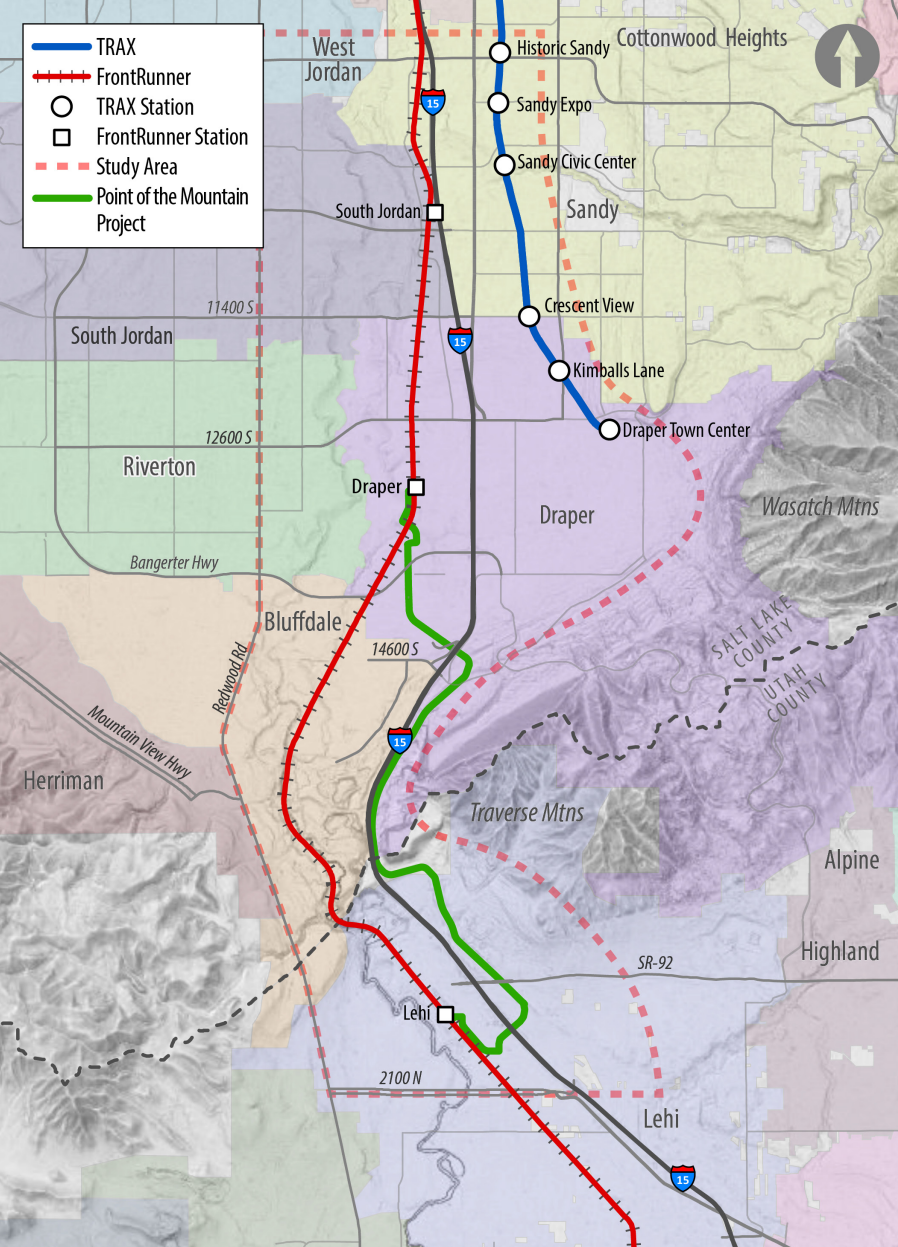
Gold-Standard BRT

The project includes **“gold-standard” BRT providing high-quality transit service that performs like rail.** The project features:

- Over 80% exclusive transit operations and exceptional station area amenities to promote economic development opportunities.
- Less expensive capital costs compared to rail to allow for quick implementation.
- Greater flexibility than rail that will meet the transportation needs as the area develops between now and 2050.



- TRAX
- FrontRunner
- TRAX Station
- FrontRunner Station
- - - Study Area
- Point of the Mountain Project



Point of the Mountain Study Area

Project Benefits



ENHANCE ECONOMIC DEVELOPMENT OPPORTUNITY

The project supports the economic development vision for the region by connecting growth centers in the two counties, and serving high tech and transit-oriented development (TOD) along the corridor.

\$3.9M/year
property tax value generated at the local level

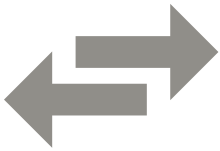
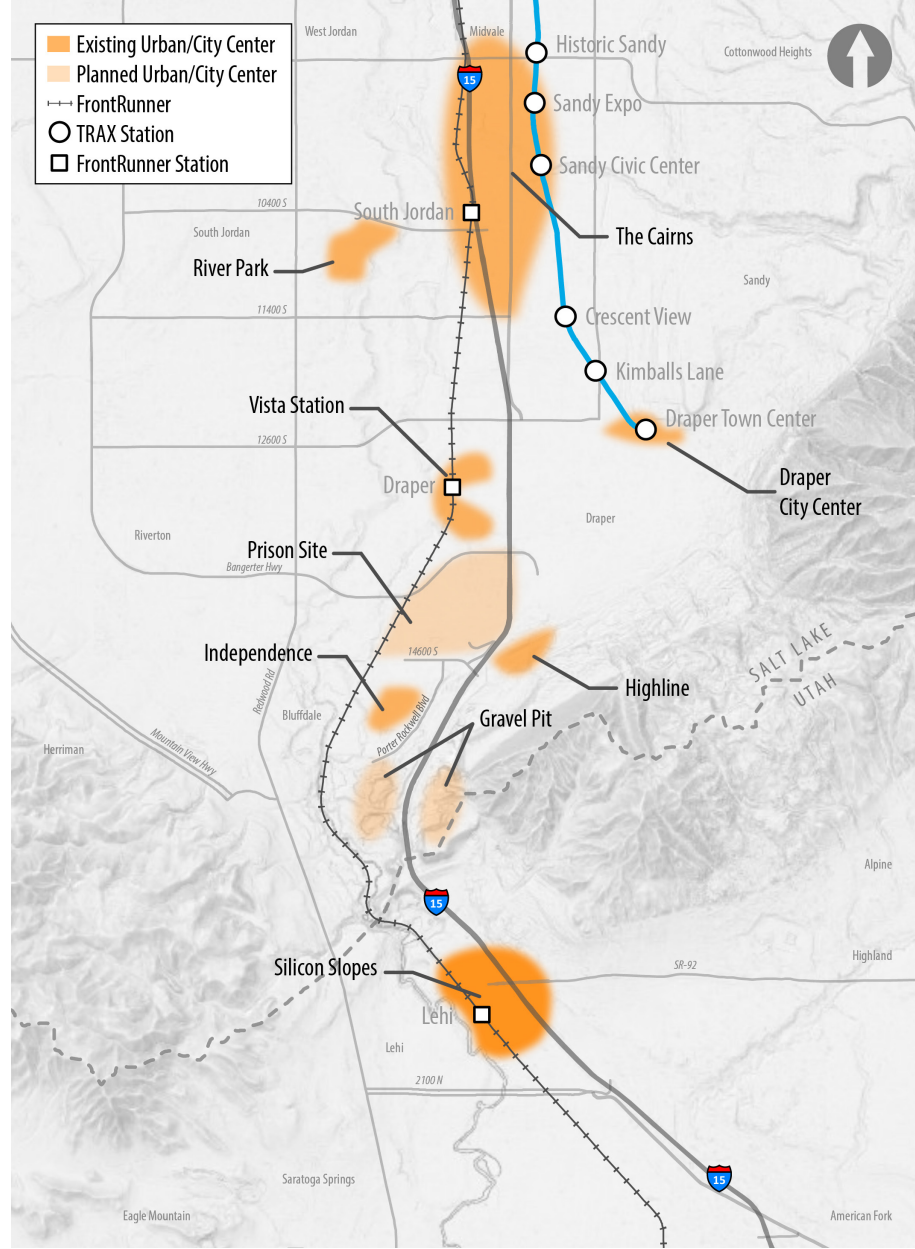
\$6.3M/year
tax and fee revenue created at the state and local level

70,000
new jobs

The State of Utah's redevelopment of the 600+-acre Utah State Prison site, known as The Point, would present a regionally and nationally significant opportunity for the State of Utah to catalyze job growth and high-quality development.

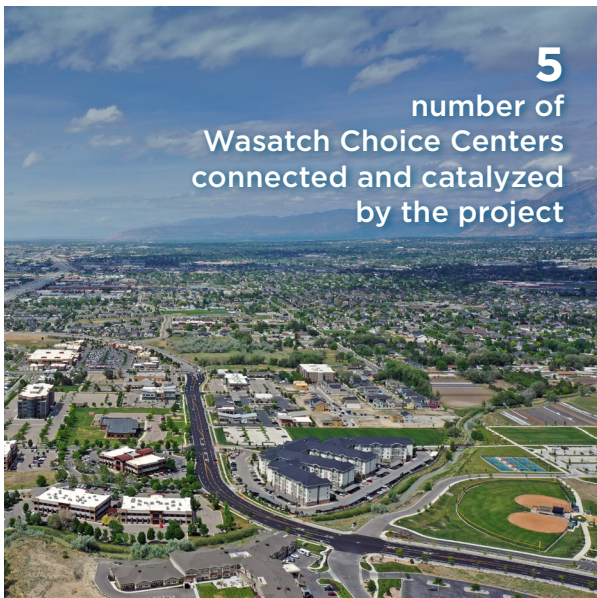


Point of the Mountain Urban and City Centers




IMPROVE ACCESS AND MOBILITY

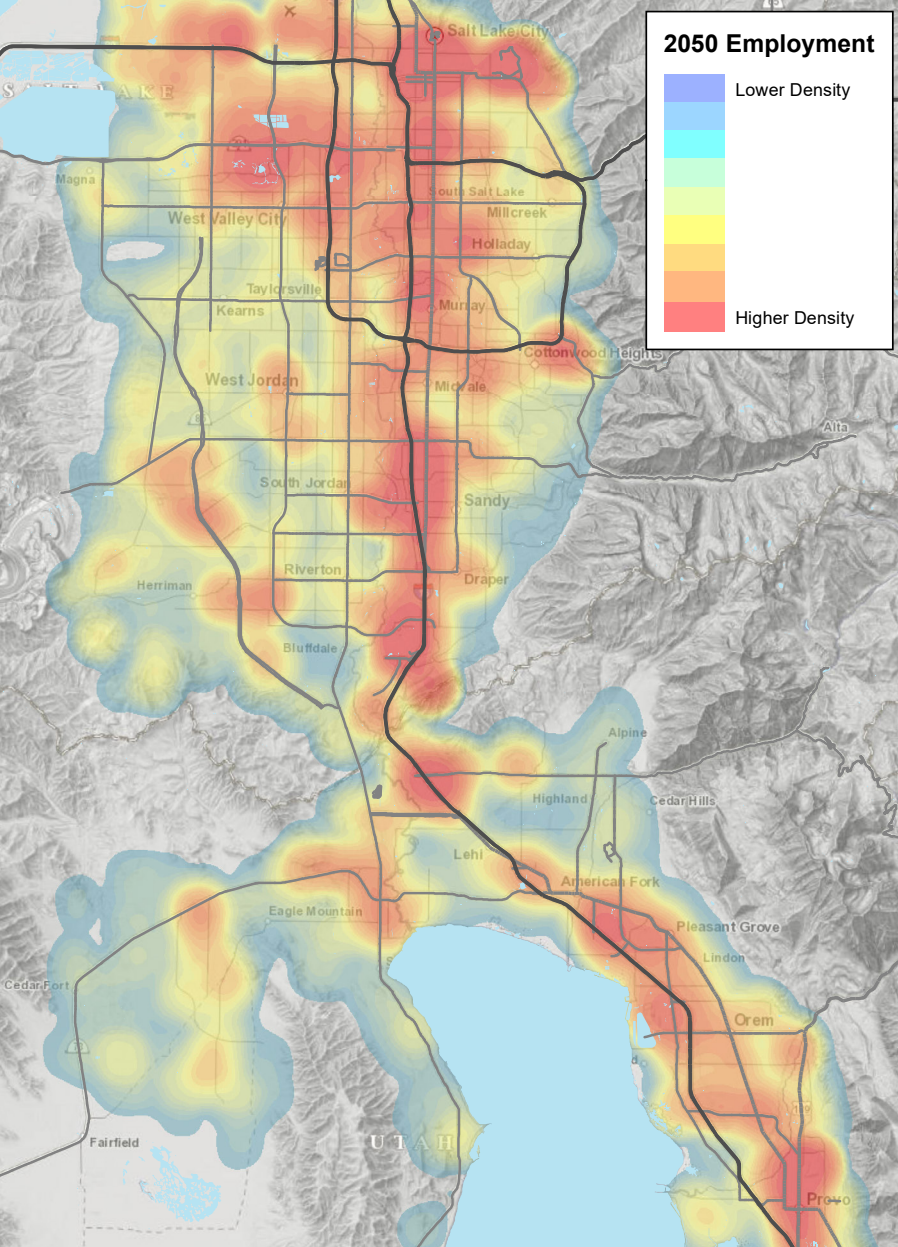
Parallel to the heavily traveled and congested I-15 corridor, the project will create a sustainable mobility solution to connect regional development centers and create an attractive alternative to driving.



5 number of Wasatch Choice Centers connected and catalyzed by the project



Travel in the area is constrained by topography and other natural features, where a limited number of north-south highways and arterials are available. The existing facilities have high levels of congestion and unpredictable travel times, and will worsen as the area continues to grow. This project will provide other travel choices for people living and working in the area.



2050
Employment
Density



SUPPORT ROBUST ANTICIPATED GROWTH

Regional forecasts for population and employment growth in the Point of the Mountain area show a near doubling of population and employment by 2050, adding population on par with the current combined population of Sandy and Draper. Additional high-quality transit options are envisioned to help meet this future travel demand in one of the nation's fastest growing metropolitan areas.

89%
population increase from
2019 - 2050

87%
employment increase from
2019 - 2050

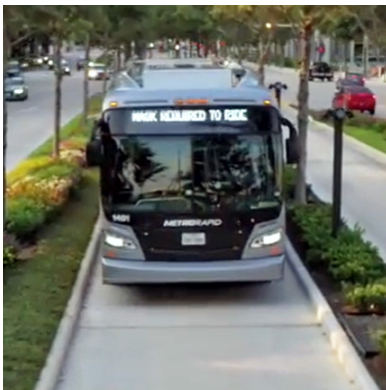
Unlike other urbanized areas along the I-15 corridor, extensive land is available for development and redevelopment now and into the coming decades. This includes development opportunities at The Point and gravel pits.

A World Class BRT Investment

The project envisions a world class transit investment that spurs economic development opportunity and showcases exceptional urban design. Features of a gold-standard BRT system are similar to those found in rail investments and proposed to include elements similar to those described from the following systems.



Houston Silverline BRT
Dedicated transit lines separated from traffic.



Houston Silverline BRT
Permanent infrastructure creates development certainty.



Houston Silverline BRT
Bus vehicles mimic look and feel of rail.



Cleveland Healthline BRT
Corridor urban design opportunities.



Pittsburgh East Liberty Station BRT
Stations integrated into community.



UTA UVX BRT
Station area branding and design.



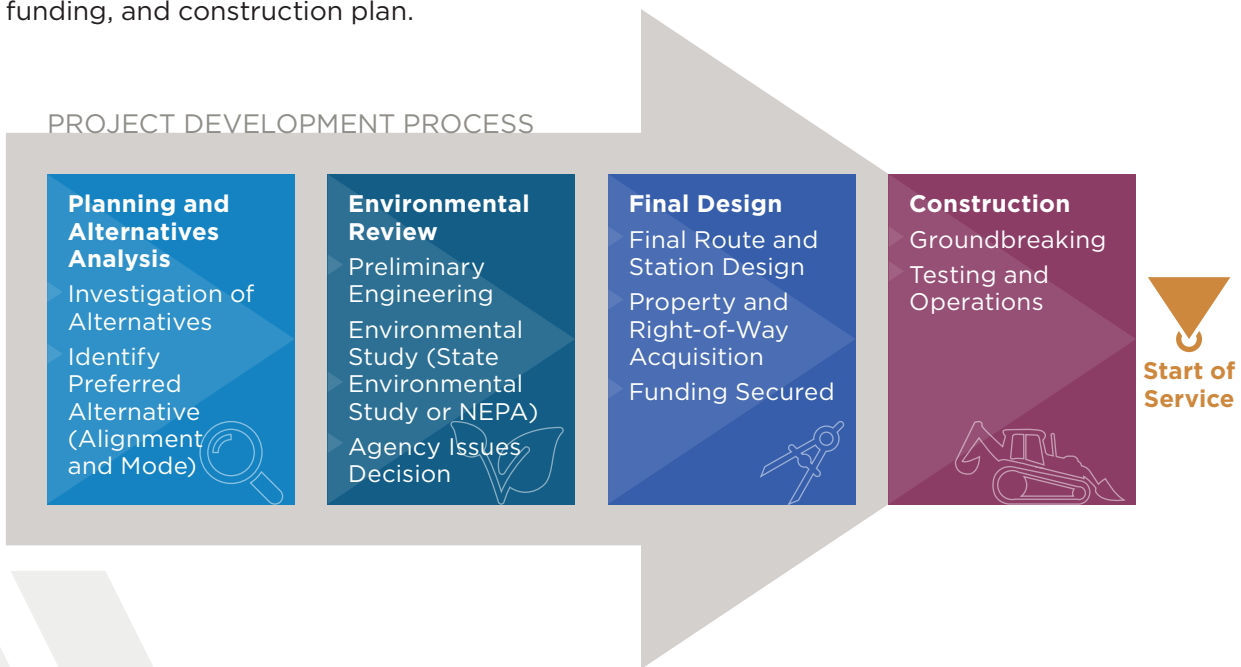
Project Development and Selection

The Point of the Mountain Transit Study included a multi-step planning, design, and analysis process to develop and evaluate alternatives. At each step of the process, extensive coordination with project partners and the public helped guide decision making. The work also included a statistically valid public survey and an economic development roundtable event.



Next Steps

This study completes the planning and alternatives analysis step of project development to identify the Preferred Alternative for the Point of the Mountain Transit project. In accordance with UTA procedures, official adoption of the Preferred Alternative requires amendment of the long-range plan and approval of the affected cities, the UTA Local Advisory Council, and the UTA Board of Trustees. After formal adoption, the next step will include preliminary engineering and environmental review, which will include a detailed project implementation, funding, and construction plan.



1. INTRODUCTION

1.1 Overview

The Point of the Mountain Transit Study is an alternatives analysis that was initiated in 2019 by the Utah Transit Authority (UTA) and a coalition of governments and stakeholders, including Mountainland Association of Governments (MAG), Utah Department of Transportation (UDOT), Wasatch Front Regional Council (WFRC), Bluffdale City, Draper City, Lehi City, Sandy City, Salt Lake County, South Jordan City, and Utah County. The transit study developed and evaluated options for providing expanded high-capacity transit service in the Point of the Mountain area in southern Salt Lake County and northern Utah County. The purpose of the transit study was to help the project partners identify a Preferred Alternative to address transportation problems in this area, focused on urban growth and economic development centers. The Preferred Alternative identifies the transit alignment (corridor and locations to be served) and the transit mode (type of transit technology - e.g., bus rapid transit [BRT], light rail transit [LRT]). After this planning and alternatives analysis process is completed, the Preferred Alternative will undergo additional evaluation during the next step in the project development process, which is the environmental review, as shown in Figure 1-1.



Figure 1-1. Project Development Process

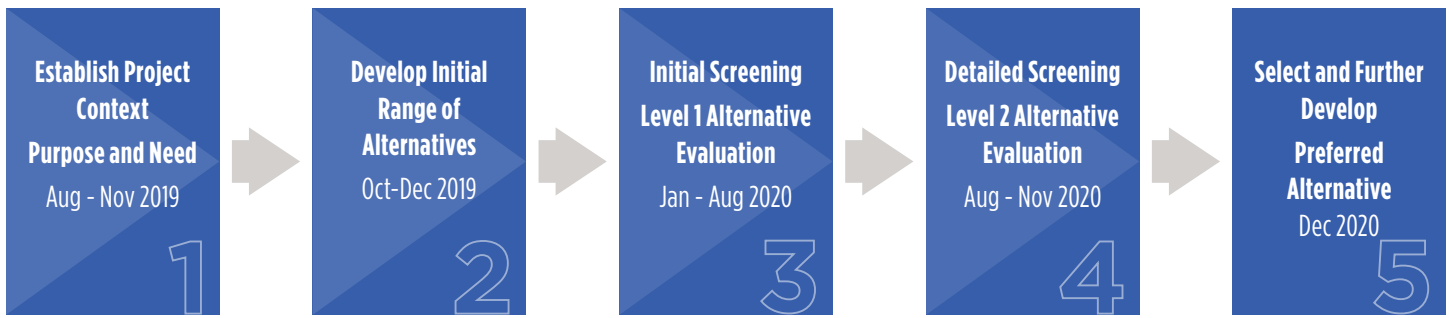


Figure 1-2. Transit Study Steps

The study process consisted of several distinct steps, including establishing the project context, determining the Purpose and Need for the proposed transit improvement, identifying and evaluating alternatives, and recommending a Preferred Alternative (Figure 1-2). Coordination and involvement with affected jurisdictions, stakeholders, and the public occurred throughout the process.

1.2 Study Area

The Point of the Mountain study area is a subarea between the Salt Lake City and Provo/Orem metropolitan areas. The regional setting, including the existing regional high-capacity transit network and proposed study area, is shown in Figure 1-3. Interstate 15 (I-15) is the primary north-south highway facility in the area and serves the highest levels of transportation demand. FrontRunner commuter rail runs west of I-15 and serves the greater metropolitan region from Ogden in Weber County to Provo in Utah County. In the study area, FrontRunner serves the South Jordan, Draper, and Lehi stations. TRAX Blue Line light rail runs from Salt Lake City to Draper, with stops in Sandy (Historic Sandy, Sandy Expo, Sandy Civic Center, and Crescent View) and Draper (Kimballs Lane and Draper Town Center) in the study area. TRAX Blue Line runs east of I-15 in the study area and serves local and regional trips.

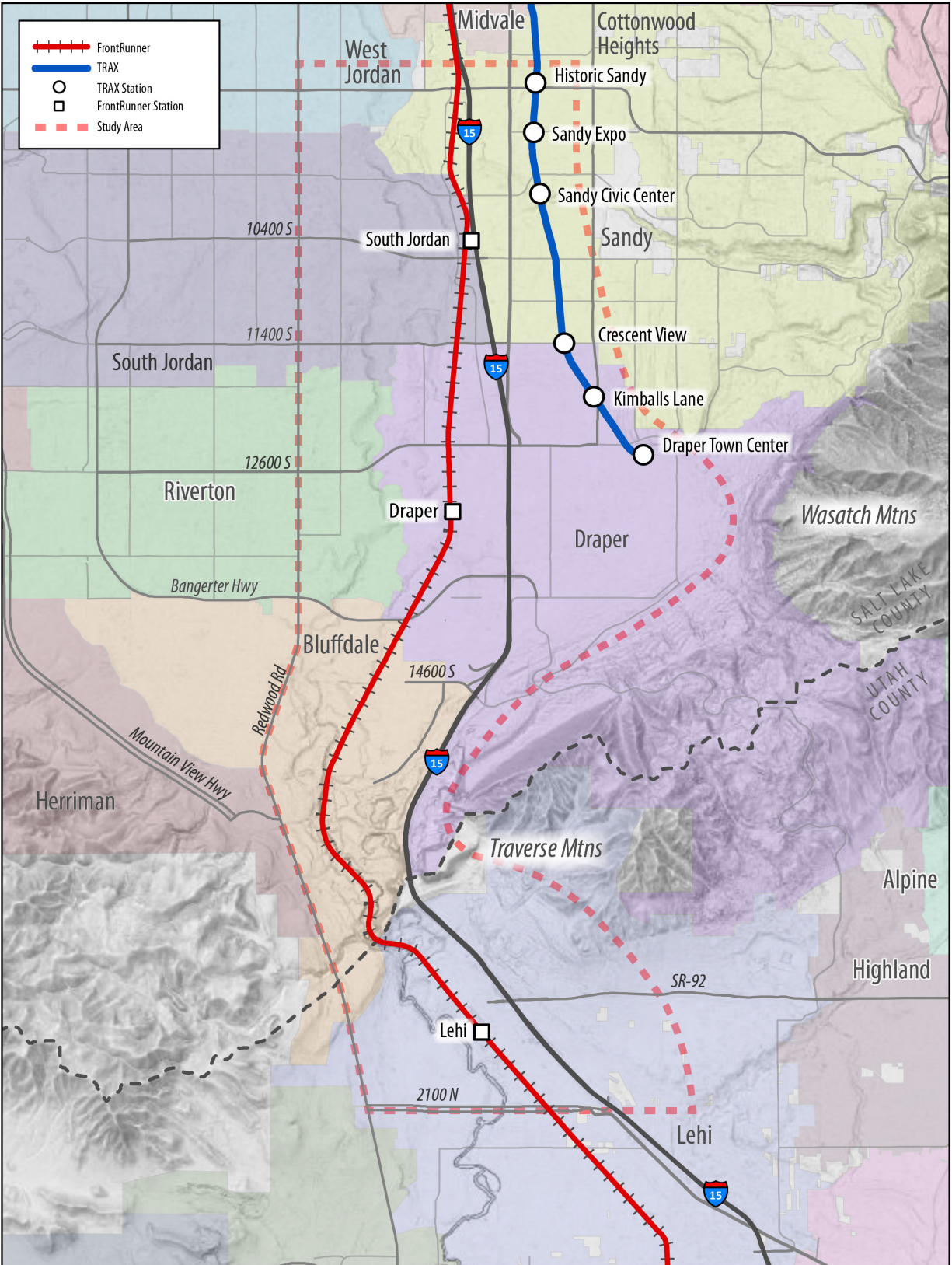


Figure 1-3. Study Area

2. CORRIDOR PORTRAIT

This section provides a high-level overview of existing and future conditions within the project study area, with an emphasis on describing transportation, land use, planning, and growth conditions

2.1 Transportation System

The following section provides an overview of the transit and roadway network in the study area. The overview includes the existing network and planned future network as described in the approved WFRC and MAG 2050 Regional Transportation Plans (RTPs).

In general, existing mobility is constrained by topography, which allows only a limited number of north south highways/arterials and corridors to serve travel needs between Salt Lake and Utah counties. Although future improvements are contemplated, topographic constraints, natural features (e.g., the Jordan River and canyon), and existing mining operations occurring in the chokepoint all provide challenges to mobility in the Point of the Mountain area.

2.1.1 Transit

A summary of the existing and planned transit service within and adjacent to the study area is shown in Figure 2-1. Current boardings by station (from April 2019) are also depicted on Figure 2-1. Primary routes include:

- **TRAX Blue Line** – Provides LRT service from Salt Lake City to Draper. A planned extension of the TRAX Blue Line is envisioned in the RTP, with two potential alignments proposed.
- **FrontRunner Commuter Rail** – Provides commuter-rail transit (CRT) from Ogden to Provo. Future improvements are envisioned to FrontRunner service as a result of systemwide improvements from doubletracking, electrification, and addition of infill stations. Bluffdale is a proposed future infill station on FrontRunner.
- **Local bus routes** – Multiple routes exist, notably the 871 Tech Corridor Rail Connector, which provides local bus service between Draper Town Center Station on TRAX Blue Line to FrontRunner Lehi, with numerous stops in the Silicon Slopes area. Route 864 provides local bus service from FrontRunner Lehi Station to Xactware. Expanded service (either route extension or increased service frequency) is anticipated in the future along most of the local bus routes.
- **VIA transit service** – Under a newly created pilot program, UTA has contracted with rideshare company, VIA, to provide on-demand microtransit services to designated transit hubs in Bluffdale, Draper, Herriman, Riverton, and South Jordan.

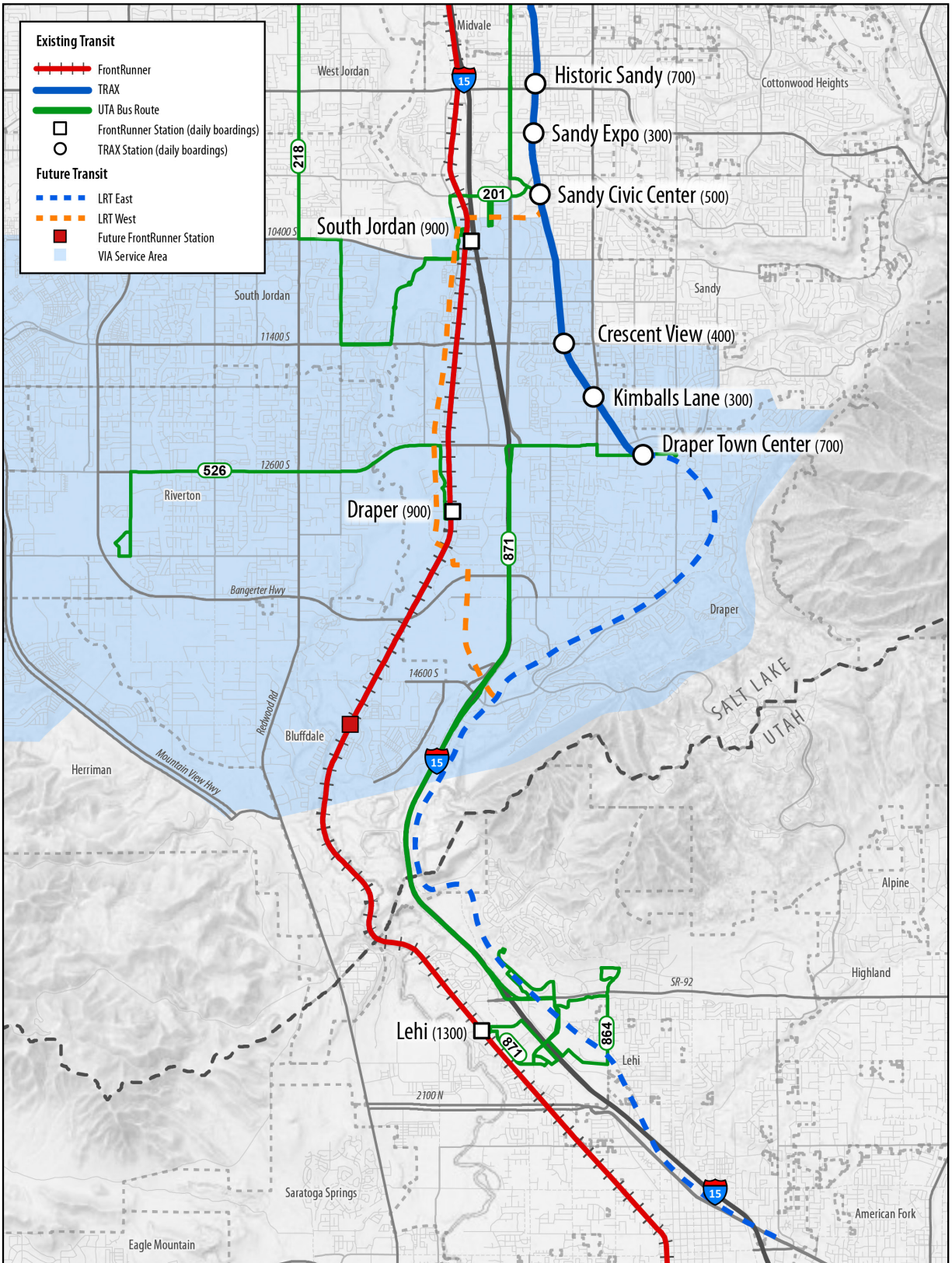


Figure 2-1. Existing and Future Transit Service

2.1.2 Roadway

The current roadway network of highways and major arterials consists of the following continuous north-south and east-west corridors in the Point of the Mountain area:

- North-south: I-15 and Redwood Road
- East-west: 10400/10600 South, 11400 South, 12600/12300 South, and Bangerter Highway

Future planned roadway projects envision a more robust north-south highway network with the extension of Mountain View Highway, Point of the Mountain Connector Road, and I-15 Frontage Roads anticipated between now and 2050. Additional east-west connectors are envisioned in the chokepoint of the Point of the Mountain bottleneck, including Porter Rockwell Boulevard, and extension of 2100 North to the Mountain View Freeway. Widening of existing facilities is also envisioned. These future projects are depicted in Figure 2-2.

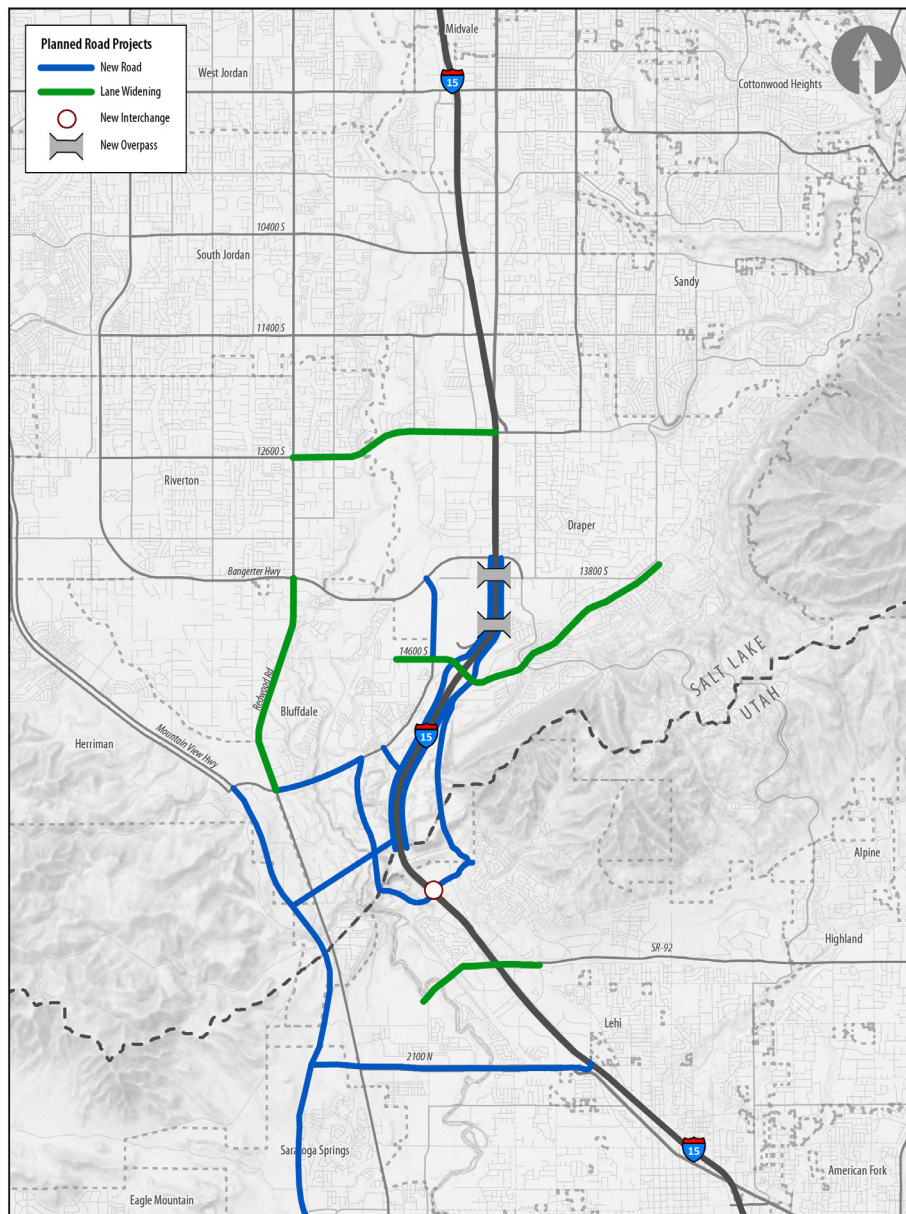


Figure 2-2. Planned Relevant Roadway Projects

2.2 Land Use

General descriptions of existing land use for key jurisdictions within the study area are as follows:

- **Sandy** is in the northeast portion of the study area. Most of the commercial/office land uses in Sandy are located between I-15 and the TRAX Blue Line. There are some notable regional commercial draws in this area, including the Rio Tinto Stadium, the Hale Centre Theatre, the Jordan Commons, the South Town Mall, and the Cairns District. Most of the land uses east of the TRAX Blue Line are low-density, single family residential, which follow typical suburban development patterns.
- **South Jordan** is in the northwest portion of the study area. The FrontRunner South Jordan Station is also in this area, with some office and high-density housing located nearby. Other commercial uses are located directly adjacent to I-15. Low density residential uses cover most of the remaining area, with some low density commercial use along Redwood Road to the west and a large office park along River Front Parkway. A fair amount of open space is located along the Jordan River, and a relatively small amount of agriculture land is scattered throughout.
- **Draper** falls within the central/eastern portion of the study area. Most of the commercial land uses in this area are adjacent to I-15. There is also a large amount of commercial uses spanning east-west along 12300 South. Office uses are located adjacent to the FrontRunner Draper Station to the west (such as the E-bay center). The land to the east is mainly low-density residential, especially extending into the foothills. Though Draper's city boundaries cover the Traverse Mountains to the southeast, the slope of the terrain prevents significant development other than some single-family neighborhoods. The gravel pit to the south is a significant industrial operation (adjacent to I-15), and the Utah State Prison is an institutional use located just west of this area (slated for relocation by 2022).
- **Bluffdale** is in the southwest region of the study area. There are office/warehouse uses located adjacent to I-15 as well as industrial operations located around the gravel pit area to the south. Some medium density residential and commercial use is located within the newer "Independence" development. The Camp Williams military reservation is located on the south end of the city. Almost all land uses to the west are low density residential, with some agriculture uses scattered throughout.
- **Lehi** is in the southeast corner of the study area in Utah County. The segment of Lehi that falls within the study area is home to a large amount of employment centers, office, retail, and regional commercial draws (e.g., Adobe, Thanksgiving Point, and the Outlets at Traverse Mountain). These commercial uses are located primarily adjacent to I-15 and along State Route 92 (SR-92). Single family homes are located in the Traverse Mountain foothills (northeast Lehi), to the west of I-15 (north of SR-92), along the Jordan River, and in the southeast corner of the study area. There is a large amount of agricultural/open space land to the west of the Jordan River. Lehi has a transit-oriented development overlay zone, with nodes located in the study area at Frontage Road/Digital Drive south of the Clyde gravel mining operation, and at Adobe.

2.2.1 Development in Urban/City Centers

Wasatch Choice 2050 is the shared transportation and development plan for the Wasatch Front from Weber to Utah County. It denotes land use centers, which are denoted areas of historic and emerging regional destinations for economic activity and housing. These centers emphasize that these areas should be walkable and more dense than their surrounding area.¹ Wasatch Choice 2050 Vision identifies four types of centers – Metropolitan, Urban Center, City Center, and Neighborhood Centers. Urban and City Centers provide more dense areas that typically would benefit from high-capacity transit. There are no Metropolitan Centers in the study area. The description of Urban and City Centers relevant to the project that are within the study area are summarized in Table 2-1 and depicted in Figure 2-3.

¹ Wasatch Front Regional Council 2019-2050 Regional Transportation Plan. May 2019.

Table 2-1. Summary of Urban/City Center Existing and Future Land Use Centers

Urban/City Center (Jurisdiction)	Existing Land Use Condition and Future Land Use Expectation (relative density and timing, if known)
Cairns (Sandy)	1,000-acre district with current land uses including regional retail, large mid-rise office, civic facilities, regional attractions (Rio Tinto, Hale Centre Theatre), and transit-oriented development (TOD) (mostly residential) at Sandy Civic Center Station. Future redevelopment envisioned in the Sandy Cairns Master Plan to an “urban downtown” collection of 11 urban and mixed-use villages with a variety of residential densities, ranging from townhomes to high-rise. Master Plan plans for development through 2040.
River Park (South Jordan)	Approximate 115-acre employment center with mid-rise office, large retail, and some multifamily housing. Site is still developing (mainly office projects), though close to buildout. Infill possible in the future as market conditions allow.
Prison Site (Draper, State of Utah)	Over 600-acre site currently occupied by Utah State Prison (to be moved 2022). Planned redevelopment to an urban, compact, mixed-use center starting in mid-2020s through 2050+. Site planning currently underway.
Highline City Center (Draper)	Approximate 70-acre site, with first phase of development constructed (Pluralsight employment center and nearby 700-unit multifamily residential). Future phases of development envisioned include additional mixed use office, commercial, and residential uses (office buildings 6-8 stories; residential 10-story maximum, with density range of 15 60 units/acre). Timing for future phases is near term.
Draper City Center (Draper)	200-acre center with existing development composed of low density residential, office, commercial (35-foot height maximum, residential density maximum 25 units/acre). Proposed land use changes envision multifamily residential, office, commercial, institutional (4-story maximum height, residential density maximum 25 units/acre).
Vista Station (Draper)	Approximate 400 acres of Transit Station District zoning around the FrontRunner Station with pockets of 4-story higher density residential and 5-6-story office. Market-driven zoning allows varied levels of intensity: 1) no maximum residential density (minimums only between 5 and 35 units/acres), and 2) no maximum commercial building heights, just minimum.
Bringhurst Station (Bluffdale)	Site is largely undeveloped and occupied by gravel mining operations. Future development envisions a 180-acre retail, commercial, and mixed-use development site.
Independence at Bluffdale/ Mt. Jordan and Porters Point (Bluffdale)	Area in this 520 acre site is in the process of developing, with current uses including single-family residential, some multistory multifamily residential, and 1-3-story office/commercial. Future development envisions additional retail, commercial, and mixed uses.
Gravel Pit site, east (Draper)	Currently used as a gravel mining operation. Future uses have been envisioned for when mining operations cease, though timing is to be determined and likely up to several decades out.
Gravel Pits, west of I-15 (Bluffdale)	Currently used as a gravel mining operation. Future uses have been envisioned for when mining operations cease, though timing is to be determined and likely up to several decades out.
Silicon Slopes – Traverse Ridge/Traverse Mountain (Lehi)	Approximate 1,500-acre area consisting of multiple large mid-rise office buildings, large tech company presence (“Silicon Slopes,” including Adobe, Vivint, Young Living, Xactware, etc.), and single-family residential to the northeast regional amenities, including hospital and retail (Cabela’s and outlet mall). Future uses envisioned include high-density housing and continued office land use and regional destinations. Uses described further in the Traverse Mountain Area Plan 2011.
Silicon Slopes – Thanksgiving Point (Lehi)	This nearly 1,000-acre area has developed rapidly over last 10 years to include numerous large mid-rise office buildings, large tech company presence, and regional attractions (Thanksgiving Point). There is single-family residential directly north and south and some multifamily but very limited high density in the area. Additional office growth is expected, and construction of varying levels of housing density is occurring to the west along 2100 North. Uses described further in the Thanksgiving Point Area Plan.

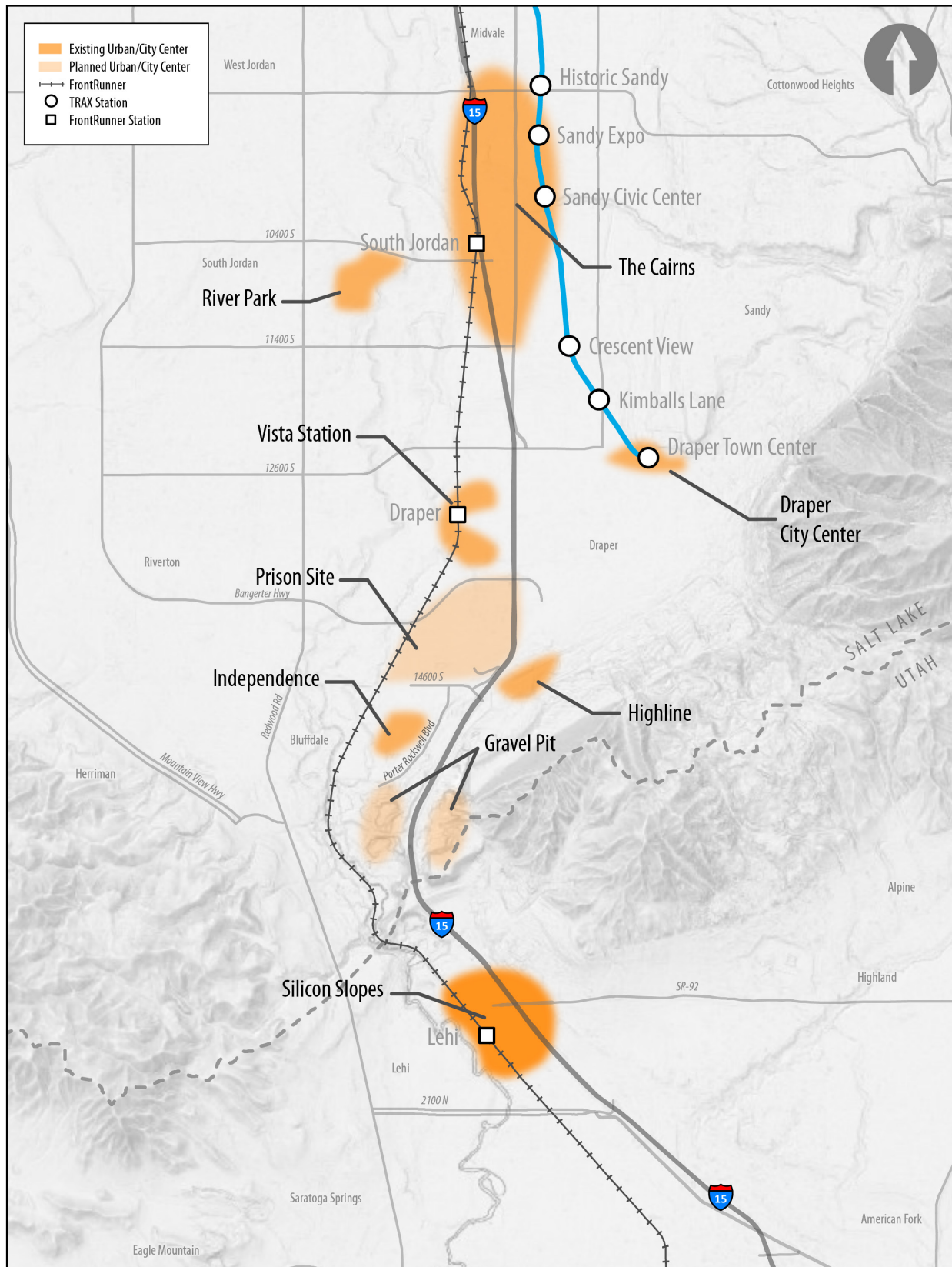


Figure 2-3. Existing and Future Urban/City Centers

2.3 Building on Previous Efforts

2.3.1 Point of the Mountain Vision

In 2016, with the passage of House Bill (HB) 318, the Utah Legislature created the Point of the Mountain (POM) Development Commission (Commission), which was tasked with developing a vision for the area around the border of Salt Lake County and Utah County that incorporates growth, land use, economic development, transportation, and infrastructure elements. HB 318 specifically charged the Commission to study and make recommendations on future transportation needs within POM.

Key findings from each phase of the POM Vision effort and how they relate to the POM transit study are summarized in Table 2-2 and shown in Figure 2-4.

Table 2-2. Summary of Point of the Mountain Vision Relevant Key Findings

Phase/Report and Overview	Key Findings related to Point of the Mountain Transit Study
<p>Phase 1 Report (May 2017)</p> <p>Overview: focuses on engagement with the public, stakeholders, and experts to develop an initial vision.</p>	<ul style="list-style-type: none"> • Success at POM will require overcoming the challenge of transportation congestion, notably the bottleneck connecting Salt Lake and Utah counties. Ensure transportation infrastructure funding does not lag behind growth pressures. • Availability of over 20,000 undeveloped acres for urban growth, most of it in highly desirable locations, including the prison site. • Coordination between land use and transportation is a key concern moving forward in the visioning process.
<p>Phase 2 Report (January 2018)</p> <p>Overview: Vision elements, development of scenarios, selection of POM vision.</p>	<ul style="list-style-type: none"> • “World-class public transportation” was a vision element identified, with the following relevant goals: <ul style="list-style-type: none"> • Extend TRAX or similar mode through Lehi to Orem; explore a potential alignment west of I-15. • Strengthen FrontRunner as the regional transit spine. • Identify future transit stations and transit-oriented development.
<p>Prison Site Report (2018)</p> <p>Overview: Conceptual site plan</p>	<ul style="list-style-type: none"> • Presents a conceptual plan for how the site could develop over the coming decades as the vision is implemented. Includes a proposed network of public transit routes, including TRAX light rail with two stations. Identifies other features such as public open space, land use, and street network.
<p>Phase 3 Report (January 2019)</p> <p>Overview: Funding and financing analysis</p>	<ul style="list-style-type: none"> • Identifies mechanisms to fund the approximately \$3.8 billion in transportation projects identified in Phase 2, the bulk of that cost related to Mountain View Corridor and TRAX extension from Salt Lake County to Utah County.
<p>Supplementary Report: Transportation Analysis (June 2018)</p> <p>Overview: Additional analyses of select POM transportation projects to supplement vision effort.</p>	<p>This report was completed at the request of the transportation agencies, including UTA, UDOT, MAG, and WFRC, to supplement the vision effort:</p> <ul style="list-style-type: none"> • Additional analysis was undertaken to illustrate high-level tradeoffs between various north-south transit alternatives in the POM area. • Primary alignments considered (see detail on Figure 2-4): <ul style="list-style-type: none"> • TRAX Blue Line West of I-15 (incorporated into POM Vision). • TRAX Blue Line East of I-15. <p>The report recommended future detailed analysis.</p>

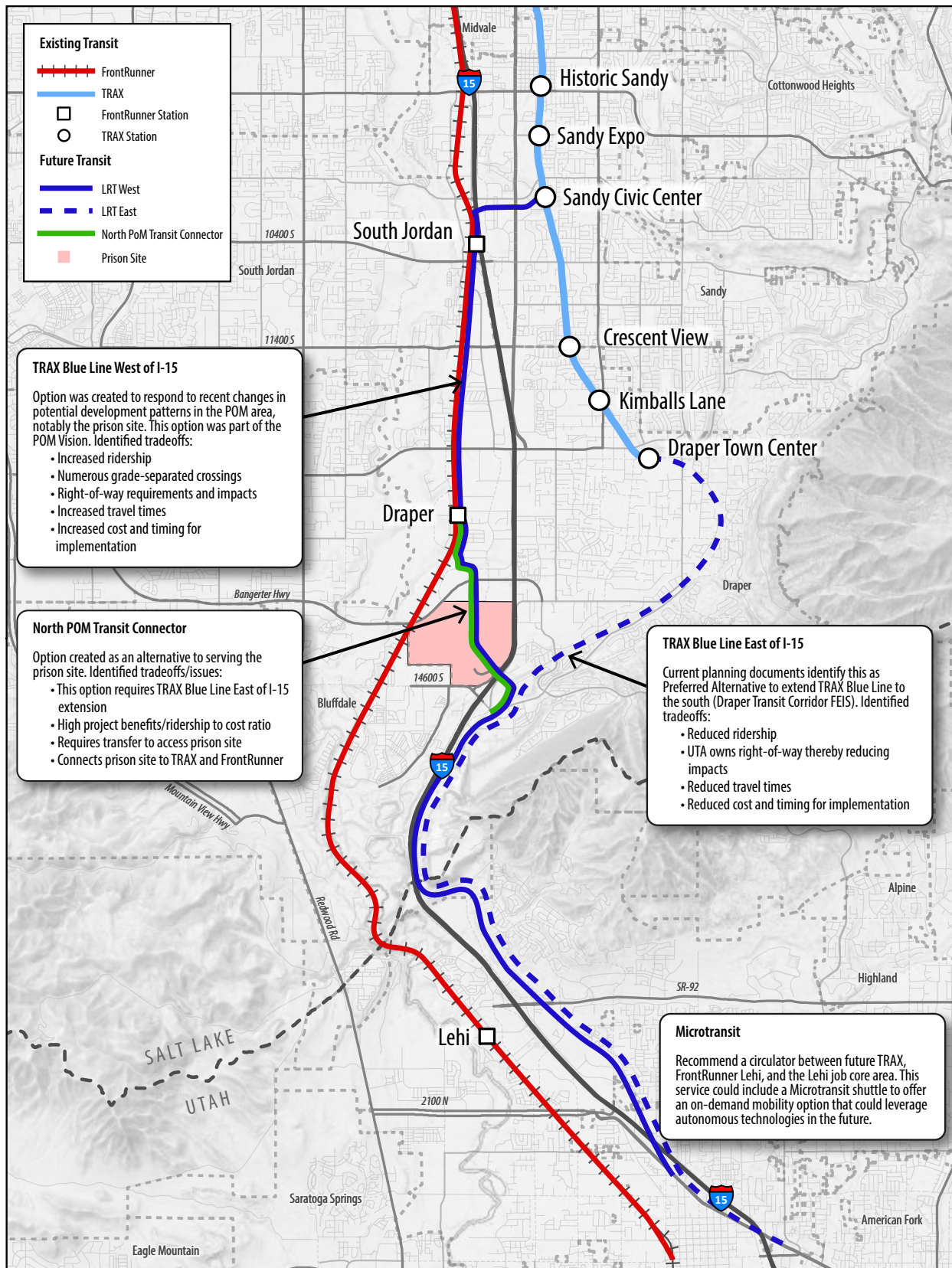


Figure 2-4. Point of the Mountain Vision Key Findings

2.3.2 Other Related Planning Efforts

Numerous related transportation plans have been developed over the years that inform the Point of the Mountain Transit Study. In addition, the Point of the Mountain Transit Study closely coordinated with several planning efforts that occurred concurrently. The key findings from these plans and studies are summarized in this section and shown on Figure 2-5. These efforts include:

Draper TRAX Final Environmental Impact Statement (2010) – The extension of TRAX from the Sandy Civic Center Station into Draper was documented in the 2010 Draper Transit Corridor Project Final Environmental Impact Statement (FEIS) and prior planning efforts. The Preferred Alternative (Minimum Operable Segment) was built in 2013, which extended the TRAX Blue Line from Sandy Civic Center Station to the Draper Town Center Station. Although constructed only to the Draper Town Center Station, the Preferred Alternative (Full Build) has been cleared environmentally along the UTA right-of-way to 14600 South. The Preferred Alternative (Full Build) includes two stations beyond the current terminus at Draper Town Center: Highland Station and 14600 South Station.

Future of FrontRunner (2018) – This 2018 UTA-led study evaluated FrontRunner improvement and expansion scenarios to identify the most effective scenario in terms of affordability, improved reliability, faster travel times, additional service, or a combination of incremental investments. The study included projections of future ridership in 2050 under four separate investment scenarios. The key takeaway from this study was that overall reductions in peak and off-peak headways had by far the largest effect on future FrontRunner ridership. Incremental ridership from proposed infill stations was found to be limited.

Sandy South Jordan Circulator (2015) – This study was a collaboration between the cities of Sandy and South Jordan and UTA. The purpose of this 2015 study was to characterize the existing conditions of the Sandy-South Jordan study area and the transit network currently in operation and to provide recommendations to enhance the role of transit in the future. Two recommended alternatives were proposed to provide a connection between TRAX and FrontRunner South Jordan in the study area (Figure 2-5). A rubber tire solution was the preferred mode.

Southwest Salt Lake County Transit Feasibility Study (2010) – The purpose of this Feasibility Study was to identify a realistic and suitable high-frequency and high capacity transit project to serve the communities of South Jordan, Herriman, Riverton, Bluffdale, and Draper that connects the end of the Mid-Jordan TRAX line at the Daybreak subdivision in South Jordan and the FrontRunner station in Draper. The selected Preferred Alternative is a BRT system, which operates between the Daybreak Mid-Jordan TRAX station and the 12800 South FrontRunner station as shown in Figure 2-5. The study was a collaboration between UTA, UDOT, WFRC, Salt Lake County, and the cities of South Jordan, Herriman, Riverton, Bluffdale, and Draper.

Redwood Road Multimodal Transportation Study (2018) – The purpose of the Redwood Road Multimodal Transportation Study was to identify a unified vision that preserves and enhances Redwood Road; create a Preferred Multimodal Alternative that addresses transit, roadway, bicycles, pedestrians, and land use; and lay a framework for implementation. The Preferred Multimodal Alternative recommended improved roadway, transit, bike, and pedestrian transportation options to accommodate future population growth, projected roadway congestion, and a lack of high-quality transit, bike, and pedestrian facilities along Redwood Road. The study was a collaboration between the Salt Lake City, Salt Lake County, Sandy, South Jordan, Taylorsville, UDOT, UTA, West Jordan, WFRC, and West Valley City.

Northern Utah County Transit Study (2015) – The purpose of this joint MAG and UTA study was to examine three different transit system components in detail and to be able to identify elements of these projects in sufficient detail to include them in the 2015 RTP, including recommendations for north-south light rail service as an extension from the Draper TRAX station. The north-south transit recommendation was an extension of the Draper TRAX Blue Line to the Orem Intermodal Center (FrontRunner station) via the existing rail line partially owned by UTA through Lehi, American Fork, Pleasant Grove, Lindon, and Vineyard. A series of station locations along this alignment were also recommended.

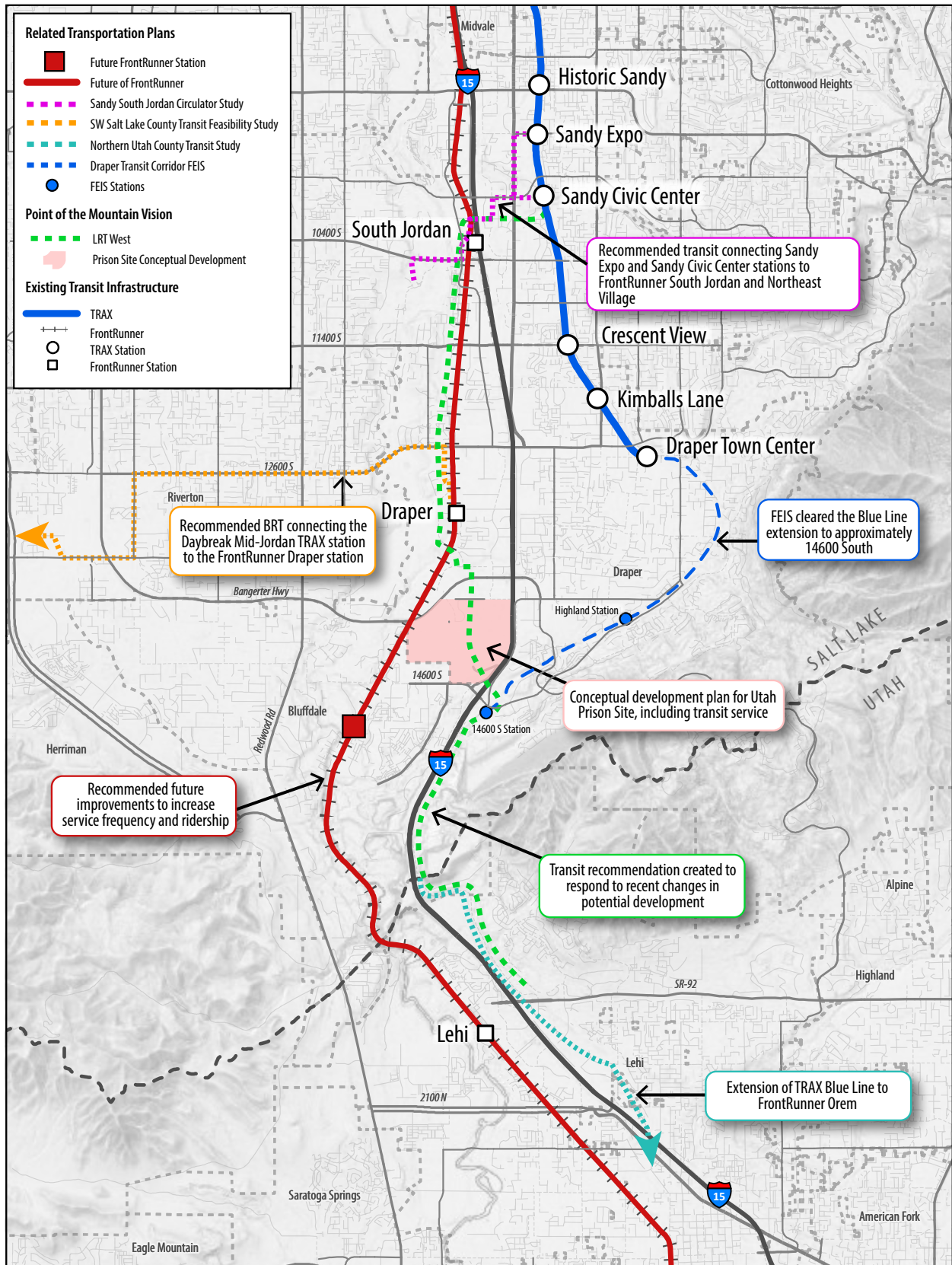


Figure 2-5. Recommendations from Related Plans

Thanksgiving Point Transit Potential Evaluation (2020) – The purpose of this UTA-led report was to examine the constraints and possibilities for improving local transit service in the Thanksgiving Point area. The report recommends the continued development of local collaboration among employers and major institutions to explore additional funding mechanisms for the provision of transit service (and other transportation improvements) in Thanksgiving Point. It also outlines Transportation Management Associations (TMAs) as a tool and possible structure of collaboration for transit agencies to deal with multiple small and midsize employers distributed across many small offices and retail developments.

Southwest Salt Lake County Transportation Analysis and Solutions Development (ongoing) – The purpose of this ongoing effort is to identify potential solutions to mobility concerns in Southwest Salt Lake County, focusing on, but not limited to, east-west mobility. The project is exploring short-, mid-, and long-term solutions that improve mobility. The study will be concluded in early 2021 with involvement from South Jordan, West Jordan, Riverton, Herriman, Bluffdale, Copperton Metro Township, and Salt Lake County.

Central Corridor Transit Study (2021) - This recently completed transit study identified a Preferred Alternative that provides BRT between Lehi and Provo. The study was led by UDOT (in collaboration with UTA, MAG, and the cities of Lehi, American Fork, Pleasant Grove, Lindon, Orem, Vineyard, and Provo). The Central Corridor Transit Study shares a terminus with the Point of the Mountain Transit Study, and extensive coordination occurred between the two studies throughout this process. A map of the Central Corridor Transit Preferred Alternative is shown below:



Figure 2-6. Central Corridor Transit Preferred Alternative

2.4 Growth and Travel Demand

Population and employment are forecast to grow rapidly in the coming decades along the Wasatch Front. This growth is expected to create additional transportation demand in the geographically constrained area between southern Salt Lake County and northern Utah County. This section will describe population and employment growth in the study area and implications of this growth on travel demand.

Current and projected population and employment estimates are presented in Table 2-3 for the state, for Salt Lake and Utah counties, and within the study area.

By 2050, Utah County will nearly double in population by adding over 600,000 more people and reaching nearly 1.3 million. This growth is double any other Wasatch Front county. During this period, Utah County's growth is larger than the other three Wasatch Front counties combined.² Salt Lake County grows at a more modest pace compared with Utah County and the State of Utah, though it adds nearly 400,000 by 2050 to reach a population of over 1.5 million. Utah County's employment growth is projected to almost double from nearly 400,000 jobs today to nearly 700,000 in 2050. Salt Lake County's employment growth is predicted to add nearly 400,000 jobs, resulting in a 42 percent increase.

Within the study area,³ population growth is expected to more than double by 2050 from approximately 45,000 to 97,000. This percent change exceeds the growth rate in both Salt Lake County and the State of Utah as a whole. Growth is nearly on par with the robust rates expected in Utah County.

Table 2-3. Estimated Population and Employment Growth*

	Population			Employment		
	2019	2050	% change 2019-2050	2019	2050	% change 2019-2050
State of Utah	3,260,765	5,017,232	54%	2,113,031	3,214,743	54%
Salt Lake County	1,164,057	1,531,282	32%	948,858	1,341,790	41%
Utah County	661,286	1,297,515	96%	365,174	689,992	89%
Study Area	114,780	217,304	89%	158,292	296,753	87%

*University of Utah Utah's Kem C. Gardner Policy Institute. July 1, 2017. Long-term Demographic and Economic Projections.

² Mountainland Association of Governments. TransPlan50, 2019-2050 Regional Transportation Plan.

³ For purposes of estimating current and future growth in the study area, all Traffic Analysis Zones that fall completely or partially in the study area were used.

Figure 2-6 shows the geographic distribution of population and employment density for the years 2019 and 2050. In 2050, population densities in the study area are highest along the I-15 corridor, particularly, in Sandy at the state-owned prison site (now referred to as “The Point”) and multiple locations in Lehi. Similarly, in 2050, employment densities in the study area are highest along the I-15 corridor from Sandy to Draper and into Lehi.

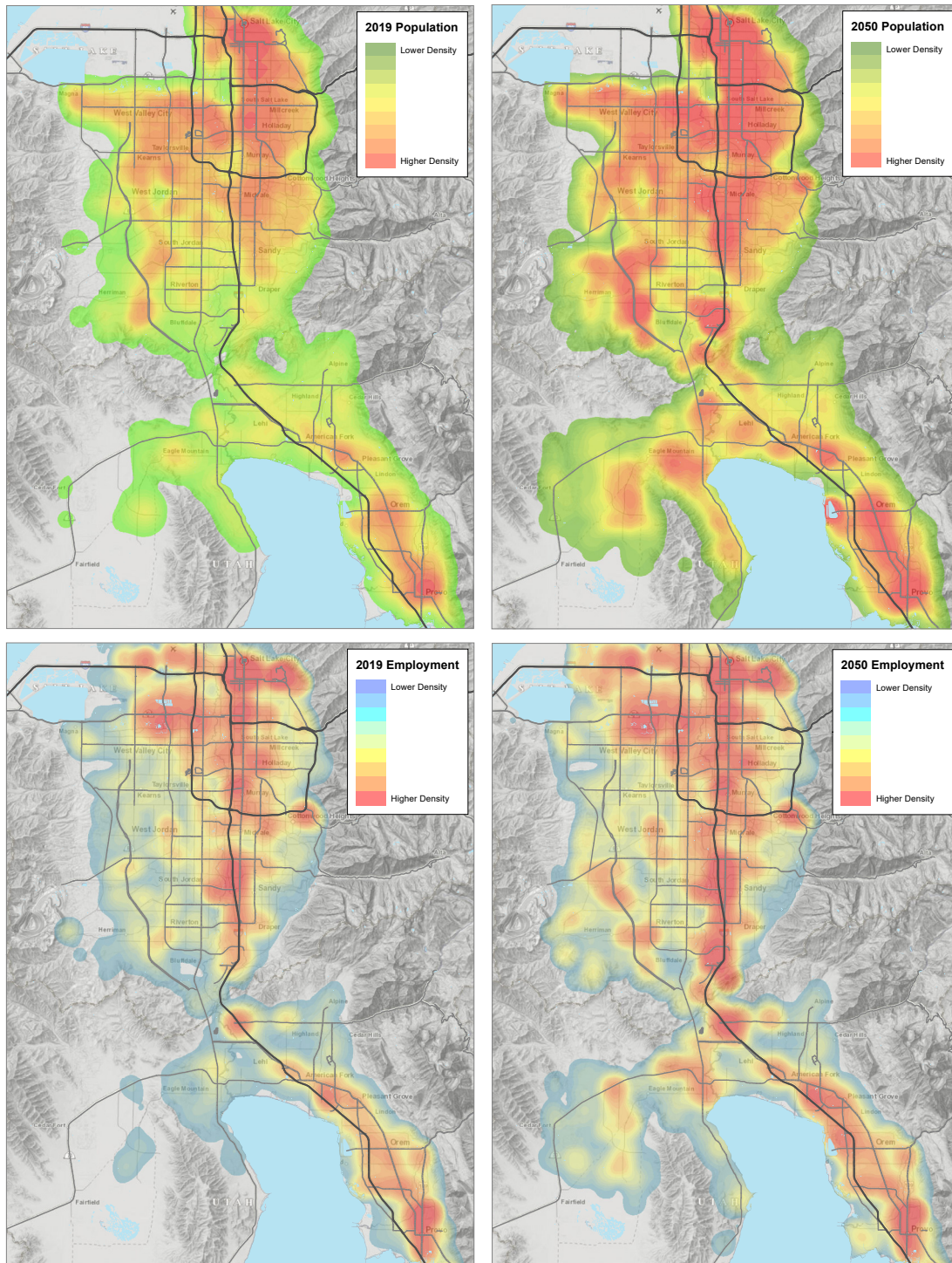


Figure 2-7. 2019 and 2050 Population Density (top) and Employment Density (bottom)

Transportation demand as a result of strong population and employment growth is contemplated in both the WFRC and MAG RTPs.

The WFRC RTP notes that the current commute time along the Wasatch Front for the average resident is approximately 1 hour. Without future transportation investments, the average time will grow to over 1 hour and 40 minutes by 2050. Building additional roadway capacity is needed to lessen delays, but those roadway investments alone will not be sufficient. The RTP notes that transit will play a vital role in accommodating project growth in travel demand. The RTP explores a variety of modes of travel, including transit, to reduce growth in travel demand.

MAG's 2050 RTP, "TransPlan50," similarly concludes that increased population and employment growth without additional transportation improvements would result in increased congestion and travel time. With the addition of the proposed freeways in the plan, congestion rises to three times the current delay. A robust transit network, including extension of light rail and double tracking of FrontRunner, are key parts of meeting future travel demand. Specific to the study area, TransPlan50 notes that by 2050, even with additional roadway capacity, anticipated growth reduces service levels on the freeway to highly congested during peak hours. This congestion is notable, especially at geographic chokepoints such as the area around Point of the Mountain, which will experience the worst congestion. TransPlan50 notes that in the future, this area will have more traffic and people traverse it than any other area in the region.

3. PURPOSE AND NEED

The project's Purpose and Need statement was developed to define the objectives to be achieved and identify the underlying problems or conditions that the project should address. When a major transit project seeks potential federal approvals or funding and becomes subject to the National Environmental Policy Act (NEPA), a Purpose and Need statement is often required under federal environmental regulations. Regardless, a clear problem and objectives statement is a key element of the planning process. The statement helps guide decisions about alternatives that should be considered and helps measure their performance.

The stakeholders for the Point of the Mountain Transit were unified from the onset about the need to improve travel and mobility between rapidly growing areas in southern Salt Lake County and northern Utah County. Travel in these areas is constrained by topography, where only a limited number of north-south highways/arterials are available. The existing facilities have high levels of congestion and unpredictable travel times, and they will worsen as the area continues to grow. Aside from using private vehicles, there are few other travel choices for people in the area, and not all existing transit service and station areas are near where some of Utah's most dynamic urban growth and economic development is planned.

3.1.1 Project Purpose

The project purpose is to provide faster, more frequent, and reliable transit service and improved mobility generally along the I-15 corridor to:

- Equitably improve access and mobility between existing and planned centers and development areas in southern Salt Lake County and northern Utah County.
- Connect to the regional transit system.
- Support the long-range transportation demands of planned growth in population and employment in southern Salt Lake County and northern Utah County.
- Support land use and economic development goals in the Point of the Mountain communities and region.

In addition, the project partners seek a transit project that:

- Can be affordably constructed and operated.
- Leverages and is coordinated with existing and planned multimodal transportation facilities and services.
- Supports regional efforts to protect the environment, including air quality and quality of life.

3.1.2 Need for the Project

The need for the project includes the following:

- Roadway congestion is increasing on Interstate 15 (I-15), the primary highway that connects Salt Lake and Utah counties, creating unreliable travel times and affecting automobile travel as well as bus trips.
- To serve the area's growing centers, better access and improved connections are needed between FrontRunner stations, TRAX, and local destinations.
- Regional forecasts for population and employment growth in the Point of the Mountain area show rapid growth over the next several decades, and additional high-quality transit options are needed to help meet future travel demand.
- Regional and local plans focus residential and commercial development and employment in centers with good high-capacity transit and multi-modal transportation systems.
- Environmental and quality of life goals of the state and region include improving air quality through reduced greenhouse gas emissions by reducing total vehicle miles traveled.

4. PUBLIC AND STAKEHOLDER INVOLVEMENT

A robust public and stakeholder engagement program was established to provide input and coordination with project partners throughout the study. This section describes public outreach efforts as well as coordination with stakeholders. A complete description of all activities, including comments received, can be found in Appendix A, Public Involvement Report.

4.1 Public Involvement

Public outreach was organized into three phases throughout the study to solicit targeted feedback at key milestones. Various outreach methods and tools were used to reach a wide audience, including social media, a public-friendly website, news media articles, and various commenting methods. In addition to obtaining public input at three distinct milestones, a statistically valid public survey was also conducted. Although the study period spanned the period when the COVID-19 pandemic disrupted normal public meetings and gatherings beginning in early Spring 2020, including online meetings of stakeholders, the outreach continued to result in high levels of public response.

4.1.1 Public Outreach Period #1 – November 2019

The purpose of this public outreach period was to inform the public of the Point of the Mountain Transit Study kickoff and of project information prepared to date, including project overview, characteristics of the study area, project goals, and potential transit improvements. In addition to providing information, public input was sought on project goals and potential transit improvements. The first public outreach period featured an in-person open house as well as online website and online commenting platforms to solicit public feedback.

A project open house was held on Thursday, November 14, 2019 from 4:30 to 7 p.m. at the American Preparatory Academy (11938 Lone Peak Parkway, Draper, Utah). Ninety-five sign-ins were recorded at the open house. The meeting was held using an open house format where the public could come at any time to view project display boards and maps and interact with project staff. In addition, a presentation was held, which was followed by a question-and-answer session.

The open house notices were placed through a variety of methods, including distribution via partner agencies, media advisories, and social media. In addition, the open house received press coverage in the newspaper and on news radio.

During this first public outreach phase, a project website was established. This website provided project information, open house information, contact information, and a comment form.



SUMMARY OF FEEDBACK

A total of 109 comment forms were received through December 1, 2019. Thirty-one comment forms were recorded at the open house, and 78 comment forms were received via the project email or website. Many of these comment forms contained multiple distinct comments. In addition, verbal feedback was obtained through discussions with the public in attendance. The following key themes emerged from both written and verbal feedback.

Approximately five to ten comments were received about the **proposed project goals**. All comments were supportive of project goals, with the following additions suggested:

- Safety should be added as a project objective.
- Security, cleanliness, and affordability should be considered.

Most comments received were related to the potential **western and eastern transit corridor options**. Several comments expressed general support or opposition to both alignments, and many offered specific rationale for support/opposition, which is summarized below:

- **Support of the western option** – approximately 60 comments:
 - Increased access to destinations and commercial/office locations on the west side of I-15 would bring/generate economic returns and lead to increased ridership.
 - Anticipate that higher ridership on the west side of I-15 could balance out higher project costs.
 - Better access to I-15 and FrontRunner South Jordan and Draper stations.
 - Would serve areas more supportive of higher-density and transit-oriented development.
 - Would add value to the redevelopment of the prison site.
 - Route would be shorter and more direct and would provide better service to the prison site.
- **Support for the eastern option** – approximately 15 comments:
 - More cost-effective to operate in UTA’s right-of-way.
 - Increased access to Draper residents and Utah County residents.
 - FrontRunner serves west side of I-15; extension of TRAX would expand transit options on the east side.
- **Opposition to the eastern option** (these comments tended to be expressed as support of the western option, number not specifically tabulated):
 - Negative effect on property value and proximity to residential property.
 - Increased crime and homelessness in the area.
 - Safety concerns and reduced quality of life.
 - Effects on/removal of Porter Rockwell trail and other open-space amenities.
 - Density is too low to support transit.
- **Opposition to the western option** was noted in only a handful of comments and was generally focused on preference for extending TRAX Blue Line along UTA’s existing right-of-way as opposed to creating a new transit corridor.

In addition to the eastern and western transit options, nearly a dozen commenters offered suggestions related to transit corridors, modes, and improvements.

- **Other transit corridors:**
 - Several commenters suggested that extension of the TRAX Red Line from the southwest side of Salt Lake County to Point of the Mountain would provide east-west connections in addition to serving Point of the Mountain.
 - Several commenters supported better east-west connections between TRAX and FrontRunner.
 - Move TRAX line to west side of I-15 and serve Bluffdale to Lehi and on to Vineyard and Saratoga Springs.
- **FrontRunner related:**
 - Increase frequency and add service on Sunday.
 - Add stop in Bluffdale.
- **Mode related:**
 - Consider effects of autonomous vehicles and consider automated transit options.
 - Support was expressed for BRT and incorporation of first/last mile technologies.

In general, exclusive of alignment specific comments noted above, over 25 comments were received that generally support transit improvements and 2 comments were generally in opposition.

Other comments were received related to topics not specifically covered in the open house materials:

- Timing - need these transit connections now and not decades out.
- Add bus route that serves Suncrest neighborhood.
- Make FrontRunner Draper station more bicycle accessible from southeast Draper.
- Consider bike connections around Point of the Mountain.
- Need to consider parking demand as a result of all transit options considered.
- Build more highways in Point of the Mountain and away from Point of the Mountain.
- Consider free fare to increase ridership.

A map was provided for open house participants to indicate locations where they are traveling from (green dots) and traveling to (red dots) as well as key destinations (yellow dots). This map is shown as Figure 4-1. Patterns emerging from this exercise include:

- Strong clusters of transit trips starting at Front Runner South Jordan and Draper, Sandy Civic Center Station, Draper Town Center, and Highline.
- The majority of transit trips are ending at Thanksgiving Point or north of the study area.
- Key destinations are more dispersed throughout the northern end of the study area and are more clustered around Thanksgiving Point and Traverse Ridge in the southern end of the study area.

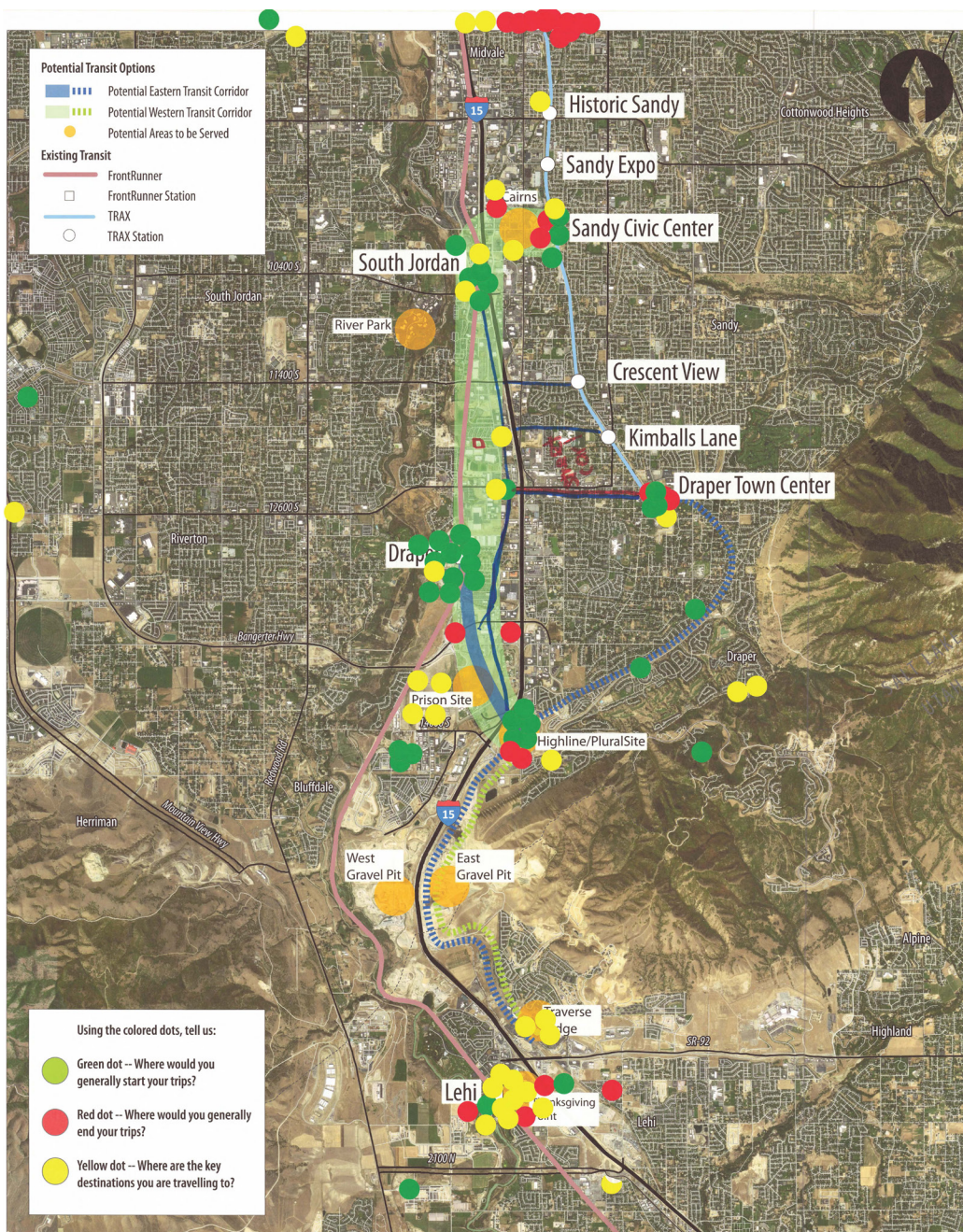


Figure 4-1. Potential Transit Options Mapping Exercise

4.1.2 Public Outreach Period #2 – May 2020

The purpose of the second public outreach period was to provide an overview of the Level 1 alternative evaluation findings and ask for feedback on the alternatives. Due to the COVID-19 pandemic, all public outreach was conducted via online web-based content. Information was presented on each of the five Level 1 alternatives described in Section 6.3 below (LRT West, LRT East, BRT West, BRT East, and EW Connections). A summary of each alternative’s performance in Level 1 screening was also provided.

Public comments were collected from May 8 through June 5, 2020, on the project website, with online comment forms provided on the Project Overview and Alternative Corridors pages. Comments were analyzed and categorized to better understand support and opposition to all five alternative options.

Similar to Public Outreach Period #1, notice of the online comment period was made through various outlets, including distribution via partner agencies, media advisories, and social media.

SUMMARY OF FEEDBACK

In total, 664 comments forms were received from both online forms (the Point of the Mountain Alternative Corridors Feedback Form and the Transit Study Form). Many comment forms contained several unique comments; therefore, comments were coded based on categories to capture the full range of content with each comment form. Several **high-level themes** emerged, including:

- More than half of the comments received were in support of the LRT options compared with the BRT options. Many comments in support of LRT expressed that they would not use either BRT option because LRT is often faster and is not subject to traffic congestion. Twelve comments explicitly expressed favor with LRT options because of the air pollution buses would cause with a BRT.
- More than two-thirds of the comments expressed excitement about expanding public transit, especially LRT, into Utah County.

Response regarding the **LRT East and BRT East** options (Figure 6-3 and Figure 6-5) was high. There were 437 comments expressing opposition to the LRT East option, and 556 comments expressed opposition to the BRT East option. Numerous reasons were given to oppose the eastern alternative transit options, including, but not limited to:

- Public transit would negatively affect wildlife and walking trails in the area, including the Porter Rockwell Trail.
- Significant safety issues would arise if public transit was extended into this area.
- An LRT line in this area would decrease resident home values close to the existing rail line.
- An LRT line in the area would increase noise pollution and vibrations for residents near the existing rail line.

There were 171 comments expressing support of the LRT East option, and 42 comments were made in support of BRT East. Support for LRT East and BRT East included the following reasons:

- Creates additional travel options for driving in Draper.
- Benefits residents of Draper by serving existing residents and new developments and connecting to both TRAX Draper Town Center and FrontRunner Draper.
- Feasible and cost-effective solution that takes advantage of existing UTA right-of-way and would operate mostly outside of traffic and have minimal impacts on traffic.
- Specific to LRT, commentors supported LRT due to the seamless connection to TRAX, higher travel speeds, and best support of growth in the area.
- Specific to BRT, commentors supported the versatility and lower cost of operating bus compared with light rail.

LRT West and BRT West options (Figure 6-2 and Figure 6-4) received the largest number of supportive comments. There were 351 comments expressing support of the LRT West option, and 180 comments were in favor of the BRT West option. There were 287 comments opposing BRT West. Primary support of LRT West and BRT West was expressed due to increased ridership opportunities and support of more density and development west of I-15.

4.1.3 Public Outreach Period #3 – November 2020

The third public outreach period was held to provide an opportunity for the public to learn about and provide feedback on the Common Ground Segment alignment and the two modal options being considered: rail and BRT. Similar to the previous public outreach periods, due to the COVID-19 pandemic,

all public outreach efforts were conducted via the project website, which provided project information, contact information, and a comment form. Similar to prior public outreach, notice of the online comment period was made through various outlets, including distribution via partner agencies, media advisories, and social media.

SUMMARY OF FEEDBACK

A total of 76 comment forms were received during the third comment period, between November 20 and December 9, 2020, all of which were received via the project website. Many of these comment forms contained multiple distinct comments. The comments were similar to those received in earlier phases of public outreach. Almost all of the comments generally support expanding public transit in the area and the Common Ground Segment, for the following reasons:

- Better transit-oriented development opportunities.
- Increased ridership opportunities.
- Connections to the redeveloping prison site and businesses/employment centers.

Many commentors expressed a desire to connect to FrontRunner Lehi. Only two comments explicitly opposed the project as a whole, based on cost and perceived redundancy with existing transit options.

Nearly three-fourths of the comments received were related to the **potential western and eastern transit corridor options previously shared with the public**. Only 2 of the 76 comments expressly preferred **the LRT East and BRT East** options, whereas the remainder of comments expressed opposition to **the LRT East and BRT East** and/or support for **the LRT West and BRT West options**. Preference for the eastern options was based on the perceived cost savings of locating the new rail on existing rail corridor through Draper and the personal benefit to a potential transit user.

Opposition to the eastern alignment was based on the following rationale:

- No or little demand on the east side of I-15.
- Increased crime and homelessness.
- Noise and vibration impacts.
- Negative impact to property values.
- Less direct/longer route.
- Negative impact to existing pedestrian and bicycle trails.
- General incompatibility with residential area.
- Preference for western options.

Preference for the western alignment was based on:

- Proximity to commercial land uses and potential development of prison site.
- Higher demand anticipated.
- Connection to FrontRunner and TRAX.
- Shorter, more direct route.
- Concerns about the eastern options.

Many comments, regardless of preferred alignment or mode, expressed a desire for increased connectivity to existing transportation infrastructure (FrontRunner, TRAX) as well as attention to nonmotorized infrastructure (new and existing).

Less than one-quarter of the comments expressed a clear preference regarding mode type, with nearly twice as many comments supporting or assuming LRT versus BRT. The rationale for supporting BRT was

predominantly based on reduced cost and increased flexibility. Several comments did not identify specific rationale for support of LRT as opposed to BRT, but one cited the ability of light rail to better accommodate future demand and several comments noted that the commenter would not ride BRT but would ride LRT.

4.1.4 Public Survey

As part of the study, UTA undertook a research effort to assess public attitudes and input regarding potential transit improvements in the project study area, which comprises a broad corridor from approximately 9000 South in the Salt Lake Valley to 2100 North in Lehi, bounded roughly by Redwood Road on the west and the developed foothills on the east. This research consisted of two components: a statistically valid survey and a community panel:

- **Statistically valid survey** – The statistically valid survey was completed by nearly 800 study area residents, with a resulting margin of error of plus or minus 3.5 percent at a 95 percent confidence level.
- **Community panel on transit issues** – There were 125 survey respondents who agreed to participate in follow-up research using an online discussion platform. Between 40 and 125 residents spent an average of 25 to 30 minutes completing up to four in-depth activities on key topics: development, travel, public transportation, and transit alternatives.

Detailed findings from the survey and community panel are included in Appendix A, Public Involvement Report.

Key survey findings for the following topics show:

TOPIC: OVERALL DEVELOPMENT IN THE POINT OF THE MOUNTAIN REGION

- Residents of the Point of the Mountain transit study area give high ratings for their current quality of life and want to see it preserved.
- While the majority (60 percent) of area residents feel that the plans for growth and development in the region are headed in the right direction, that opinion is not strongly held. Only 17 percent strongly support, while 40 percent are neutral or do not support.
- Residents have clear priorities for development: maintaining the environment and their quality of life, ensuring mobility, and economic development. At the same time, they also feel that public transportation is an important consideration.

TOPIC: CURRENT TRAVEL AND MOBILITY

- Opinions are clearly divided as to how easy it is to get around within the Point of the Mountain region.
- It is not a surprise, therefore, that most residents feel that the current transportation network is inadequate to support the expected growth in the region.

TOPIC: ACCESS TO AND USE OF PUBLIC TRANSPORTATION

- The majority (58 percent) of residents feel that public transportation is not available from where they live to where they need to go.
- Only one out of three study area residents reports living within a half mile of a bus stop or train station.
- Despite a perception of limited access, the majority of study area residents have used public transportation within the past year. Three out of five area residents have used one or more UTA services within the past 12 months. While use is generally discretionary and infrequent (e.g., special or sporting events, shopping), three out of ten study area transit users use transit to get to work or school.
- An improved public transportation system could lead to increased public transportation use. Four out of five (80 percent) current transit users would continue to use and might use transit more often if service

is improved. Half (51 percent) of those who currently do not use transit would consider using if service is improved.

TOPIC: PRIORITIES FOR TRANSIT SERVICE RESIDENTS WOULD USE

- Travel time (compared with driving) is by far the most important factor in deciding whether to use public transportation.
- Existing service falls short of residents' expectations. The gaps are greatest for access to bus stops and travel time.
- Community panel members indicated that while distance from home to station is more important than distance from station to destination, time from home to transit matters less than time from existing transit to their final destination. That is, they are willing to travel a longer distance or have it take more time (up to 20 minutes) to get from their home to the station than to get from the station or stop to their final destination (up to 10 minutes).
- Community panel members reported that they currently travel an average of 25 to 30 minutes by car to get from their home to work or from their home to downtown Salt Lake City. By contrast, they described a 1-hour transit experience to make the same trip.
- Community panel members suggest they are willing to pay for increased frequency. While only 6 percent would pay \$3.50 for service every 60 minutes, 36 percent would pay \$3.50 for service every 30 minutes and 10 percent would pay \$4.50.

TOPIC: EVALUATION OF TRANSIT ALTERNATIVES

- The detailed ratings show a preference for light rail over BRT. In addition, these ratings suggest that the western alignment is preferred over the eastern alignment. The western alignment is seen as having a greater positive economic impact on the community and more likely to encourage more people living in the study area to use public transportation. Both the eastern and western alignments do equally well in fitting the respondents' personal needs. Participants are also positive about adding east-west connections that leverage FrontRunner, seeing this as a potentially simpler, more immediate solution.
- When asked which of the five alternatives they prefer, there is again a clear preference for light rail over bus rapid transit. On the other hand, there is no clear preference for the western versus eastern alignment. And again, adding east-west connections that leverage FrontRunner does well.
- Lack of support for BRT (compared with light rail) is in part due to lack of awareness and existing uninformed perceptions of BRT.

TOPIC: SUPPORT FOR FUNDING PUBLIC TRANSPORTATION OPTIONS IN THE STUDY AREA

- Study area residents agree that developing public transportation in the region is a good use of public funds. Nearly three out of four study area residents agree that developing public transportation options is a good use of public funds. One-third strongly agree, leading to a positive "level of support."
- Community panel members are well traveled and have clear perceptions of what they perceive to be a "world-class" public transportation that they would like to see in the Point of the Mountain community. Key attributes are "convenience" and "options."

4.2 Stakeholder Engagement

To keep project partners and constituent cities engaged throughout the study process, a Technical Advisory Committee (TAC) and Steering Committee were established to coordinate with jurisdictions and agencies throughout the planning process.

The TAC was composed of technical planning and engineering staff from UDOT, UTA, WFRC, MAG, Salt Lake County, and all participating cities (Sandy, South Jordan, Bluffdale, Draper, and Lehi) and provided technical feedback and recommendations on decision-making to the Steering Committee at key milestones. In addition to public agency staff, several private sector representatives were also included in the TAC.

The Steering Committee was composed of mayors, city managers, and key agency policymakers who provided guidance throughout the process and made decisions at key milestones. The meeting schedule of both the TAC and Steering Committee is summarized in Table 4-1.

Table 4-1. TAC and Steering Committee Summary

Date	Meeting Purpose
Technical Advisory Committee	
August 29, 2019	Kickoff
October 15, 2019	Purpose and Need, evaluation criteria
October 22, 2019	Initial range of alternatives
December 5, 2019	Initial range of alternatives
January 15, 2020	Level 1 screening methods and alternatives
April 9, 2020	Level 1 screening results
June 23, 2020	Level 1b screening results
September 8, 2020	Level 1 recommendation
November 19, 2020	Level 2 recommendation
December 3, 2020	Preferred Alternative recommendation
Steering Committee	
September 16, 2019	Kickoff and project goals
November 13, 2019	Project update and Statement of Project Support signing. Note: This was not a formal Steering Committee meeting but included all agency representatives on the Steering Committee. Meeting convened by WFRC.
December 16, 2019	Level 1 alternatives
April 22, 2020	Level 1 screening results. Note: This was not a formal Steering Committee meeting but included all agency representatives on the Steering Committee. Meeting convened by UTA.
July 16, 2020	Level 1 recommendation. Note: This was not a formal Steering Committee meeting but included all agency representatives on the Steering Committee. Meeting convened by UTA.
September 17, 2020	Level 2 recommendation
December 10, 2020	Preferred Alternative recommendation

At the November 13, 2019, meeting shown above, participating agencies and cities signed a Statement of Project Support to document their support and commitment to the study process (Figure 4-2).

POINT OF THE MOUNTAIN
TRANSIT STUDY

Statement of Partner Support

As a partner in the Point of the Mountain transit study,
 _____ declares its intention to support the transit study process as outlined below. We will make all reasonable efforts to provide input, encourage public participation, and contribute in a collaborative manner with the many jurisdictions and entities involved in this important effort. We recognize the study’s implications for economic development, transportation and the environment, both locally and regionally, and that the study’s findings will endure well past the limited duration of the study itself.

[Date]

 Name

 Title



Figure 4-2. Statement of Partner Support

In addition to TAC and Steering Committee meetings, the project team also met with cities and agencies individually at numerous points and also met with interested stakeholder groups and others throughout the process. A list of these stakeholder engagement activities are listed in Table 4-2. For reference, key milestones for public input and the development of the Public Survey are also included.

Table 4-2. Stakeholder Engagement Activities

Date	Stakeholder Engagement
June 2019	Pre-kickoff with Salt Lake County, Lehi, UDOT, WFRC, MAG; discussed “policy committee”
July 2019	Developed roles of TAC and Steering Committee in the analysis
August 2019	Invited and confirmed membership of TAC and Steering Committee
August 2019 - ongoing	Coordination with WFRC and partners on ridership forecasting (8/27/2019, 9/4/2019, 10/15/2019, 11/18/2019, 12/17/2019, 3/30/2020, 4/23/2020, 5/12/2020, 6/5/2020, 7/1/2020, 7/31/2020, 9/21/2020, 11/13/2020, and others)
August 29, 2019	First TAC meeting - kickoff, agreement on TAC role, input on study goals, local data requested
September 16, 2019	First Steering Committee meeting/workshop - refined, augmented and prioritized study goals
October 15, 2019	Second TAC meeting - Purpose and Need, evaluation criteria
October 22, 2019	Third TAC meeting - evaluation criteria, range of alternatives, open house planning with city support
November 2019	Media, social media promotion - public open house in Draper with 100 attendees (11/14)
November 2019	Meetings with cities to discuss socioeconomic data and land use plans: South Jordan (11/6), Sandy (11/13), Bluffdale (11/15), and Lehi and Draper (11/18)
Nov 13, 2019	Point of the Mountain discussion with policymakers (convened by WFRC) - charter signing
December 5, 2019	Fourth TAC meeting - in-depth discussion of and input on alternatives
December 5, 2019	Met with Adobe
December 16, 2019	Second Steering Committee meeting - review conceptual engineering alternatives, Level 1 evaluation methodology
January-Apr 2020	Briefings by the Transit Study project manager to each city council in the study area: Bluffdale (1/19), South Jordan (2/4), Draper (2/18), Lehi (2/25), and Sandy (4/7)
January 7, 2020	Consultant team met with Sandy City to discuss alternative alignments through city
January 8, 2020	Met with Camp Williams
January 15 2020	Fifth TAC meeting - refinement of alternative concepts
January 16, 2020	Project team land use discussion/coordination with WFRC
February 2020	Invited all TAC, Steering Committee members to provide input to public survey goals
February 5, 2020	Met with POM State Land Authority (POMSLA)
February 28, 2020	Met with Utah County
March 2020	Developed public survey questions
April 2, 2020	Project team land use discussion/coordination with WFRC
April 9, 2020	Sixth TAC meeting - Level 1 evaluation results

April 22, 2020	POM discussion with policymakers (convened by UTA)
April 2020	Launched public survey (random study area sample plus oversample of Lehi and Draper)
May 2020	Invited general public to provide input on Level 1 evaluation via online form - 600+ comments submitted
June 23, 2020	Seventh TAC meeting - Level 1b evaluation review and draft recommendation for Steering Committee
June 2020	Survey complete: 800 responses from random sample; 1,581 total responses include Draper/Lehi oversample
July 2020	Individual meetings with WFRC (7/8), MAG (7/8), Draper (7/14), and Lehi (7/16) to discuss economic development roundtable
July 16, 2020	Policymaker meeting to discuss regional context of transit projects in POM area
August 19, 2020	Roundtable on Economic Development
August 25, 2020	POM/Central Corridor Transit Study Modeling Coordination with UTA, UDOT, WFRC, and MAG
August-September 2020	Conversations with jurisdictions and stakeholders to discuss project progress: Lehi (8/31), MAG (9/2), Bluffdale (9/3), POMSLA (9/3), Sandy (9/3), WFRC (9/3), South Jordan (9/8), and Draper (9/10)
September 8, 2020	Eighth TAC meeting - Level 1 hybrid findings and Common Ground recommendation
September 2020	Met/called all cities to discuss Level 1 updated recommendation in preparation for TAC and Steering Committee meetings
September 17, 2020	Third Steering Committee meeting - Common Ground recommendation
September 28, 2020	POM/Central Corridor Transit Study Team Coordination
September 29, 2020	POM/Central Corridor Transit Study Modeling Coordination with UTA, UDOT, WFRC, and MAG
October 2020	Published survey results in consultation with The Point's own survey results release in October 2020
October 2020	Coordination on station area and land use planning: Draper (10/14), POMSLA (10/16), Lehi (10/19), and GWC Capital, aka Clyde (10/28)
November 2020	Conversations with jurisdictions and stakeholders to discuss project progress: Draper and Lehi (11/12); MAG, POMSLA, and Sandy (11/17); and WFRC (11/18)
November 19, 2020	Ninth TAC meeting - Level 2 findings; recommend locally preferred alternative (LPA) for Steering Committee
November 2020	Held public feedback period for comment on draft LPA; responses validated survey findings
December 3, 2020	Tenth TAC meeting - finalize LPA and recommend for Steering Committee
December 8, 2020	Draper City Council Meeting POM Transit Update
December 10, 2020	Fourth Steering Committee meeting to review/adopt LPA



5. ALTERNATIVE DEVELOPMENT AND EVALUATION PROCESS

5.1 Process Overview

The study utilized a multistep alternatives evaluation process, which included the following steps: prescreening, Level 1, Levels 1b and 1c, and Level 2. The process of alternative development and screening is depicted below (Figure 5-1). Findings from each step of the process are described in Chapters 6-8.

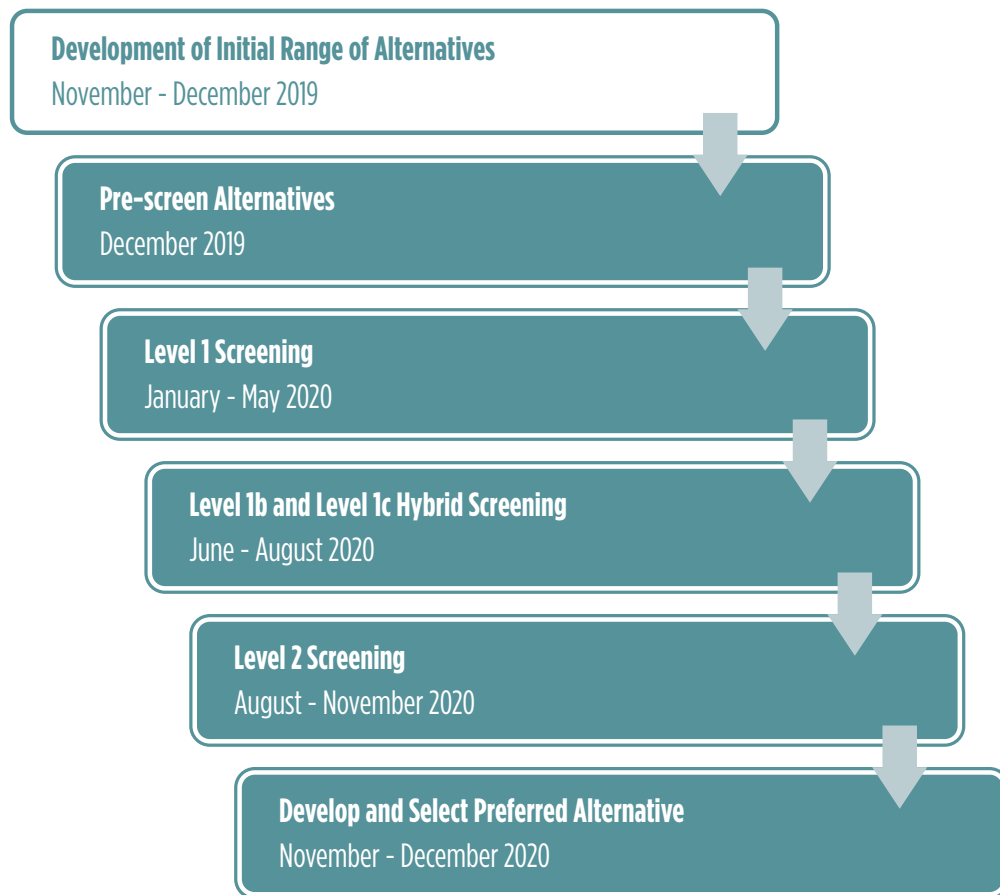


Figure 5-1. Evaluation Process

Each step serves a distinct purpose in helping inform the selection of a Preferred Alternative, as described below:

- **Initial Range of Alternatives** – A full range of alternatives was developed looking at all reasonable corridors and modes.
- **Pre-screening** – This step evaluated each alternative’s ability to meet the project’s Purpose and Need, or its ability to address other problems. Alternatives that do not clearly meet Purpose and Need were eliminated from further consideration.

- **Level 1 Screening** – The alternatives that advanced from prescreening were then developed in greater detail and analyzed using the screening measures shown in Table 5-1 below.
- **Level 1b and Level 1c Hybrid Screening** – Two “sensitivity test” steps were used to evaluate if potential design refinements or “hybrids” of Level 1 alternatives could improve alternative performance prior to starting the Level 2 evaluation.
- **Level 2 Screening** – In addition to the criteria as Level 1, additional factors were added for consideration as part of Level 2 screening. Each alternative was screened using the measures shown in Table 5-1 below.
- **Select Preferred Alternative** – Findings from Level 2, in addition to coordination with project partners and public input, was used to select a Preferred Alternative.

5.2 Evaluation Criteria

Evaluation criteria are used to measure how well an alternative meets the project Purpose and Need. Table 5-1 summarizes the evaluation criteria and measures used in Level 1 and Level 2 alternative screening steps.

Table 5-1. Level 1 and Level 2 Evaluation Criteria

Evaluation Criteria and Measures	Level 1 Criteria	Level 2 Criteria
Transit speed and reliability Measures: -Travel time -Transit operation in exclusive guideway	X	X
Ridership Measure: -Forecasted transit ridership	X	X
Potential to serve existing and planned centers Measure: -Access to existing and planned centers	X	X
Transportation system impacts Measure: -Impacts on traffic circulation	X	X
Promotes bicycle and pedestrian access and connections Measure: -Assessment of bicycle and pedestrian accessibility	X	X
Ease of vehicular access Measure: -Assessment of vehicle accessibility	X	X

Evaluation Criteria and Measures	Level 1 Criteria	Level 2 Criteria
Transit connections Measure: -Ability to directly connect to the local and regional transit network	x	x
Local plan compatibility Measures: -Consistency with adopted plans -Equity (transit dependent populations served) -Displacement risk -Other qualitative factors	x	x
Mixture and density of land uses Measures: -Existing population and employees served (density) -Future (2050) population and employees served (density) -Allowed development (land use mixture and intensity) -Other qualitative factors	x	x
Walkable design Measures: -Percentage of half-mile station area within 10-minute walk of transit, -Block size and street connectivity -Other qualitative factors	x	x
TOD opportunities and economic development Measures: -TOD opportunities -Effective market trade area -Visibility/exposure -Other qualitative factors	x	x
Economic development Measure: -Taxable revenue generated, jobs created, new residents, and other factors		x
Cost considerations Measure: -Rough order of magnitude capital cost	x	x

Evaluation Criteria and Measures	Level 1 Criteria	Level 2 Criteria
Constructability considerations Measures: -Potential construction risks -Availability and potential to use publicly owned right-of-way	x	x
Operational considerations and cost factors Measure: -Consideration of operational elements (e.g. transfers, split service, length of line, cost factors, etc.)	x	x
Timing and implementation considerations Measure: -Potential for expedited project delivery		x
Effects on the natural environment Measure: -Potential impacts on environmental resources	x	x
Potential air quality improvements Measure: -Effect on regional/localized air quality	x	x
Effects on the built environment Measures: -Estimated levels of property impacts -Considerations for ROW availability	x	x
Support equity Measure: -Potential for adverse impacts on low-income or minority populations	x	x
Transit integration options Measure: -Consideration for additional transit integration options outside of Common Ground Segment		x

6. LEVEL 1 ALTERNATIVES EVALUATION

6.1 Initial Range of Concepts

The following initial range of concepts was developed based on previous studies and suggestions received during the TAC workshops, via public comments and emails, and at the November 2019 public meeting. The primary concepts were defined using a “representative alignment” illustrating the primary corridor/alignment characteristics and modes that were suggested. No engineering was performed at this stage of concept development. These concepts are depicted on Figure 6-1 and included:

- **LRT West** – LRT alignment primarily west of I-15.
- **LRT East** – LRT alignment primarily east of I-15 and a spur to connect to FrontRunner Draper across The Point.
- **BRT West** – BRT alignment primarily west of I-15.
- **BRT East** – BRT alignment primarily east of I-15 and a spur to connect to FrontRunner Draper across The Point.
- **EW Connections** – Three east-west core bus routes that provide connections leveraging the South Jordan, Draper, and FrontRunner Lehi stations.
- **SW SL County Connections** – East-west connection from TRAX Red Line to FrontRunner Draper using core bus.

6.2 Pre-screening

As part of this review of the initial range of concepts, the transit study team screened all concepts for their ability to address Purpose and Need. The following measure was used to screen each alternative: Does the alternative satisfy the Purpose and Need Statement? Alternatives that do not meet this statement were eliminated from further consideration.

The following concepts met project Purpose and Need and continued into further analysis as part of Level 1 screening: LRT West, LRT East, BRT West, BRT East, and EW Connections. The pre-screening results for the concepts that were found to meet Purpose and Need are provided in Table 6-1.

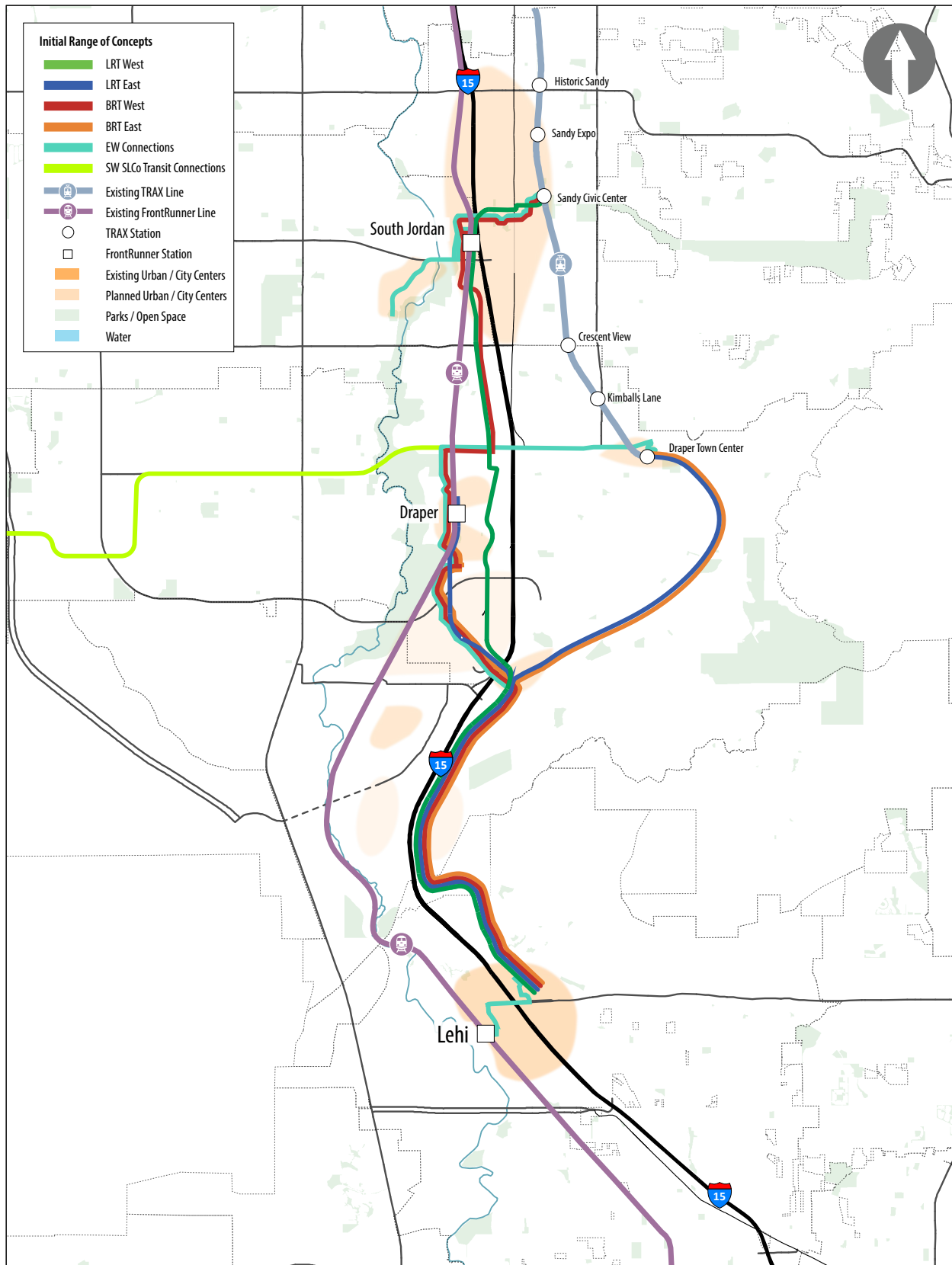


Figure 6-1. Initial Range of Concepts

Table 6-1. Pre-screening Results: Concepts that met Purpose and Need

Purpose and Need Element	Discussion for LRT West, LRT East, BRT West, BRT East, and EW Connections
Improve transit generally along the I-15 corridor to provide faster, more frequent, and reliable north-south transit service	All of the above provide transit improvement for a north-south corridor generally following I-15
Improve access and mobility between existing and planned urban centers and development areas in southern Salt Lake County and northern Utah County	All of the above connect growth areas in southwest and southeast Salt Lake County
Connect to the regional transit system	All connect to the regional transit system via TRAX Blue Line and FrontRunner stations
Support the long-range transportation demands of planned population and employment growth in southern Salt Lake County and northern Utah County	All have a reasonable potential to serve travel demand between growth centers in Salt Lake County and Utah County
Support land use and economic development goals in the Point of the Mountain communities and region	All have a reasonable potential to serve multiple growth areas in the Point of the Mountain communities

The SW SL County Connections concept did not meet Purpose and Need as described in Table 6-2. This concept was suggested in TAC workshop map exercises and in multiple public comments. It features an east-west bus corridor, similar to a corridor recommended through the Southwest Salt Lake County Transit Study, and would use core bus service as recommended in the 2050 Regional Transportation Plan.

Table 6-2. Pre-screening Results: Concepts that did not meet Purpose and Need

Purpose and Need Element	Discussion for the SW SL County Connections concept
Improve transit generally along the I-15 corridor to provide faster, more frequent, and reliable north-south transit service	Does not address – generally improves east-west connections
Improve access and mobility between existing and planned urban centers and development areas in southern Salt Lake County and northern Utah County	Does not directly connect to Utah County, and instead connects growth areas in southwest and southeast Salt Lake County concept
Connect to the regional transit system	Connects to Red Line TRAX and FrontRunner
Support the long-range transportation demands of planned population and employment growth in southern Salt Lake County and northern Utah County	Does not directly address travel demand growth in Utah County
Support land use and economic development goals in the Point of the Mountain communities and region	Potentially serves one growth area (Draper) if extended to serve The Point

Pre-screening Recommendation:

LRT West, LRT East, BRT West, BRT East, and EW Connections concepts meet the project Purpose and Need. Advance these concepts for further development and Level 1 evaluation.

Do not advance SW SL County Connections for further development as part of the Point of the Mountain Transit Study because it does not directly address the purpose and need. An east-west corridor could be compatible with a Point of the Mountain project but would be a separate project and would not alone satisfy the purpose and need without additional north-south transit investments.

6.3 Level 1 Alternatives

Five alternatives were advanced from prescreening into Level 1 screening. For this screening step, representative alignments and potential station area locations were refined to a planning level of conceptual engineering. In addition, subcorridor alignment or operating options were also identified. These suboptions would be explored in more detail for the most promising primary concepts. These alternatives are described in the following sections and shown in Figure 6-2 through Figure 6-6.

LRT WEST

This LRT alignment concept starts at the TRAX Sandy Civic Center Station; crosses to the west of I-15; and includes a mix of at-grade, in-street running, and elevated sections connecting to Lehi (see Figure 6-2). From Sandy Civic Center Station, the representative alignment runs on 10200 South and crosses over I-15. It then turns south along I-15 and crosses over South Jordan Parkway, transitions to in-street running along South Jordan Gateway, and elevates again to cross over 11400 South. The alignment then continues at-grade along Lone Peak Parkway to 125 West to an at-grade crossing at Bangerter Highway and continues into The Point. The representative alignment assumes a transition to an elevated crossing of I-15 to make the grades needed to reach the existing eastside rail corridor owned by UTA. The alignment would continue at-grade south along the existing UTA rail corridor before terminating in Lehi, north of SR-92.

LRT West Key Attributes

Alignment Length: 11.9 miles
Stations served: 8
Percentage transit only operations: 90%

Major Elements:

- Two I-15 major roadway crossings
- Two grade-separated roadway crossings
- Three bridge retrofits/crossings
- Trail realignment/reconnection
- Coordination with ongoing development
- Five transmission line undercrossings
- Steep vertical grades between The Point and I-15 requiring a bridge crossing and structures

LRT EAST

This LRT alignment concept would be developed using the existing UTA-owned rail corridor along the east side of I-15 but would have sections requiring new rights-of-way to serve The Point and FrontRunner Draper (see Figure 6-3). It would depart from the existing TRAX Draper Town Center Station and connect south to The Point and Lehi. The LRT alignment would run in this semi-exclusive right-of-way, crossing streets on existing grade separated bridges, with some sections at-grade with signals.

LRT East Key Attributes

Alignment Length: 12.0 miles
Stations served: 6
Percentage transit only operations: 95%

Major Elements:

- Five bridge retrofits/crossings
- Trail realignment/reconnection
- Coordination with ongoing development
- One transmission line undercrossing
- Steep vertical grades between The Point and I-15 requiring a bridge crossing and structures

After 14600 South, the concept would have two options for serving The Point and Lehi:

- One option would split LRT service into two lines, alternating between serving The Point and the FrontRunner Draper Station, or continuing toward Lehi along the existing UTA rail corridor before terminating in Lehi, north of SR-92.
- The other option would be to operate LRT on a spur, requiring a transfer from the Highline Station for trips to The Point and the FrontRunner Draper Station.

BRT WEST

This BRT alignment concept follows the same representative alignment as LRT West until 12300 South (see Figure 6-4). From there, the alignment turns west and follows the roadway crossing under the FrontRunner railroad tracks to S Galena Park Boulevard, continues south on FrontRunner Boulevard, and continues to The Point. The alignment assumes a transition to an elevated crossing of I-15 to make the grades needed to reach the existing eastside rail corridor owned by UTA. The alignment would continue at-grade south along the UTA rail corridor before terminating in Lehi, north of SR-92. Additional alternative alignment options could be explored in later levels of evaluation for their ability to make other connections including added stations, or because they could provide cost reductions by removing transit exclusive treatments such as grade separation.

BRT EAST

This BRT alignment concept would be developed using the existing UTA-owned rail corridor along the east side of I-15 but would have segments requiring new rights-of-way to serve The Point and FrontRunner Draper (see Figure 6-5). It would depart from the existing TRAX Draper Town Center Station and connect south to The Point and Lehi. BRT would run in this semi-exclusive right-of-way, crossing streets on existing grade separated bridges or at-grade at signals. After 14600 South, the route would split into two lines. One would serve The Point and FrontRunner Draper, and the other would continue south toward Lehi along the existing UTA rail corridor before terminating in Lehi, north of SR-92.

EW CONNECTIONS

This concept includes up to four east-west enhanced transit connections from the east side of I-15 to the existing FrontRunner stations on the west side of I-15 (see Figure 6-6). These enhanced transit connections would mostly use existing public right-of-way but would have more frequent service than existing service and transit-priority treatments to improve speed and reliability. There are four connections: TRAX Sandy Civic Center to FrontRunner South Jordan, TRAX Draper Town Center to FrontRunner Draper, FrontRunner Draper to The

BRT West Key Attributes

Alignment Length: 12.8 miles
Stations served: 10

Percentage transit only operations: 70%

Major Elements:

- Two I-15 major roadway crossings
- Two grade-separated roadway crossings
- Trail realignment/reconnection
- Coordination with ongoing development
- Steep vertical grades between The Point and I-15 requiring a bridge crossing and structures

BRT East Key Attributes

Alignment Length: 12.0
Stations served: 6

Percentage transit only operations: 80%

Major Elements:

- Five bridge retrofits/crossings
- Trail realignment/reconnection
- Coordination with ongoing development
- One transmission line undercrossing
- Steep vertical grades between The Point and I-15 requires a bridge crossing and structures

EW Connections Key Attributes

Alignment Length: 9.5 miles
Stations served: 19

Percentage transit only operations: 15%

Major Elements:

- I-15 separated roadway crossing in Sandy
- Coordination with ongoing development
- Steep vertical grades between The Point and I-15 requires a bridge crossing and structures

Point and Highline City Center, and FrontRunner Lehi to Lehi (Traverse Mountain) in the existing UTA-owned rail corridor, located north of SR-92 and east of I-15.

From the TRAX Sandy Civic Center Station to the FrontRunner South Jordan Station, the representative alignment utilizes the existing street grid along Creek Run Way and 10200 South to I-15. At I-15, the alignment crosses over I-15 and the existing railroad tracks to meet grade at the South Jordan Gateway. It then continues to the FrontRunner South Jordan Station and utilizes the current station amenities to serve the station area.

From the TRAX Draper Town Center Station to FrontRunner Draper Station, the representative alignment utilizes the existing street grid along Draper Parkway/12300 South to connect east-west until Galena Park Boulevard. It then continues south along FrontRunner Boulevard to the FrontRunner Draper Station and utilizes the current station amenities to serve the station area.

From the FrontRunner Draper Station, the representative alignment utilizes the existing street grid along FrontRunner Boulevard and Vista Station Boulevard to connect into The Point. The representative alignment assumes a transition to an elevated crossing of I-15 to make the grades needed to serve Highline City Center and reach the existing eastside rail corridor.

From the FrontRunner Lehi Station, the representative alignment utilizes the existing street grid along Ashton Boulevard and Club House Drive/SR-92 to connect to the existing eastside UTA rail corridor, north of SR-92. The main access to the site would be from North Frontage Road.

This concept does not presume other investments needed to improve FrontRunner train service frequencies as identified in UTA's *Future of FrontRunner Study*.

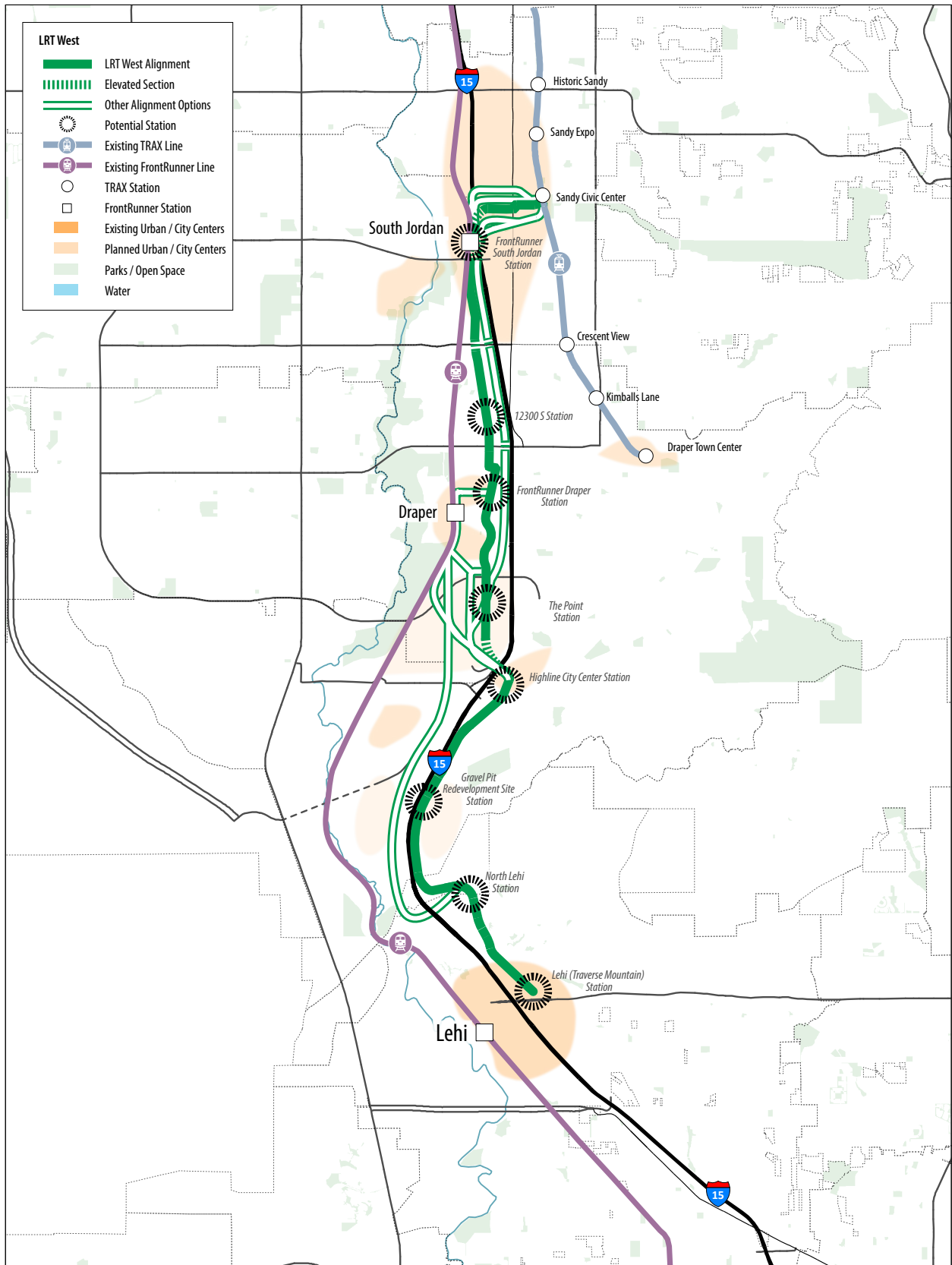


Figure 6-2. LRT West

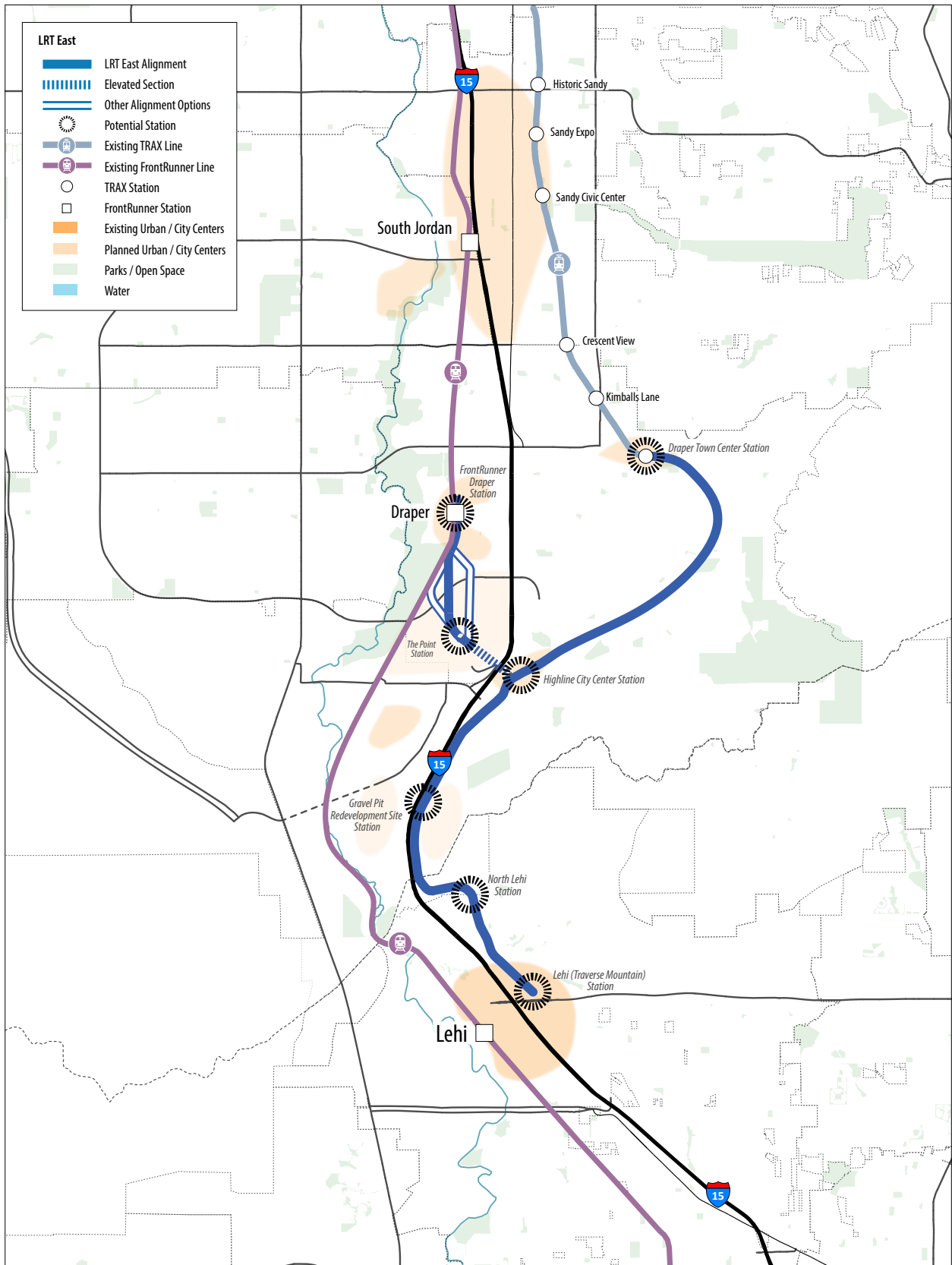


Figure 6-3. LRT East

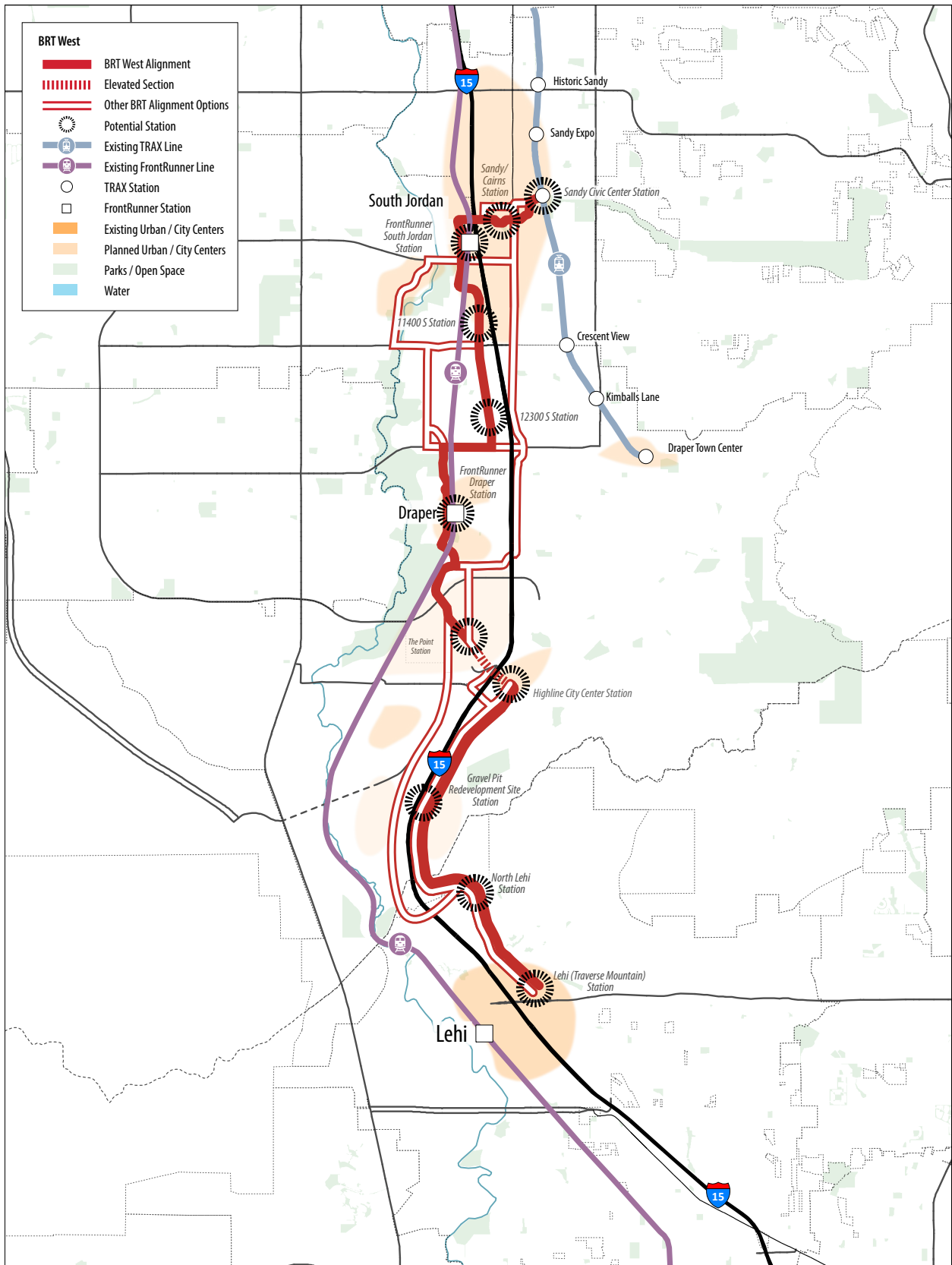


Figure 6-4. BRT West

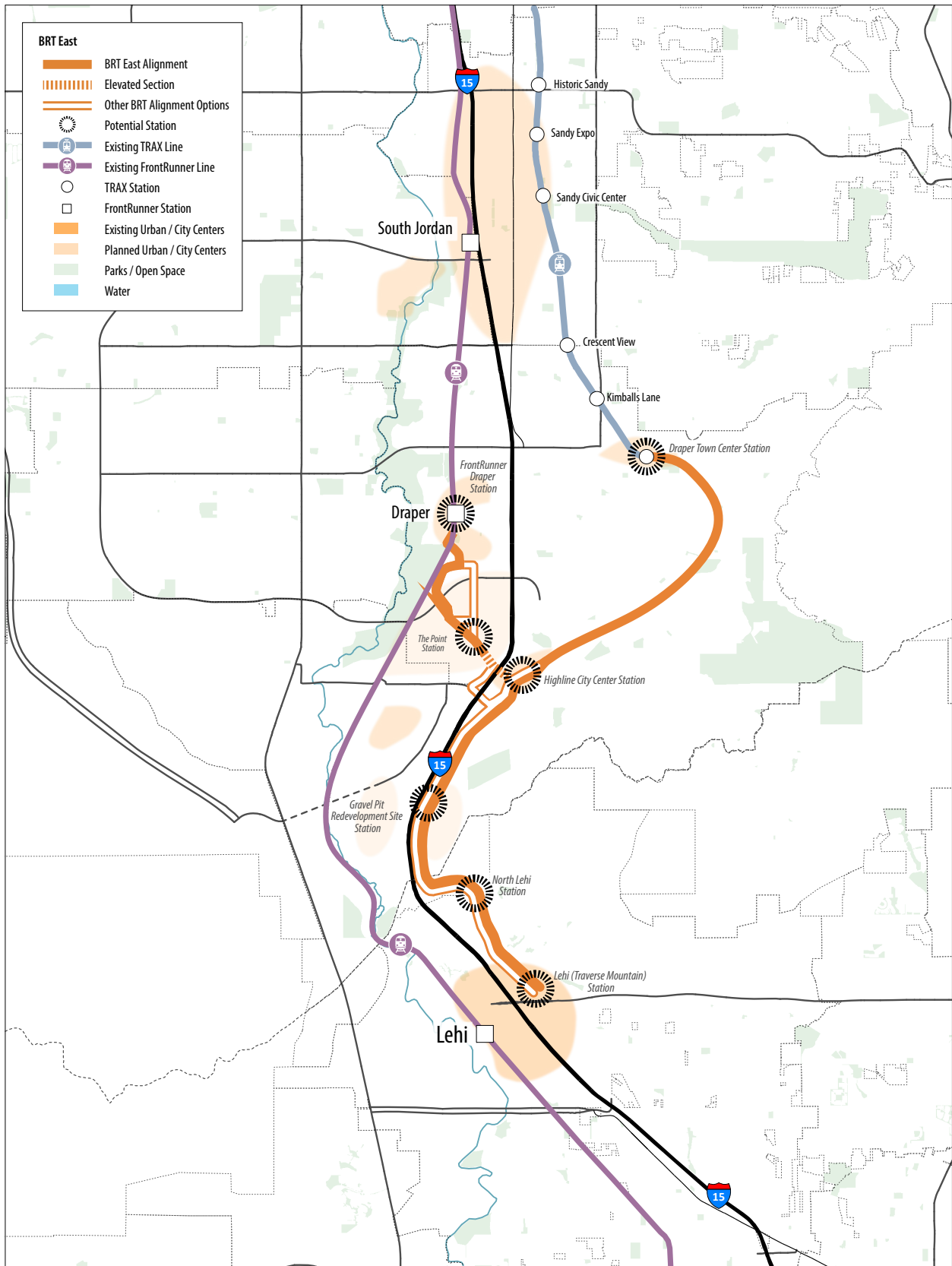


Figure 6-5. BRT East

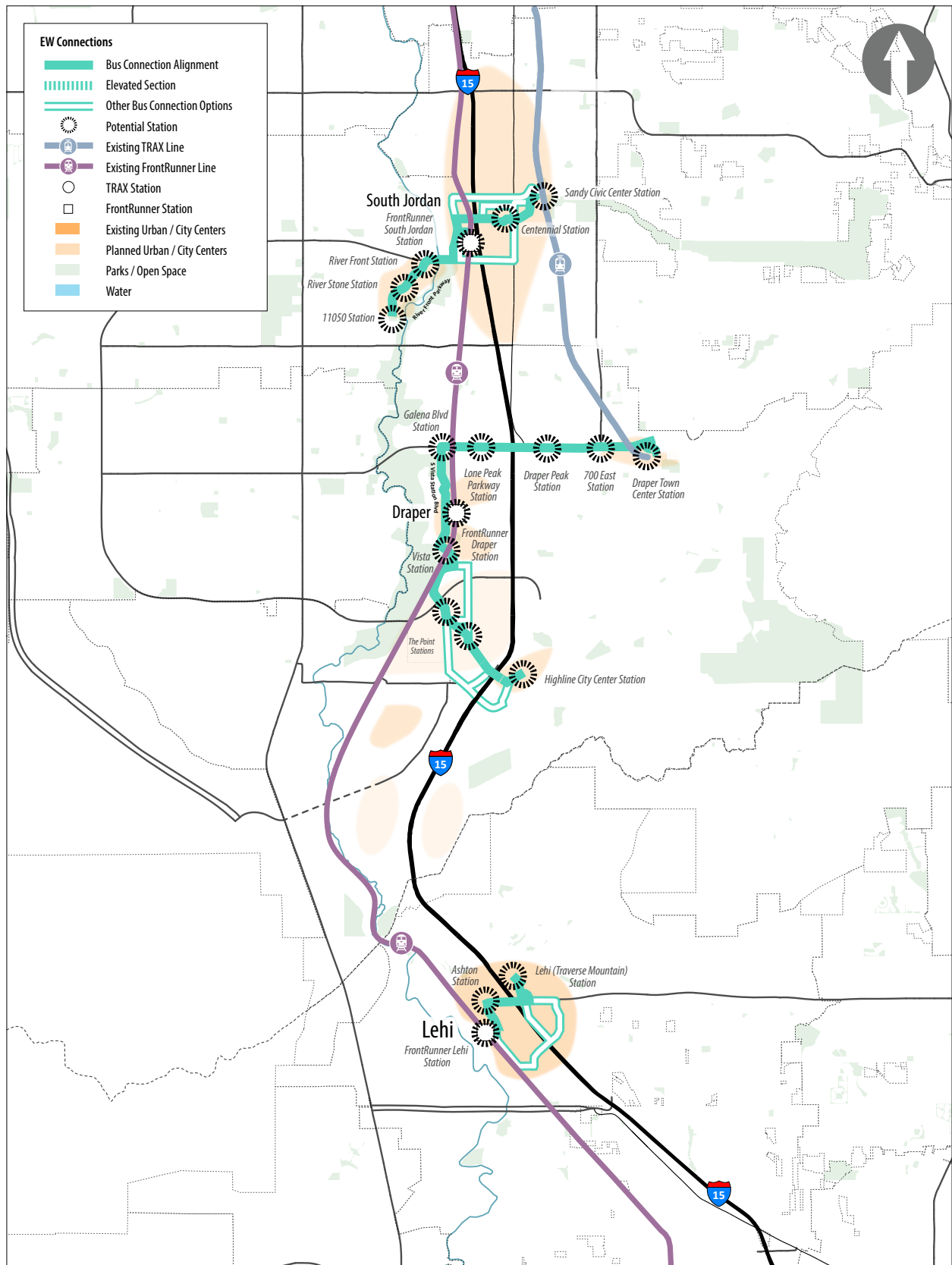


Figure 6-6. EW Connections

6.4 Level 1 Screening

6.4.1 Level 1 Evaluation Findings

The five alternatives were screened using the evaluation criteria shown in Table 5-1. The full detailed Level 1 evaluation ratings can be found in Appendix B. A snapshot of the ratings can be found in Figure 6-7.

The Level 1 alternative evaluation included the screening of nearly 20 individual criteria to help paint an initial picture of each alternative and its ability to meet the project purpose and need. While several of these evaluation criteria showed relatively similar performance between alternatives (where all alternatives scored moderate to higher performing), several criteria offered greater differentiation between alternatives (ranging from lower to higher performing). A summary of how evaluation criteria provided differentiation between alternatives is summarized in Table 6-3.

Table 6-3. Summary of Differentiating Factors

	Evaluation criteria that showed greater differentiation between alternatives	Evaluation criteria that show limited differentiation between alternatives
Transportation and transit system related criteria	<ul style="list-style-type: none"> • Transit speed • Transit reliability • Ridership • Transportation system impacts 	<ul style="list-style-type: none"> • Potential to serve existing and planned centers • Promotes multimodal access and connections • Ease of vehicular access • Transit connections
Land use criteria	<ul style="list-style-type: none"> • Community compatibility • Mixture and density of land uses • Walkable design • TOD opportunities and economic development 	<ul style="list-style-type: none"> • None
Cost, operation and environmental Criteria	<ul style="list-style-type: none"> • Cost considerations • Constructability considerations • Operational considerations • Effects on the built environment 	<ul style="list-style-type: none"> • Effects on the natural environment • Potential air quality improvements • Support equity

Draft Level 1 Summary of Evaluation Ratings

EVALUATION CRITERIA • MEASURE	ALTERNATIVES				
	LRT WEST	LRT EAST	BRT WEST	BRT EAST	EW CONNECTIONS
RATING KEY					
Transit System Performance Criteria					
Transit Speed	Medium Green	Dark Green	Light Green	Medium Green	Light Green
Transit Reliability	Medium Green	Dark Green	Light Green	Medium Green	Light Green
Ridership	Dark Green	Medium Green	Light Green	Medium Green	Light Green
Access and Mobility Criteria					
Potential to Serve Existing and Planned Centers	Medium Green	Light Green	Light Green	Medium Green	Dark Green
Transportation System Impacts	Light Green	Medium Green	Light Green	Medium Green	Dark Green
Promotes Bike/Ped Access and Connections	Medium Green	Light Green	Light Green	Medium Green	Dark Green
Ease of Vehicular Access	Dark Green	Light Green	Light Green	Medium Green	Dark Green
Transit Connections	Medium Green	Light Green	Medium Green	Medium Green	Dark Green
Land Use Criteria					
Local Plan Compatibility ¹	Light Green	Dark Green	Light Green	Dark Green	Light Green
Mixture and Density of Land Uses ¹	Light Green	Light Green	Light Green	Light Green	Dark Green
Walkable Design ¹	Light Green	Light Green	Light Green	Light Green	Dark Green
TOD Opportunities and Economic Development ¹	Dark Green	Light Green	Light Green	Light Green	Medium Green
Cost, Constructability, and Operational Criteria					
Cost Considerations ²	Light Green	Light Green	Light Green	Medium Green	Dark Green
Constructability Considerations	Light Green	Light Green	Light Green	Medium Green	Dark Green
Operational Considerations	Light Green	Light Green	Light Green	Medium Green	Dark Green
Natural and Built Environment Criteria					
Effects on the Natural Environment	Light Green	Medium Green	Light Green	Medium Green	Dark Green
Potential Air Quality Improvements	Medium Green	Medium Green	Medium Green	Medium Green	Dark Green
Effects on the Built Environment	Light Green	Medium Green	Light Green	Medium Green	Dark Green
Support Equity	Medium Green	Dark Green	Light Green	Dark Green	Dark Green

¹ Rating takes into account all stations along alignment, see supporting documentation for performance by station

² Capital cost range based on representative alignment which includes an allowance for real estate and soft costs, but does not include vehicle costs, maintenance facilities, operations, or station programming elements

Figure 6-7. Summary of Level 1 Ratings

Table 6-4 below summarizes the alternatives reviewed in Level 1 and the potential high-level advantages and disadvantages for each alternative for the evaluation criteria that provided differentiation.

Table 6-4. Level 1 Alternatives Advantages and Disadvantages

Alternative	Level 1 Differentiating Evaluation Criteria
LRT West	<p>Potential Advantages</p> <ul style="list-style-type: none"> • Moderate operating speeds and travel times • Moderate transit reliability • Highest ridership • Moderate performance for mixture and density of land uses • Moderate performance in walkable design • Best performance in TOD opportunities and economic development <p>Potential Disadvantages</p> <ul style="list-style-type: none"> • Larger impacts to the surrounding roadway network (traffic circulation) • Least amount of community compatibility • Highest construction costs • Higher constructability considerations • Moderately high operational challenges • Greatest impact to built environment through property acquisition needs
LRT East	<p>Potential Advantages</p> <ul style="list-style-type: none"> • Highest operating speeds and fastest travel times • Highest transit reliability • High ridership • Impacts to surrounding roadway network (traffic circulation) are minimized • Greatest amount of community compatibility • Moderate constructability considerations • Moderate to low impact to built environment through property acquisition needs <p>Potential Disadvantages</p> <ul style="list-style-type: none"> • Lowest performance for mixture and density of land uses • Low performance in walkable design • Low performance in TOD opportunities and economic development • High construction costs • Highest operational challenges

BRT West	<p>Potential Advantages</p> <ul style="list-style-type: none"> • Moderate ridership • Performs well for mixture and density of land uses • Moderate performance in TOD opportunities and economic development • Moderate construction costs • Fewest operational challenges • Good performance in walkable design <p>Potential Disadvantages</p> <ul style="list-style-type: none"> • Slower operating speeds and travel times • Low transit reliability • Larger impacts to the surrounding roadway network (traffic circulation) • Low community compatibility • Moderately high constructability considerations • Greater impact to built environment through property acquisition needs
BRT East	<p>Potential Advantages</p> <ul style="list-style-type: none"> • High transit reliability • Impacts to surrounding roadway network (traffic circulation) are mostly minimized • Greatest amount of community compatibility • Lower construction costs • Fewer constructability considerations • Moderate operational challenges • Lowest impact to built environment through property acquisition needs <p>Potential Disadvantages</p> <ul style="list-style-type: none"> • Slower operating speeds and travel times • Lower ridership • Lowest performance for mixture and density of land uses • Lowest performance in walkable design • Low performance in TOD opportunities and economic development

EW Connections	<p>Potential Advantages</p> <ul style="list-style-type: none"> • Impacts to surrounding roadway network (traffic circulation) are minimized • Best performing for mixture and density of land uses • Best performance in walkable design • Good performance in TOD opportunities and economic development • Lowest construction costs • Fewest constructability considerations • Fewest operational challenges • Low impact to built environment through property acquisition needs <p>Potential Disadvantages</p> <ul style="list-style-type: none"> • Slowest operating speeds and travel times • Lowest transit reliability • Low community compatibility • Lowest ridership
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Key Observations and Recommendation from Level 1 Screening

The five alternatives showed a wide variety of performance across many criteria. No alternatives showed distinctly strong performance across all criteria. The alternatives that showed best transit system performance (namely ridership) had significant capital costs and showed poor performance with either construction, operational, and/or built environmental impacts. Additional analysis was recommended to explore ways to reduce costs and maintain and/or improve alternative performance.

6.4.2 Level 1b Hybrid Development and Findings

Based on the lack of emergence of best-performing alternatives in Level 1 Screening, a “sensitivity test” step was added to Level 1 to evaluate if potential design refinements or “hybrids” could improve alternative performance prior to starting the Level 2 screening. Hybrids or design option refinements were explored specific to each discrete Level 1 alternative and based on recommendations from the TAC. This step was called “Level 1b.”

Table 6-5 briefly describes the Level 1b hybrid refinements, with information on how they were expected to perform compared with one of the original five alternatives for several key differentiating factors. A full screening, using all Level 1 evaluation criteria, was not performed. As described in Table 6-5, key differentiating factors were explored in order to show substantive differences between alternatives and hybrid options.

Table 6-5. Level 1b Hybrid Description and Findings

Hybrid/Option	Description and Purpose	Key Findings
LRT West Hybrids		
LRT/BRT Mode Hybrid	To explore possible cost saving opportunities, this option connects directly to FrontRunner Draper station (currently requires a walk) and utilizes BRT from the prison redevelopment site to Lehi. This option is depicted in Figure 6-8	<p>Ridership – Ridership is reduced substantively for the hybrid LRT/BRT option and improvements in ridership are not likely with the Porter Rockwell option</p> <p>Cost – Cost reductions for the LRT/BRT hybrid option are small compared to the large reduction in ridership. Porter Rockwell option would be substantially more expensive with limited opportunities to increase ridership.</p>
Porter Rockwell Option	<p>This option is a subalignment west of I-15 that was evaluated to avoid bisecting The Point and to serve Bluffdale before crossing east of I-15 to Lehi.</p> <p>This option is depicted in Figure 6-8.</p> <p>Additional feasibility information is provided in the Porter Rockwell feasibility memo included as Appendix C.</p>	<p>Constructability – Project construction of the LRT/BRT hybrid option would require less overall system work since BRT construction is less complex than LRT. Constructability of the Porter Rockwell option would be more complex and more costly.</p> <p>Transit Speed – Both options see large increases in travel times</p>
LRT East Hybrids		
Hybrid Option 1	<p>Explore ridership benefits and cost savings of a hybrid of LRT/BRT option. This concept includes LRT to Lehi, with a BRT spur from FrontRunner Draper Station to The Point and Highline.</p> <p>This option is shown in Figure 6-9.</p>	<p>Ridership – Reduced an estimated 15-20% compared to LRT East, but still performs better than BRT West, BRT East, and EW Connections.</p> <p>Cost – Cost is reduced 5-30% compared to LRT East</p>
Hybrid Option 2	<p>Explore ridership benefits and cost savings of a hybrid of LRT/BRT option. This concept includes LRT to Highline, The Point, and FrontRunner Draper, with a BRT spur from Highline to Lehi.</p> <p>This option is shown in Figure 6-9.</p>	<p>Constructability – Project construction would require less overall system work since BRT construction is less complex than LRT.</p>

BRT East Option		
Higher speed option	<p>This concept was developed to explore potential for improvement if travel speeds are increased.</p> <p>No changes were made to alignment as depicted in Figure 6-5.</p>	<p>Transit Speed - Travel times would decrease slightly (2 minutes)</p> <p>Ridership - Ridership may increase slightly</p> <p>Cost - Cost differences are likely negligible</p> <p>Most key differentiating factors would perform similarly for the 45 mph and 55 mph options</p>
EW Connections Option		
BRT Option	<p>Upgrade to BRT quality transit service (currently enhanced bus) to improve transit priority/reliability.</p> <p>No changes were made to the alignment shown in Figure 6-6.</p>	<p>Transit speed, reliability, and ridership - These factors would all see an increase in performance with this option.</p> <p>Cost, constructability effects, and effects on the built environment - The cost of the BRT option is estimated to nearly triple compared to the enhanced bus option. In addition, both constructability concerns and adverse effects on the built environment increase substantively.</p>

Key Observations and Recommendation from Level 1b Screening

Hybrid mode and other option considerations for LRT/BRT East likely offer the best potential for reducing costs and maintaining alternative performance. Additional options should be explored further. Options explored for LRT West and EW Connections should not be considered further.

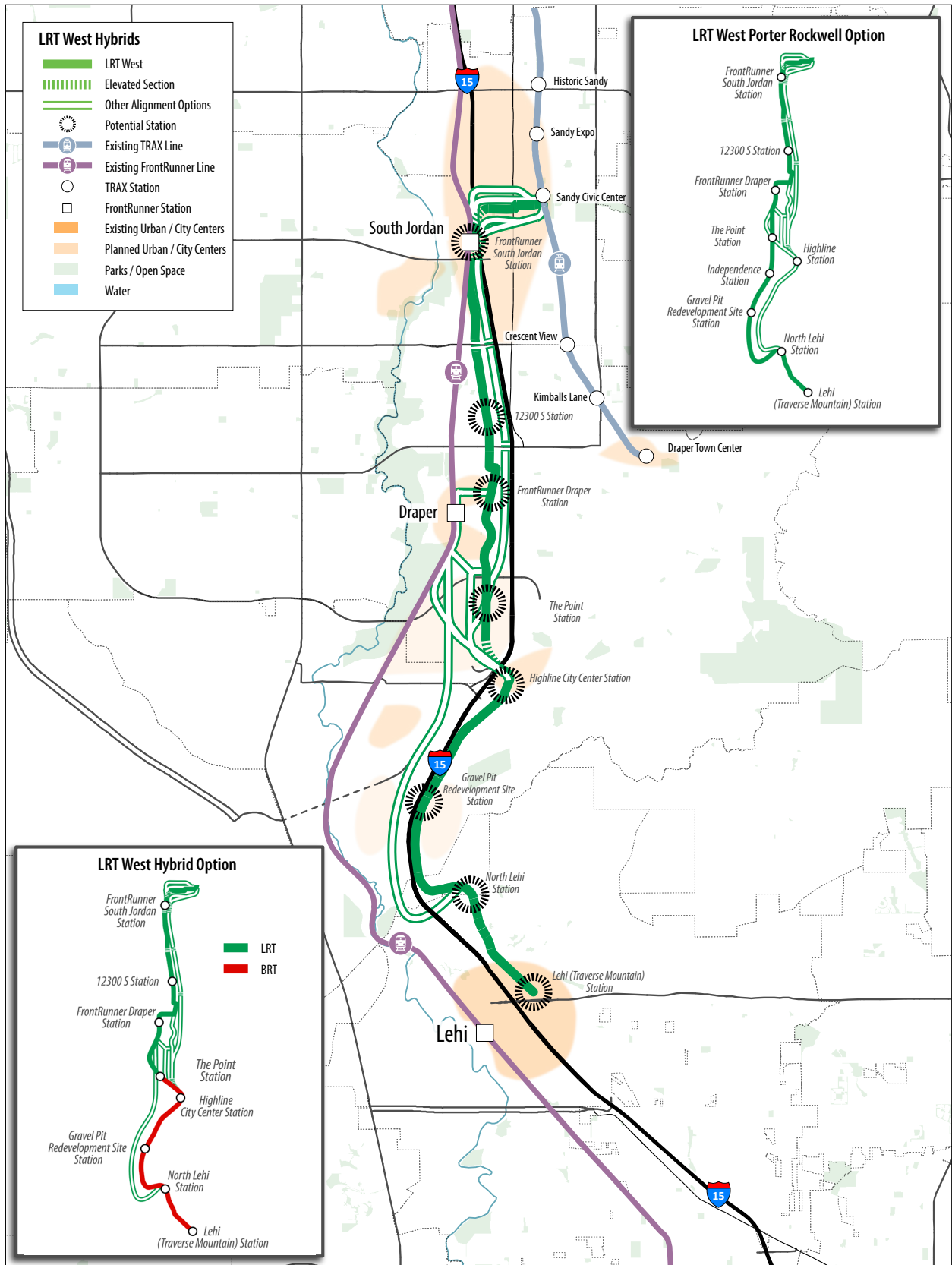


Figure 6-8. LRT West Hybrids

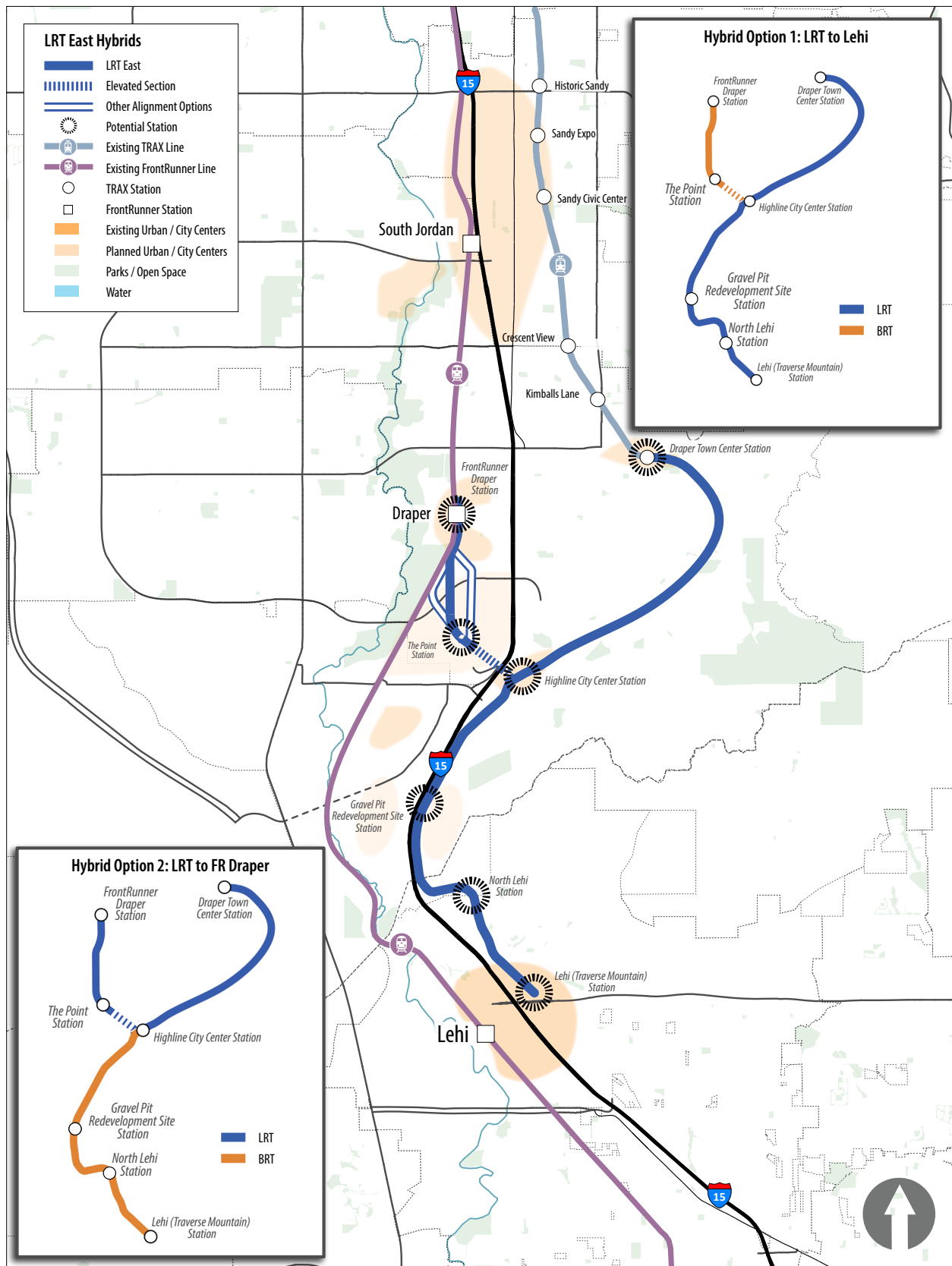


Figure 6-9. LRT East Hybrids

6.4.3 Level 1c Hybrid Development and Findings

Building on findings from Level 1b, an additional “sensitivity test” step was performed to evaluate if potential design refinements or “hybrids” could improve alternative performance. This step was called “Level 1c.” A high-level review of effects on ridership and cost were considered in Level 1c for the options explored.

Table 6-6 briefly describes the two hybrid refinements considered in Level 1c, with information on how they are expected to perform compared with one of the original five alternatives for cost and ridership.

Table 6-6. Level 1c Hybrid Description and Findings

Hybrid/Option	Description and Purpose	Key Findings
BRT Dual Corridors	This option utilized two BRT lines to Lehi, one from FrontRunner Draper and the other from Draper Town Center. This hybrid option is shown in Figure 6-10.	Cost and ridership – This hybrid has nearly similar cost as BRT East with slightly increased ridership.
BRT East Hybrid	This concept was a BRT/rail hybrid option for an initial rail investment starting at the FrontRunner Draper Station (rather than at Sandy Civic Center) and connecting south to The Point, and Highline. The concept would also have BRT from Draper Town Center to Lehi. Rail feasibility in this option was also explored. This hybrid option is depicted in Figure 6-11.	Cost and ridership – This option would have higher costs and lower ridership than BRT East.

Key Observations and Recommendation from Level 1c Screening

The key finding from Level 1c was the emergence and identification of a shared alignment between all Level 1 alternatives. This shared segment runs from FrontRunner Draper to Lehi and is referred to hereafter as the “Common Ground Segment.”

This common segment from the FrontRunner Draper Station to Lehi connects the stations/areas with the strongest economic development and transit-oriented development potential without duplicating the FrontRunner corridor from South Jordan to FrontRunner Draper. Further discussion of the Common Ground Segment is provided in Section 6.5.

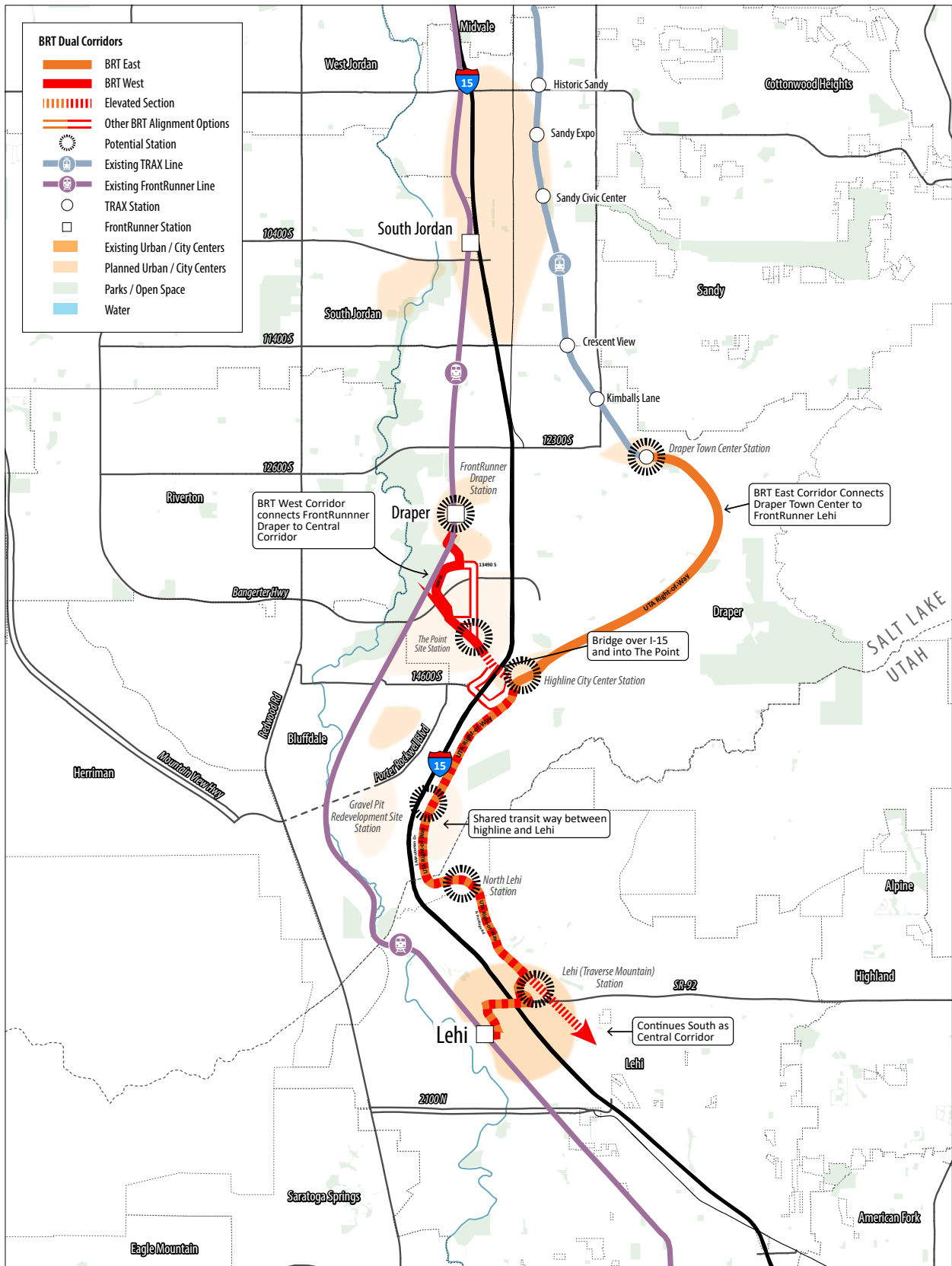


Figure 6-10. BRT Dual Corridors

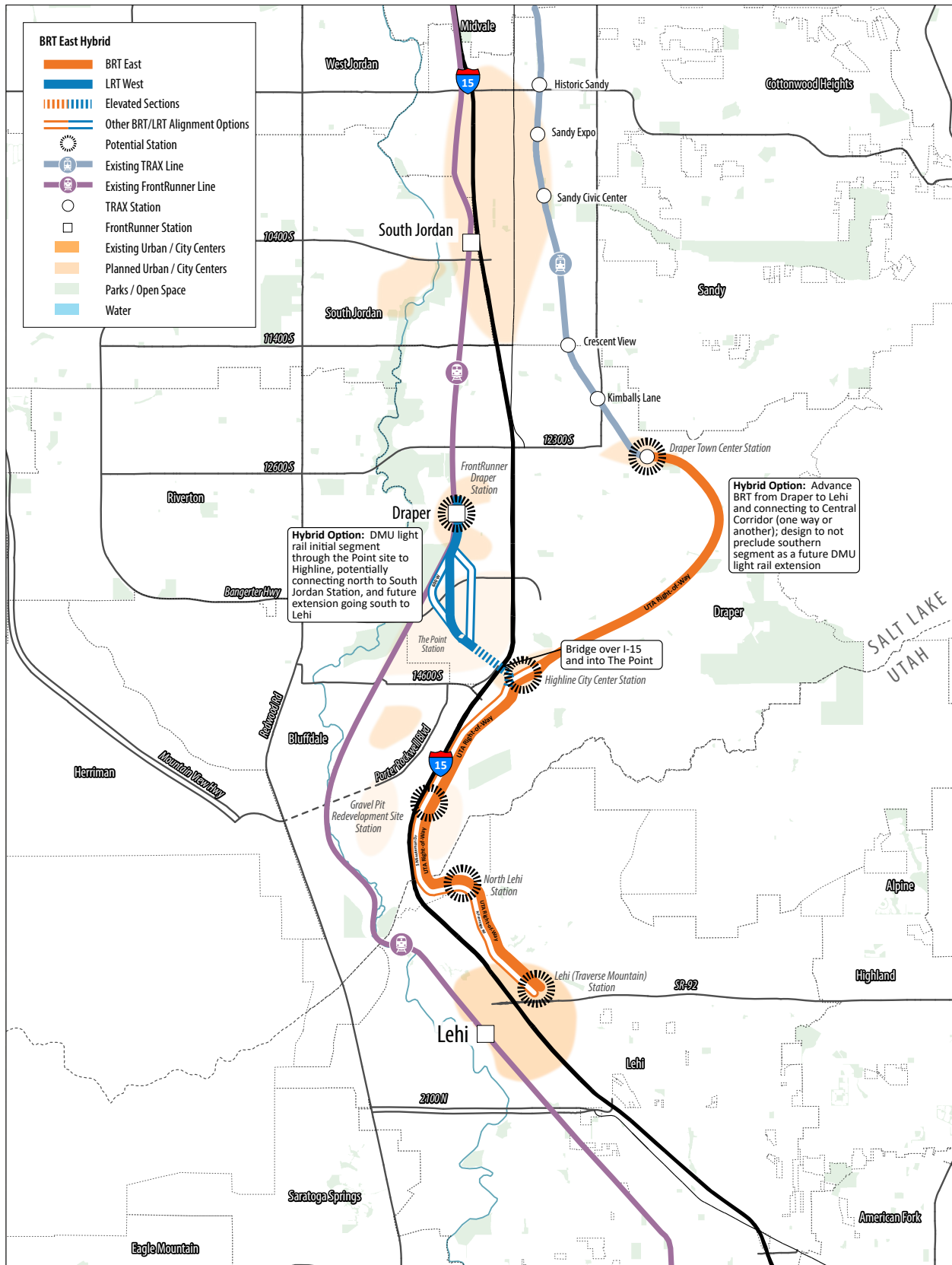


Figure 6-11. BRT East Hybrid

6.4.4 Summary of Level 1, Level 1b, and Level 1c Findings

The following summarizes the key findings from the technical analysis for each alternative evaluated in Level 1, Level 1b, and Level 1c, and provides a recommendation for each alternative as part of the Level 2 alternative evaluation.

LRT WEST

- **Level 1 evaluation:** This alternative has the highest ridership; however, it is the most expensive, has the highest level of built environment impacts, and is the most complex to construct.
- **Level 1b evaluation:** An option was explored to reduce costs by utilizing a hybrid of LRT and BRT. However, this option substantially reduced ridership while offering limited cost savings (the alternative would still be the most expensive).
- **Level 1c evaluation:** Explored a rail-hybrid option for an initial rail investment starting at the FrontRunner Draper Station (rather than at TRAX Sandy Civic Center) and connecting south to The Point, Highline, and potentially Lehi. This helped form the basis of a proposal for a Common Ground Segment.
- **FINDING/RECOMMENDATION:** The full LRT West or an LRT/BRT West Hybrid alternative would have higher costs and lower ridership than projects that typically receive federal funding. **Consider developing rail options for the Common Ground Segment in Level 2.**

LRT EAST

- **Level 1 evaluation:** This alternative had the second-highest ridership and was the second most expensive. The alternative utilizes UTA's right-of-way and therefore would have very low impacts to the built environment and would be easier to construct. Opposition has been expressed from residents living near the north segment of this potential alignment.
- **Level 1b evaluation:** Similar to LRT West, options were explored to reduce costs by utilizing a hybrid of LRT and BRT. Both options explored other opportunities to reduce capital costs with only slight decreases in ridership.
- **FINDING/RECOMMENDATION:** LRT East or an LRT/BRT East Hybrid would have higher costs and lower ridership than projects that typically receive federal funding. Consider the northern segment from Highline to Draper Town Center as a compatible phased future addition to a Common Ground Segment. Similar to LRT West, **consider developing rail options for the Common Ground Segment in Level 2.**

BRT WEST

- **Level 1 evaluation:** This alternative performed moderately well for many evaluation criteria, including ridership and cost.
- **Level 1b evaluation:** No options were explored in Level 1b.
- **FINDING/RECOMMENDATION:** Continue to consider as part of a phased implementation approach, compatible with a Common Ground Segment. **Develop a BRT option in the Common Ground Segment.**

BRT EAST

- **Level 1 evaluation:** Although a lower-cost alternative, this alternative had low ridership and reduced performance for other evaluation criteria compared with other alternatives.

- **Level 1b evaluation:** A higher-speed option was considered, but even traveling at faster speeds, travel times were only slightly improved and would only slightly increase ridership.
- **Level 1c evaluation:** Tested option to run two BRT lines to Lehi: one from FrontRunner Draper and the other from Draper Town Center. Developed and tested a rail/BRT hybrid concept, with a short rail segment between FrontRunner Draper and Highline, and BRT from Draper Town Center and Lehi.
- **FINDING/RECOMMENDATION:** Continue to consider as part of a phased implementation approach, compatible with a Common Ground Segment. Similar to BRT West, **develop a BRT option in the Common Ground Segment.**

EW CONNECTIONS

- **Level 1 evaluation:** This alternative (using enhanced bus) performed well for many evaluation criteria, including cost, land use, and impacts to the built environment; however, it had low ridership and poor performance for other key transit performance criteria (transit speed and transit reliability).
- **Level 1b evaluation:** A BRT option was explored to improve ridership and other transit system performance measures. Utilizing BRT instead of enhanced bus increases transit speed, reliability, and ridership. However, the cost of the BRT option is estimated to nearly triple compared with the enhanced bus option. In addition, both constructability concerns and adverse effects on the built environment would increase with the higher level of semi-exclusive or priority operations.
- **RECOMMENDATION:** This alternative as a full project would not advance to Level 2, but elements such as the Sandy-South Jordan Circulator should be explored as part of other future transit phasing options in the Point of the Mountain area.

6.4.5 Additional Level 1 Considerations

In addition to technical analysis of Level 1 alternatives, several additional project activities – including public involvement, coordination with project partners, and an economic roundtable event – were also a part of the Level 1 work program.

PUBLIC INPUT

A public involvement period was held to gather feedback on the Level 1 alternatives and screening. Nearly 700 comments were received during this time. Additional information is presented in Chapter 4; however, several key findings were notable toward the development of Level 2 alternatives:

- Strong support for transit investment, particularly connection to Utah County.
- Support and concern expressed for all alternatives; residents along the eastern alignments (particularly from Draper Town Center to Highline City Center stations) expressed the most concerns.
- Greater support for LRT over BRT due to perception of bus “stuck in traffic.” This public sentiment led to the emphasis on development of a “gold-standard” BRT service.

PROJECT PARTNER COORDINATION

During Level 1 screening, the project team held several one-on-one meetings with project partners to discern preferences on alternatives and desires on alternatives to be evaluated in Level 2. From these meetings, the following additional observations were made:

- Economic development benefits are a critical driver for the project.
- Project partners emphasized urgency for providing a transit solution and advocated for a transit solution that could be implemented as rapidly as possible.

In addition, the project team coordinated with Draper and Lehi as cities along the Common Ground Segment to confirm the identified station locations as the primary destinations to be served and developed “Station Area Portraits” that provided an overview of the opportunity at each station. These are described further in Chapter 8.

ECONOMIC DEVELOPMENT ROUNDTABLE

To further flesh out economic development considerations in the study area, the project team held an Economic Development Roundtable. The event brought together national and local economic development experts and developers to discuss the interface between the transit planning process and economic development opportunities in the study area. Notable points from the event include:

- Timing and certainty of transit connections support economic development.
- Type of transit mode may be less significant to economic development than the quality of the transit and supporting infrastructure.
- Characteristics/values of the places to be connected ranked higher in surveys than the infrastructure investment itself.
- Connection to Lehi is as important as the connection to The Point because of the pace of development occurring in Lehi.

**ECONOMIC
DEVELOPMENT
AND TRANSIT
INVESTMENT**

VIRTUAL ROUNDTABLE

AUGUST 19, 2020 >> 10:00 AM - NOON

POINT OF THE MOUNTAIN
TRANSIT STUDY

6.5 Level 1 Recommendation

A Level 1 recommendation was developed based on the findings from the Level 1 technical analysis, and with additional information from public input and coordination with project partners and economic development experts. The recommendation was reviewed and refined by the TAC at the September 8, 2021 meeting and was approved by the Steering Committee at the September 17, 2021 meeting. The Level 1 recommendation identified a core segment that all Level 2 alternatives must have called the “Common Ground Segment.” This Common Ground Segment (Figure 6-12) was proposed to help focus decision-making for Level 2 screening and to define a compelling transit project that can be more quickly implemented in the Point of the Mountain area.

This Level 1 recommendation would meet the Purpose and Need and does not preclude investments to the north found in Level 1’s full alternatives (LRT West, LRT East, BRT West, and BRT East) and could be developed as an early investment project as well as a phased program for implementing world-class transit for the Point of the Mountain. Key features of the Common Ground Segment:

- **Highlights economic development benefits** of connecting FrontRunner Draper to The Point, Highline City Center, and Lehi, linking the biggest current and future economic development centers that are not directly served by high-capacity transit.
- **Strategically leverages current and planned regional infrastructure and services:**
 - Connects to FrontRunner Draper at the northern terminus.
 - Connects to planned Central Corridor Transit and potentially FrontRunner Lehi at the southern terminus.
 - Allows the study to consider whether plans to improve service on FrontRunner could improve transit service in the Point of the Mountain area in combination with this project.
 - Allows the study to consider a future northward extension of this project to the existing TRAX at Sandy Civic Center or at Draper Town Center.
- **More readily implementable investment** – The Common Ground Segment offers a shortened version of the full Level 1 alternatives, which identifies a segment that has reduced costs and construction challenges and would be easier to implement.

Recommendation: Moving the Common Ground Segment into Level 2 Screening

A focus on the Common Ground Segment in Level 2 was proposed to allow for a greater focus on mode and economic development potential, and to allow faster implementation of an initial investment in the corridor. This narrowing to a shorter initial segment supported more detailed analysis of the potential fit and tradeoffs between BRT and rail-infrastructure investments and the specific communities they would serve with stations. This included more detail on public and private plans to maximize transit-oriented economic development opportunities and create and sustain vibrant and attractive communities. It also allowed further focus on the opportunities and goals for a connection to the Central Corridor BRT to the south, including to the FrontRunner Lehi Station.

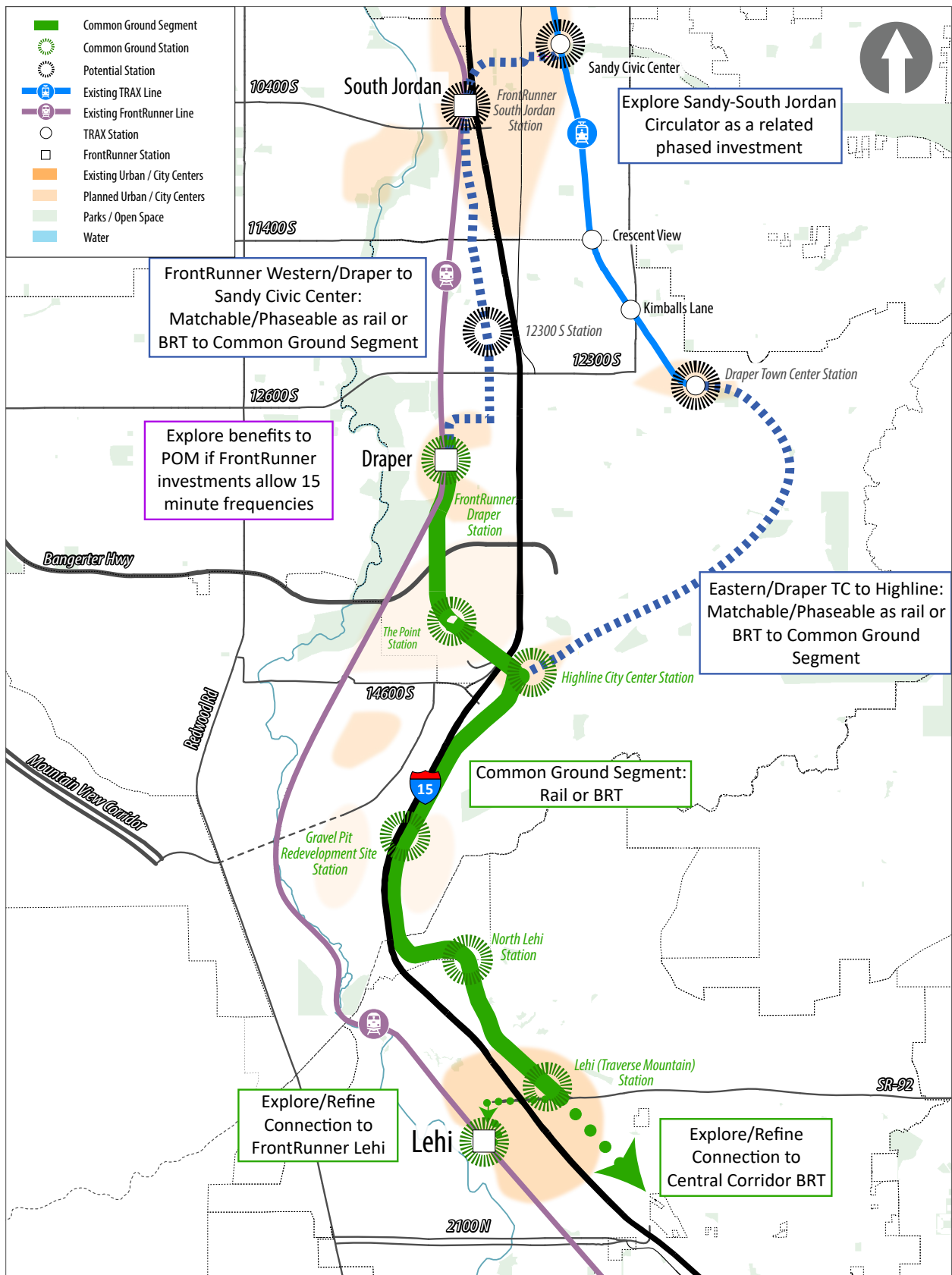


Figure 6-12. Common Ground Segment

7. LEVEL 2 ALTERNATIVES EVALUATION

With the identification of the Common Ground Segment, the Level 2 screening step was developed to focus on the primary decision to be made within this segment - mode selection.

7.1 Level 2 Alternatives

The Level 2 alternative evaluation included consideration of two modal options on the Common Ground Segment. The Common Ground Segment starts at the FrontRunner Draper station and terminates in Lehi at the Traverse Mountain station north of SR-92. The two mode options - rail and BRT - are described below.

7.1.1 Rail

Two rail options were developed: a Diesel Multiple Unit (DMU) service that could interline with FrontRunner and LRT service. See Figure 7-1 for the Common Ground Segment Level 2 Rail Alternative.

This option starts on the east side of the FrontRunner Draper Station. The representative alignment utilizes the existing transit center and heads south in an exclusive corridor, paralleling the existing FrontRunner tracks before elevating over Vista Station Boulevard, the existing FrontRunner tracks, and Bangerter Highway to connect into The Point. The representative alignment assumes a transition to an elevated crossing of I 15 to make the grades needed to serve Highline City Center and reach the existing eastside rail corridor. Due to the lower grades required for a rail crossing of I-15 at The Point, only one station could be sited at The Point redevelopment area. After Highline City Center, the alignment would continue south toward Lehi along the existing UTA rail corridor to reach a station in Lehi north of SR-92.

These rail options would provide attractive, high-quality transit service with enhanced station area amenities and fully exclusive operations, where rail would operate in dedicated lanes separate from traffic. The rail option would require a satellite maintenance base to support operations.

Rail Key Attributes

Alignment Length: 7.4 miles

Stations served: 6 (with option for two additional stations in Lehi to reach the FrontRunner station)

Percentage transit only operations: 95%



TexRail DMU Service - example of DMU transit service



UTA TRAX Blue Line - example of LRT service

7.1.2 Bus Rapid Transit

The BRT option would start on the west side of the FrontRunner Draper Station. From there, the representative alignment utilizes the existing transit center and heads south using the existing street network on FrontRunner Boulevard and Vista Station Boulevard before crossing over Bangerter Highway to connect to The Point. Due to the higher grades allowed for a BRT crossing of I-15 at The Point, up to two stations could be sited at The Point redevelopment area. The representative alignment assumes a transition to an elevated crossing of I-15 to make the grades needed to serve Highline City Center and reach the existing eastside rail corridor. After Highline City Center, the alignment would continue south toward Lehi along the existing UTA rail corridor to a station in Lehi, north of SR-92. See Figure 7-2 for the Common Ground Segment Level 2 BRT Alternative.

BRT Key Attributes

Alignment Length: 7.5 miles

Stations served: 7 (two stations at The Point and option for two additional stations in Lehi to reach the FrontRunner station)

Percentage transit only operations: 90%

This option would be developed as “gold-standard⁴” BRT in order to provide high-quality transit service that performs like rail. The BRT option would provide attractive, high-quality transit service with enhanced station area amenities. The BRT would provide exclusive transit operations in nearly 90 percent of the Common Ground Segment. BRT is less expensive than rail and provides flexibility for phased options to implement transit service. A BRT guideway with dedicated lanes also provides flexibility to accommodate multiple bus routes to and from multiple destinations in the region.



Cleveland's Healthline BRT



UTA UVX BRT

⁴ A BRT rating system has been developed by the Institute for Transportation and Development Policy, and includes gold, silver, and bronze level ratings. BRT corridors are formally rated based on certain characteristics such as dedicated right-of-way, intersection treatments, service planning assumptions, infrastructure quality, station facilities, communications, and access. Additional information can be found at: <https://www.itdp.org/library/standards-and-guides/the-bus-rapid-transit-standard/>

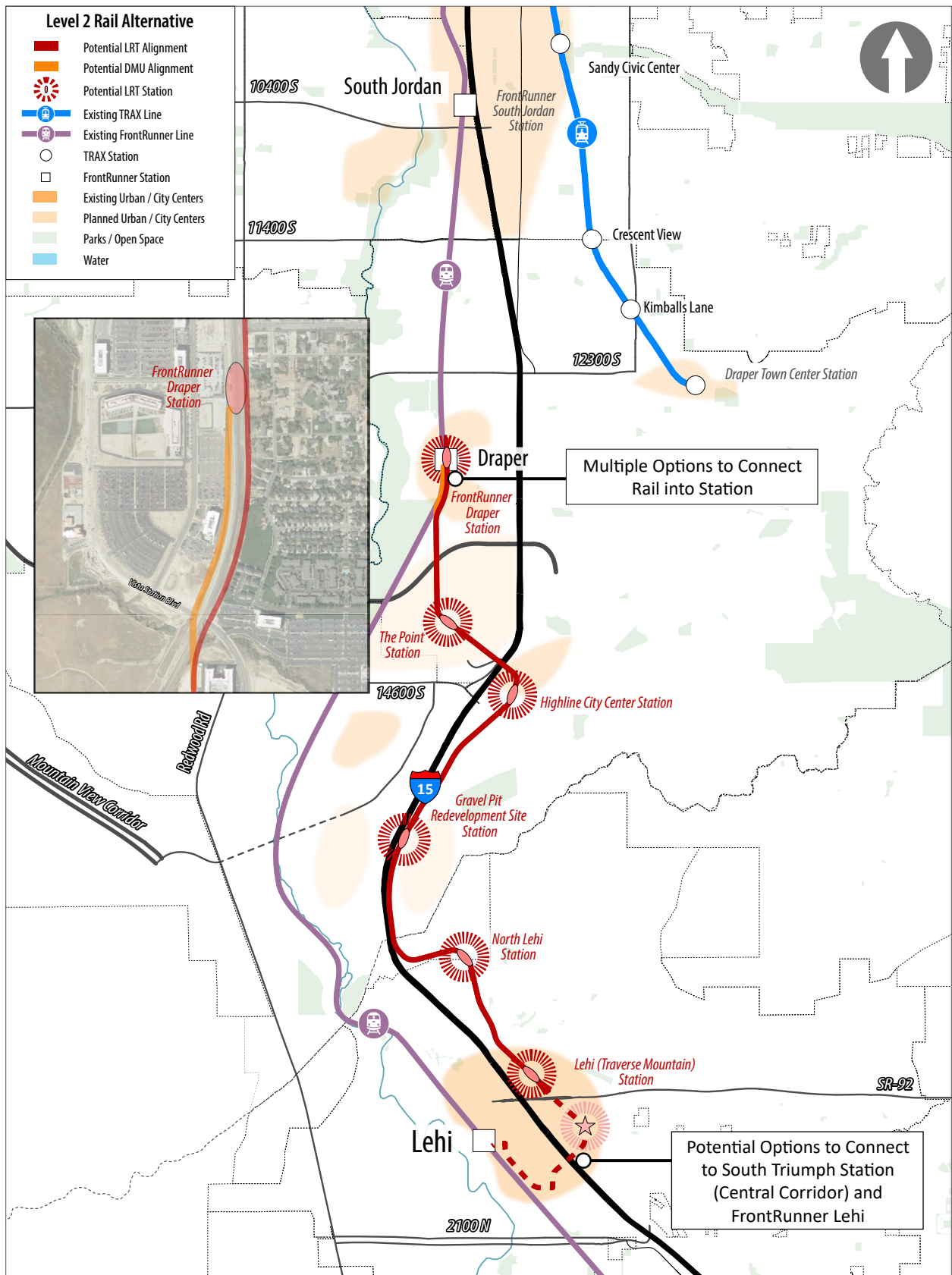


Figure 7-1. Level 2 Rail Alternative

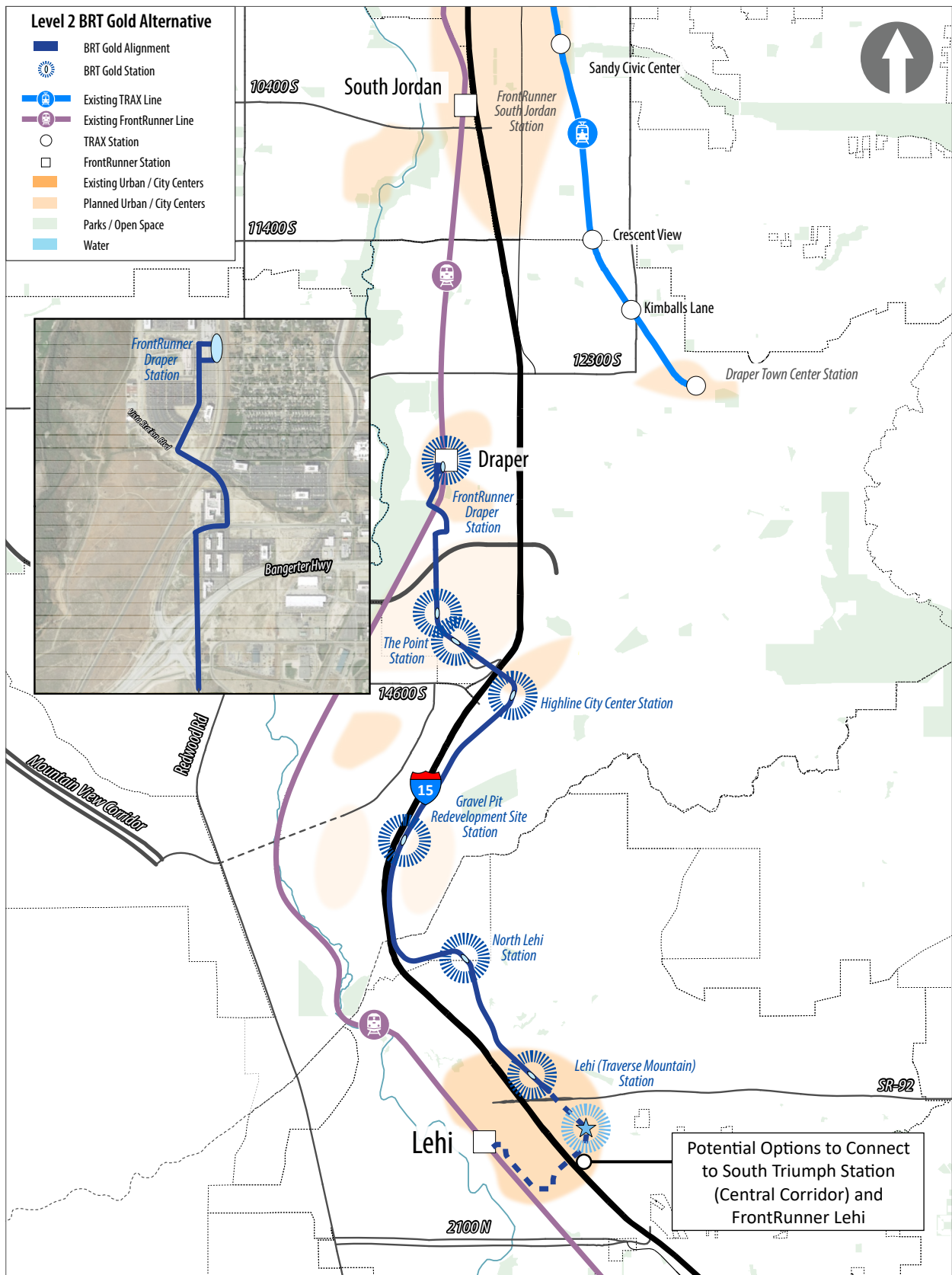
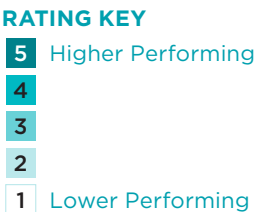
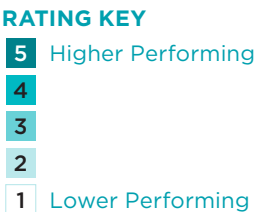


Figure 7-2. Level 2 BRT Alternative

7.2 Level 2 Evaluation Findings

The two modal alternatives in the Common Ground Segment were screened using the evaluation criteria shown in Table 5-1. Evaluation criteria were similar to Level 1, but adding economic development, timing and implementation, and transit integration options. The full detailed Level 2 evaluation ratings can be found in Appendix D. Figure 7-3 shows a snapshot of the ratings:

POINT OF THE MOUNTAIN TRANSIT STUDY		Draft Level 2 Summary of Evaluation Ratings	
EVALUATION CRITERIA • MEASURE	ALTERNATIVES		
	BUS RAPID TRANSIT	RAIL	
RATING KEY			
Transit Speed and Reliability	4	5	
Ridership	3	3	
Potential to Serve Existing and Planned Centers	4	4	
Transportation System Impacts	4	5	
Promotes Bike/Ped Access and Connections	3	3	
Ease of Vehicular Access	4	4	
Transit Connections	4	3	
Local Plan Compatibility	3	4	
Mixture and Density of Land Uses	4	4	
Walkable Design	3	3	
TOD Opportunities and Economic Development	4	4	
Economic Development	4	4	
Cost Considerations ¹	4	2	
Constructability Considerations	4	2	
Operational Considerations and Cost Factors	4	2	
Timing and Implementation Considerations	4	2	
Effects on the Natural Environment	4	3	
Potential Air Quality Improvements	3	3	
Effects on the Built Environment	4	3	
Support Equity	4	3	
Transit Integration Operations	4	2	

¹ Capital cost range based on representative alignment which includes an allowance for real estate and soft costs, as well as vehicle costs, maintenance facilities, and station programming elements. Operational costs are not included.

Figure 7-3. Level 2 Summary of Evaluation Ratings

The Level 2 evaluation added more detail on economic development opportunities and how the transit investment could be leveraged to support planned developments while still improving local and regional mobility. It included updated information on capital costs, operating conditions, station area measures, forecasts of the economic development value in station areas/planned communities, and updated ridership forecasts. Review of case studies (Appendix E), as well as individual workshops with affected stakeholders, provided more insights into specific communities each station would serve, and covered factors related to the key mode decision to be made, as well as the ability of each mode to create a world-class transit investment that integrates and connects key development areas along the corridor. Key findings from the Level 2 alternative evaluation include:

- **Highlighted areas of similarity:**

- **Economic Development** – The project supports major new developments that would generate substantive taxable land value for the region and add new jobs and housing for residents, along with retail uses generating additional sales tax revenues. Benefits between rail and BRT were expected to be similar if high-quality BRT is implemented with features on par with a rail investment (dedicated lanes/guideways, platform loading, signalization priority, load frequency during peak hours, and other enhanced station area amenities that give property owners/developers a level of certainty about the long-term nature of the improvements).
- **Land Use** – Pairing this world-class transit investment with integrated station area planning would maximize the success of the investment for either BRT or rail. Features such as robust multimodal access, placemaking, and innovative policies would help drive ridership and allow stations to become a part of the local urban fabric.
- **Ridership** – Ridership was similar between BRT and rail. Opportunities to optimize ridership through terminus location and connection to FrontRunner Lehi as well as frequency of service would continue to be explored. Continued model refinements would be explored in future phases of study and would include detailed review of underlying socioeconomic data and opportunities to catalyze land use and associated data. Additional information about ridership can be found in Appendix F.

- **Highlighted areas of strong differentiation:**

- **Cost** – BRT \$300-450M | Rail – \$450-650M for DMU; \$600-850M for LRT
- **Cost-Effectiveness** – Based on the difference in capital costs between BRT and rail and the similarities in ridership, BRT would be a more cost-effective mode to implement.
- **Constructability** – Complexity of construction and associated risk was substantively reduced with BRT compared with rail. BRT would allow for construction of two stations at The Point.
- **Operational Considerations** – Operations of BRT would be more easily accommodated within the existing transit system compared with rail. Rail would likely require an independent (and adjacent) satellite operations and maintenance facility for service.
- **Timing and Implementation** – Once funding is fully secured for environmental through final design and construction, the timeline for BRT would be reduced compared with rail. Options for flexibility in phased construction and implementation are more readily available for BRT.
- **Transit integration** – If desired, providing additional connections to South Triumph (Central Corridor Transit) and to FrontRunner Lehi would be more flexible and less costly with BRT than rail and provide a more seamless connection with Central Corridor Transit.

7.3 Level 2 Recommendation

Based on Level 2 findings, public input, and coordination with project partners, a high-quality, seven-station, 8-mile BRT project with “gold-standard” treatments was recommended as the Preferred Alternative. The Preferred Alternative was reviewed and refined by the TAC at the December 3, 2021, meeting and was approved by the Steering Committee at the December 10, 2021, meeting. The Preferred Alternative would connect FrontRunner Draper to Traverse Mountain (Lehi) to support the major economic development and mobility goals for the Point of the Mountain area. The project was recommended because:

- Most of the highest-growth, highest-economic-development centers in the Point of the Mountain area would be served by the Preferred Alternative.
- The current pace of growth and development in the corridor calls for the Preferred Alternative to be developed as quickly as possible to maximize economic development and transit-oriented development opportunities.
- The Preferred Alternative would effectively connect with other existing or planned regional transit services, including FrontRunner and the proposed Central Corridor Transit project.
- The Preferred Alternative would retain the ability to make other priority investments for the Point of the Mountain area.
- The Preferred Alternative is projected to meet current and long-term future travel demands.
- A “gold-standard” BRT has the same or better transit and economic performance as a rail alternative but would be more economical to construct and quicker to implement.

SUPPORTING RECOMMENDATIONS

Potential supporting investment recommendations were also made as part of the Preferred Alternative recommendation and include:

- The potential to continue south, crossing over SR-92, farther into Lehi and serving two additional stations at South Triumph and FrontRunner Lehi.
- A potential BRT connection to serve Sandy Cairns between Sandy Civic Center Station and FrontRunner South Jordan, as envisioned in the Sandy South Jordan Circulator Study, which would also improve ridership and economic development in the Point of the Mountain area.
- These supporting recommendations, described further in Section 9.3, are not included in the ridership and cost information presented in Sections 8.3 and 8.4 below, unless noted.

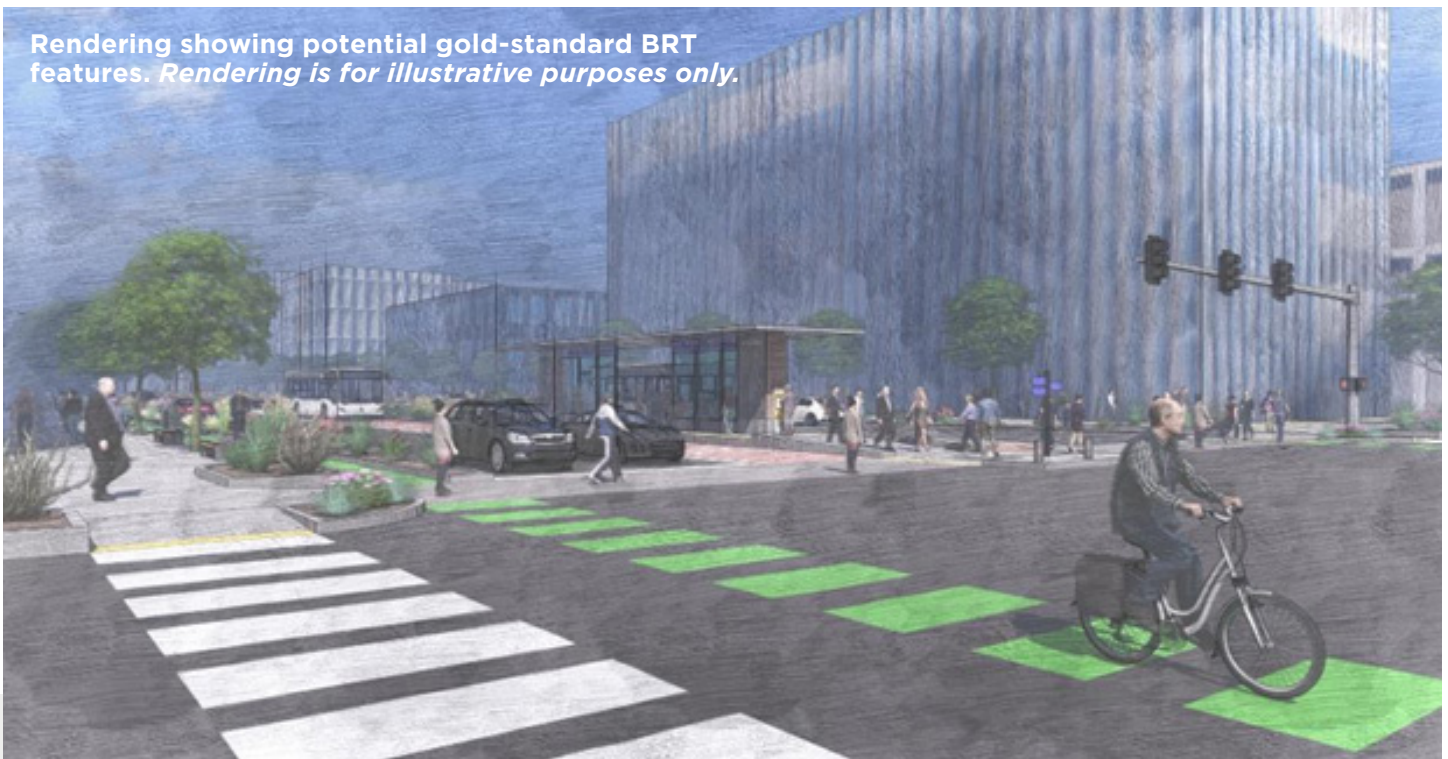
8. PREFERRED ALTERNATIVE

8.1 Overview

Based on the findings from Level 2, public input, and recommendations from the TAC and Steering Committee, a Preferred Alternative was selected and refined. Building on the supporting recommendations presented in Section 7.3, UTA, in coordination with project stakeholders including Lehi City, recommended extending the Preferred Alternative to FrontRunner Lehi. This extension provides an additional connection to the commuter rail system and better serves Lehi's areas of planned development at the South Triumph Station, along Ashton Boulevard, and at the FrontRunner Lehi Station. The Preferred Alternative updated the initial TAC and Steering Committee recommendation to feature a high-quality, 10 station, 10-mile BRT project that connects FrontRunner Draper to FrontRunner Lehi to support the major economic development and mobility goals for the Point of the Mountain area (Figure 8-1).

The Preferred Alternative offers a “gold-standard” BRT with the following key features:

- Over 80 percent exclusive guideway for transit to operate outside of traffic. Additional features – such as gated crossings, level boarding vehicles, and high-frequency service – would also be considered to help maximize speed and reliability.
- A guideway with an attractive urban design and distinctive, high-quality station areas that feature off-bus payment, real-time travel information and wayfinding, amenities to enhance passenger comfort and safety, and consistent branding (see illustrative renderings below).
- More flexibility to accommodate stations that fit within existing and planned development, including the potential for two stations at “The Point.”
- Capital cost of \$425-600M, up to half the cost of light rail with similar forecasted ridership.
- More flexibility to implement transit service for the corridor sooner as new developments come online, and as other connecting transit improvements are made.



Rendering showing potential gold-standard BRT features. *Rendering is for illustrative purposes only.*



Rendering showing potential gold-standard BRT features. *Rendering is for illustrative purposes only.*



Rendering showing potential gold-standard BRT features. *Rendering is for illustrative purposes only.*



Rendering showing existing Adobe site with future dedicated transit corridor parallel to Rail Trail. *Rendering is for illustrative purposes only.*

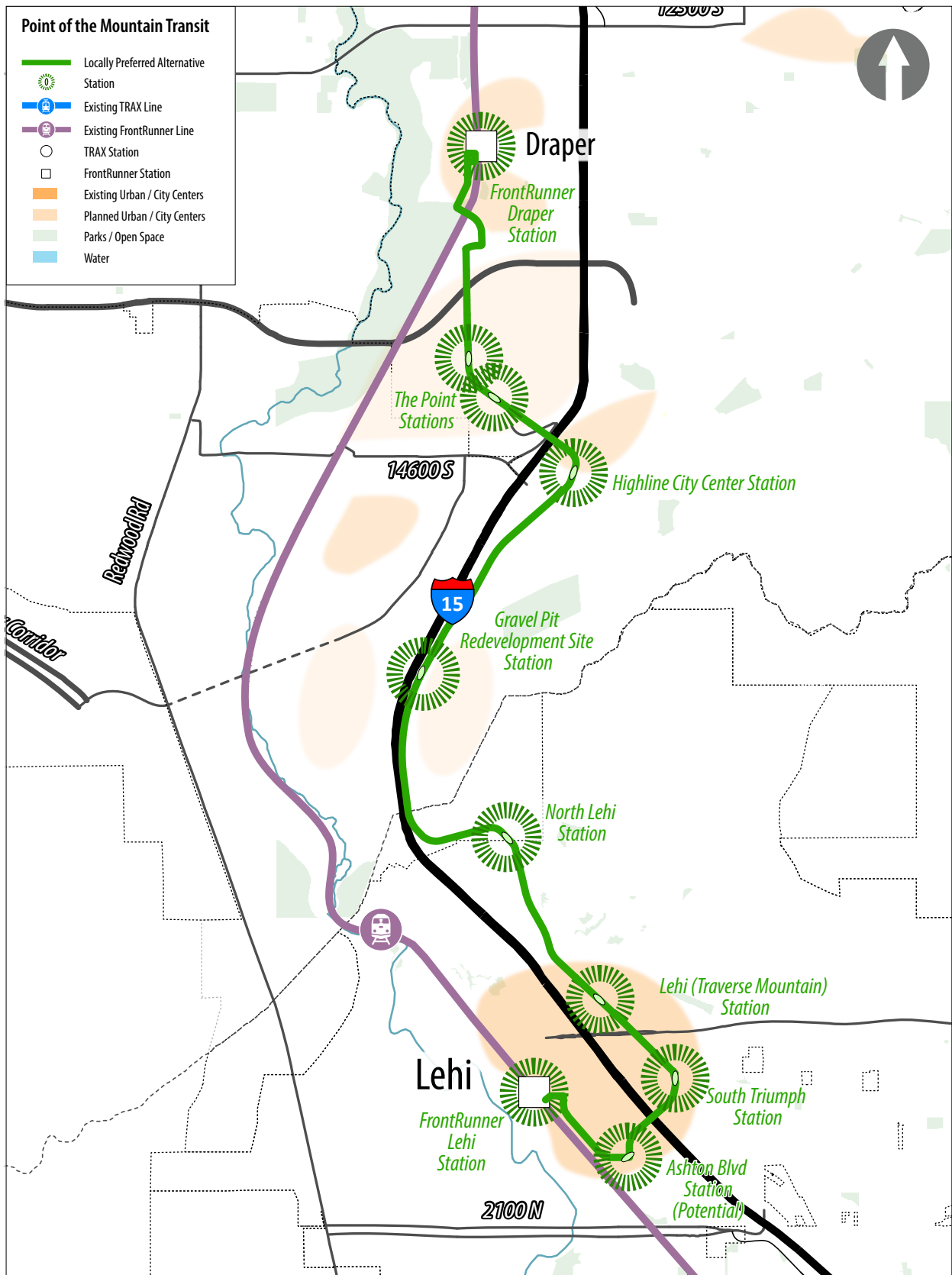


Figure 8-1. Preferred Alternative

Key Characteristics of the Preferred Alternative

Primary Mode: Bus Rapid Transit

Length: 9.9 miles

Percent Exclusive: Approximately 80%

Projected ridership: Approximately 2,000 riders/day

Travel Time: 29 minutes

Capital Costs: \$425-600M. Note: Capital costs include major infrastructure for the representative project, including, but not limited to, roadway reconstruction and widening and associated right-of-way acquisition, BRT stations, vehicles, maintenance base, and station access funds. Capital costs are based on a representative alignment and could change as the scope of the project is further refined in future phases of work. (Additional information in Section 8.4.)

Operating Costs: Approximately \$3.5-4.5M/year. Note: An hourly operating cost estimate was provided by UTA based on costs incurred per hour, such as labor; and costs per mile, such as fuel and tires. Operating cost estimate does not include capital, support, overhead, insurance, maintenance, right-of-way, administration, marketing, transit police, customer support, or any other companywide costs. (Additional information in Section 8.5.)

8.2 Definition

8.2.1 Alignment and Stations

This alignment would operate as BRT, starting on the north end at the existing FrontRunner Draper Station and terminating on the south end at the existing FrontRunner Lehi Station (Figure 8-1). From the FrontRunner Draper Station, the alignment utilizes the existing station located west of the FrontRunner tracks. The alignment would follow the existing roadway network in mixed-use traffic along Vista Station Boulevard before transitioning to business access and transit-only lanes. It would follow 600 West, until turning southeast to elevate over Bangerter Highway and associated on/off-ramps, and back to grade prior to the transmission lines. The alignment travels southeast across The Point site, serving up to two stations, and then transitions to retained fill and an elevated structure to cross over I-15 to access the Highline City Center Station within the existing UTA owned right-of-way. From here, the alignment continues south, following the UTA right-of-way serving two additional stations (North Lehi and Lehi/Traverse Mountain) and crossing SR-92 on an elevated structure. After returning to grade, the alignment continues along the UTA right-of-way to the South Triumph Station. From the South Triumph Station, the alignment accesses Triumph Boulevard likely utilizing the local roadway network. The alignment turns west on Triumph Boulevard, crossing I-15, and turning north onto Ashton Boulevard. The alignment continues along Ashton Boulevard, potentially serving an additional station, before terminating at FrontRunner Lehi.

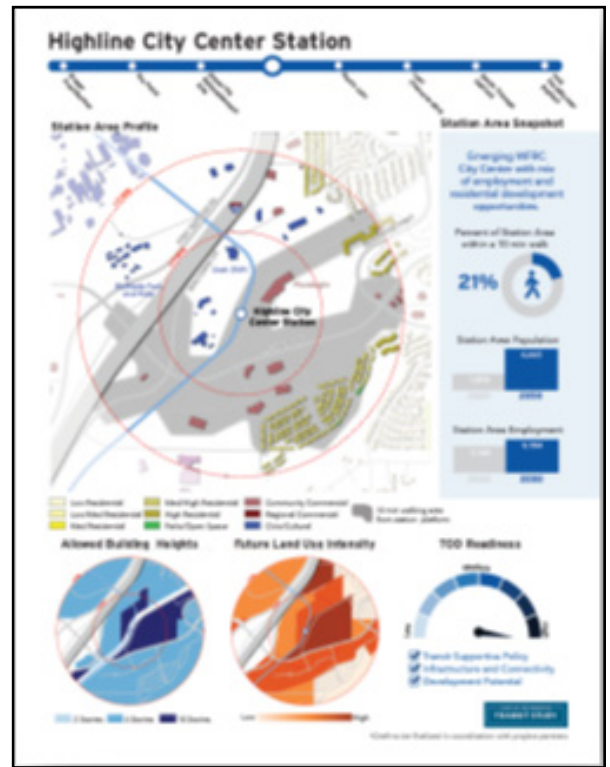
The alignment includes up to ten stations:

- FrontRunner Draper
- The Point (up to two stations)
- Highline City Center
- Gravel Pit Redevelopment Site
- North Lehi

- Lehi (Traverse Mountain)
- South Triumph
- Ashton Boulevard (optional)
- FrontRunner Lehi

To support development of the Preferred Alternative, the project team coordinated with each station’s respective agency to develop Station Area Portraits (see Appendix G). The purpose of this exercise was to develop an understanding of each station’s unique development planning context, development potential, and readiness, and to identify opportunities to maximize the success in supporting transit. Key takeaways from this planning exercise found:

- Stations vary in terms of transit-oriented development readiness. Some are ready today; others are decades away from development.
- There should be a focus on integrating the station with the surrounding neighborhoods and development to increase local access, with a focus on making connections to the regional trail network and reducing barriers to access.
- Each station is unique but should be considered part of the corridor as a whole. Well-connected but unique station areas can work together and serve complementary purposes.



8.3 Ridership

The Wasatch Front Travel Demand Model Version 8.3.1, with additional transportation analysis zone refinements in the project area, was used to forecast ridership for the Preferred Alternative. This modeling featured one station at The Point, although two are possible. Initial modeling forecasts for the Preferred Alternative predicted approximately 2,000 average weekday boardings in 2050.

To understand the potential impact of changes to variables that would impact ridership on the Preferred Alternative, a series of sensitivity tests were completed using full model runs that included coding of variations on top of the Preferred Alternative. Each sensitivity test was run independently of one another and compared against the forecasted ridership described above. The first test doubled the frequency of FrontRunner from 30 minutes peak/60 minutes off-peak to 15 minutes peak/30 minutes off-peak. The second test increased the peak headway to every 10 minutes. The third test included the connection from Lehi Traverse Mountain Station to the FrontRunner Lehi Station, which became part of the Preferred Alternative.

Table 8-1. Modeling Sensitivity Test Results

Sensitivity Test Description	Daily Boarding Percentage Change
Double Frequency of FrontRunner (15 Peak/30 Off-Peak)	+19%
10-minute headways in peak (to match service frequencies of Central Corridor Transit)	+13%

Table 8-1 on page 87 provides information on the magnitude of the impact on ridership as compared with the Preferred Alternative for each sensitivity test performed. Sensitivity testing reveals the potential for increased ridership with FrontRunner frequency increases and increases in service frequency.

Additional strategies to optimize ridership would continue to be explored in subsequent phases, including considerations of southern terminus locations, refinements to the FrontRunner Lehi connection, service frequency increases, local bus service changes, and operational interface with Central Corridor BRT. In addition, continued model refinements would be explored and would potentially include review of how highway congestion and the lack of reliability affect mode choice, how underlying socioeconomic data and opportunities could catalyze land use and associated ridership, and how changes in land use policy and regulations (e.g., parking requirements, specific development and employment types) could influence model behavior. All these factors could substantially influence projected ridership.

8.4 Capital Costs

The project team prepared rough order of magnitude cost estimate ranges for capital costs using previous UTA estimates developed by Krebs Corporation. Proposed project scope (length of corridor, portion of exclusive guideway, number of stations, etc.) was based on the information from the Level 2 development of alternatives. The estimate approach used past and 60% design cost information from the Utah Valley Express (UVX), Ogden, and Midvalley BRT projects and past roadway projects to develop unit costs using a route-per-foot basis. The quantities were based on the assumed scope of work for the project. It should also be noted that at this early stage of project development, the cost estimate was presented as a range because of the potential variations in estimated costs due to localized design needs as well as other cost factors, including rights-of-way. To capture the variety of potential localized design treatments/approaches that remain to be defined along the corridor, the estimate was broken down by type of BRT facility, elevated structure, roadway widening, grind, and overlay, etc. A design allowance of 30 percent was added to account for design unknowns at this stage of project development.

Right-of-way costs were developed based on GIS parcel information. To account for variability of right-of-way costs along the corridor, a unit price for “over the fence” values of properties from the Salt Lake County and Utah County Assessors office was developed using GIS to assess an average cost per square foot of right-of-way. This was applied to a right-of-way estimate based on areas requiring right-of-way from the design, including stations and intersections where widening is assumed due to the existing roadway configuration with left/right turning movements. The unit price was doubled to help account for right-of-way contingency as well as relocation and acquisition fees and real estate market adjustments.

The capital cost estimate also included vehicle costs (based on frequency and route length, including spares), a contribution to a new or expanded operations and maintenance base (to accommodate the expanded vehicle fleet), and station programming. At this level of initial planning, a 60-foot diesel bus was assumed for cost purposes. Additional vehicle assumptions and considerations will be explored as the project progresses. Station programming is an allowance for potential costs related to pedestrian/bike access, kiss and rides, park and ride lots, or operator facilities that have yet to be identified at this stage of project development. Lastly, a program soft cost of 60 percent was applied based on UTA guidance. The program soft costs account for UTA administration of the project, environmental, engineering, construction management, and construction change order contingency. A low- and high-cost range was created by adding an additional 40 percent to the total program low cost to help address the remaining variability of scope and cost factors still to be defined through further design.

The rough order of magnitude cost range for the Preferred Alternative is \$425 million to \$600 million.

8.5 Operations

For this planning-level study, the project team defined initial operating assumptions to characterize ongoing project costs and identify other operational needs. The following bullets articulate several considerations where additional design and operational logistics will be considered as more detailed environmental

planning and design occurs. Some of these factors are primarily related to operations, but others relate to the project design decisions that remain.

- **FrontRunner Draper and Lehi station:** Additional bus bays may be needed to provide space for additional bus service at these locations.
- **Connection to Central Corridor Transit:** The Central Corridor Transit Study (described in Section 2.3.2) has recently selected a Preferred Alternative that provides BRT service between Lehi and Provo, with a connection to Point of the Mountain Transit in Lehi. Multiple operational scenarios and tradeoffs for these two projects have been identified. This includes options for Point of the Mountain Transit and Central Corridor Transit to operate as “one line,” with a transfer required to FrontRunner Lehi, or to provide a one-seat ride from Point of the Mountain Transit or Central Corridor Transit to either a Triumph/Hospital Station or FrontRunner Lehi. These tradeoffs, particularly with ridership and cost, will be explored during the environmental study for both projects to illuminate the most beneficial scenarios for UTA and the corridor.
- **Potential for fleet electrification.** UTA has recently begun integrating electric buses into their fleet. If UTA determines that the Point of the Mountain Transit would feature an electric vehicle fleet, this could affect terminus stations (including facilities for charging) as well as operating characteristics and maintenance facility needs.

Additional analysis will occur in future phases of work to further review whether the operating plan for Point of the Mountain Transit would be designed to interline with Central Corridor Transit line. It could also review the potential to share maintenance facilities, certain layover areas, vehicles, or other joint operating elements. The size and location of a maintenance facility and the various maintenance functions to be performed there are also variables affecting facility requirements, siting, and costs.

8.5.1 Planning-Level Operations Costs

A planning-level estimate of operating costs was made based on several key variables, such as corridor frequencies, travel times (based on length and number of stations), layovers, and recovery times. Initial operating assumptions include 15-minute frequencies during most of the day (6 a.m. to 8 p.m.). Reduced operating hours and longer frequencies can be expected on Sundays and holidays. An hourly operating cost estimate was provided by UTA based on costs incurred per hour, such as labor; and costs per mile, such as fuel and tires. A high- and low-cost range was produced to account for the limited planning-level information and assumptions available at this time.

This summary is presented in Table 8-2, showing a full project annual operating cost range of \$3.5 million to \$4.5 million. It is important to note that these estimates do not include capital (buses), support, overhead, insurance, maintenance, right-of-way, administration, marketing, transit police, customer support, or any other companywide costs.

Vehicle fleet assumptions have not yet been made, although an initial number of six vehicles was included in the capital cost estimate, as explained in Section 8.4. It is expected that a high-quality BRT vehicle will be purchased, but costs per vehicle have not been factored into these assumptions. Additionally, with an expanded fleet of up to five buses, either a new or expanded maintenance facility may be required. The determination on maintenance facility needs will occur in later phases as regional transit system expansion needs and implementation timeframes are understood.

Table 8-2. Rough Order of Magnitude Operating Cost Estimates

Scenario	Peak Vehicle	Annual Operating Hours	Annual Cost*
High Range	7	47,000	\$4,500,000
Low Range	6	40,000	\$3,500,000

8.6 Next Steps

In accordance with UTA procedures, official adoption of the Preferred Alternative requires amendment of the long-range plan and approval of the affected cities, the UTA Local Advisory Council, and the UTA Board of Trustees. The project development next steps will include preliminary engineering and environmental review, which will include a detailed project implementation, funding, and construction plan (as shown previously in Figure 1-1).

9. FUNDING AND IMPLEMENTATION

9.1 Funding

A finance and revenue assessment is described in Appendix H, Funding Memorandum. An overview of these options is described in Section 9.1.1. Given the capital investment required to fully fund the project, a combination of funding sources would likely be needed. Section 9.1.2 describes a potential hybrid funding option that considers the use of multiple funding sources. This is a preliminary recommendation, and additional refinement of funding strategies, along with more detailed estimates of capital and operating costs, will be prepared in subsequent phases of project development.

9.1.1 Overview of Funding Sources

FEDERAL SOURCES

The Federal Transit Administration (FTA) is the primary federal funding source for transit projects, although other federal sources and grant programs can also be used. Most BRT projects with federal grants are implemented under the FTA 5309 Capital Investments Grants (CIG) program, which includes New Starts grants for fixed guideway projects with total capital costs over \$300 million and Small Starts grants for fixed guideway projects with total capital costs under \$300 million (based on the FAST Act criteria). Due to the scope and cost of the project, New Starts funding could be sought; or the project could be phased into smaller less costly sections that can competitively stand on their own, making Small Starts or other types of grants a potential funding option. The Small Starts application process is somewhat more streamlined than the New Starts application process, while still providing up to \$100 million in federal funding per project. By contrast, New Starts projects often include much larger multibillion-dollar capital investments, such as major urban light rail systems that can stretch over several years of federal allocations, and are highly competitive.

The project justification criteria established by law for FTA to evaluate Small Starts and New Starts awards considers:

- Mobility
- Environmental benefits
- Congestion relief
- Economic development
- Land use
- Cost-effectiveness (cost per trip)

Measurement of costs for use in the ratings is very different for Small Starts projects in that they include only the annualized federal share of capital costs, where New Starts include the total annualized capital costs and operating costs for the Build versus a No Build condition.

Several of the project justification criteria are derived from travel demand forecasts for the project. Modeling completed during the Alternatives Analysis showed that in 2050, approximately 2,000 daily riders would use the project. Given the lack of existing development and transit ridership along the corridor, it is likely that the initial forecasted ridership projections would result in a low rating for mobility, congestion relief, environmental benefits, and cost-effectiveness. However, there is also a reasonable potential for refinements in land use details as well as access to transit to improve ridership forecasts. The corridor has

a unique potential to be transit-oriented, and more than 100,000 people are anticipated to be living and working near the corridor in the future. This level of density could generate several hundred thousand daily total trips, and a high-quality transit system with supportive land uses could be able to capture a larger share of these total trips. Additional planning and analysis during the next phase of the project would explore this potential and its effects on the project's competitiveness for CIG funding.

Aside from the CIG program, other federal funds and grants to be considered include: Transportation Infrastructure Finance and Innovation Act (TIFIA) program, Surface Transportation Program (STP), and Better Utilizing Investments to Leverage Development (BUILD) grants. Again, future phases would explore areas where grants related to mobility, environmental or economic development, congestion management or air quality benefits, green infrastructure benefits, and other emerging funding initiatives could be leveraged by the project.

LOCAL SOURCES AND EXISTING REVENUE STREAMS

The potential of utilizing local funds and existing revenue streams are also a consideration. The proposed project would enhance property values and aid in encouraging uses that will add notable taxable value to the local municipalities. A significant amount of development would occur regardless of the availability of a mass transit option due to market forces that provide an adequate profit for land acquisition and new development. New and future development would continue to be enhanced by the availability of transit. The rise in values will result in greater tax generation for the area. The various local funding sources and existing revenue streams to be considered include:

- Local sales and use taxes
- County option sales and use taxes
- Mass transit sales taxes
- County option transportation taxes
- UTA sales tax revenues
- Supplemental state sales and use tax
- 2219 Proposition 1 taxes
- SB 136 - revived 2219 taxes
- 59-12-2220 sales tax
- Property taxes
- Class B&C road funds
- Vehicle uniform fee-in-lieu of property tax
- Municipal energy sales and use tax
- Local government's general fund appropriations
- Gas taxes
- Motor vehicle registration fees

POTENTIAL NEW ECONOMIC DEVELOPMENT ACTIONS

Enhanced Community Reinvestment Area

Consideration is also made herein for possible new economic development tools that could be utilized to generate funds to offset costs of construction. The current Community Reinvestment Area (CRA) structure provides taxing entities with the option of participating in the sharing of tax increment. Some taxing entities have formed policies that result in heavy restrictions on participation and ultimately create CRAs that lack some of the intended economic development potential. As a result, CRAs have become somewhat less

effective than originally planned, and new tools are being discussed, particularly for areas with major transit improvements.

An effective tool for notable tax generation will likely require the participation of all taxing entities, including potentially the State of Utah. An “all-hands-on-deck” approach may be necessary to fund significant new transportation infrastructure. Areas that have significant development potential and transportation infrastructure are being considered for possible designation as TOD enhanced areas that may have the ability to generate tax increment. In addition, these key areas that fit certain development criteria, could potentially have participation from the State of Utah via various means.

Public Infrastructure District

Consideration should also be given for implementing Public Infrastructure Districts (PIDs) in the Point of the Mountain area in order to further facilitate development and increased property values that may in turn provide for more opportunities to fund transportation infrastructure. The PID tool allows for creation of a separate taxing entity in order to fund public infrastructure. Ultimate users of the property pay for the improvements via the taxing entity through property assessments. These assessments permit for bonding, allowing for covering upfront infrastructure expenses that are repaid over periods typically ranging from 30 to 40 years. This tool results in higher property taxes for property owners/users in the defined district. Consequently, benefits beyond the improved infrastructure need to be included in the area. This can be in the form of better landscaping, street lighting, public spaces, parks, trails, finishes, etc. These benefits aid in creating property appeal and property value increases.

The PID tool may not result in direct revenue potential to fund the proposed project, but the PID tool may aid in creating higher overall values and development potential for the areas to be affected by the proposed project. This will benefit the tax increment generating potential of a CRA and may aid in creating more sales tax.

Transportation Reinvestment Zone

Utah State Senate Bill 136 was adopted in 2018, and amongst other transportation-related directives, the bill provided for transportation reinvestment zones (TRZs). According to the bill, the definition of a transportation reinvestment zone is as follows:

“Transportation Reinvestment Zone” means an area created by two or more public agencies by interlocal agreement to capture increased property or sales tax revenue generated by a transportation infrastructure project. Utah Code §11-13-103(22)

Any two or more public agencies may enter into an agreement to create a transportation reinvestment zone. A TRZ must be centered around transportation infrastructure needs because the agreement between the parties must define the transportation need and proposed investment (Utah Code §11 13 227(2)(a)). The major difference between issuing bonds for a TRZ as compared with a CRA is regarding which entity carries the debt obligation on its books. In a CRA, the debt obligation is carried on the books of the redevelopment agency, and Utah laws provide express permission for redevelopment agencies to issue debt. This keeps the debt off the books of the city or county and clears them of this additional debt. With a TRZ, there is no other entity, other than those participating in the agreement, that can issue the debt. Therefore, the debt would need to be carried by either the city, the county, or one of the other public entities participating in the agreement.

TRZs, similar to CRAs, appear to have broad applicability to the study area and the larger Point of the Mountain study area. Compositely, this is a multijurisdictional area with significant needs for transportation infrastructure. As the proposed project will expand across municipalities, the TRZ format may lead to easier application than the CRA program.

Another advantage to TRZs is the ability to obtain the commitment of transportation agencies, such as UDOT or UTA, for specific planning projects. Interlocal agreements between the public entity with the land-use authority and a transportation agency will identify the specific projects associated with the TRZ. This

will add another level of certainty to City/County planning efforts and will give these public entities some additional leverage in prioritizing needed transportation projects.

9.1.2 Key Funding Opportunities

The available tools described above may be combined in a variety of viable options to arrive at the desired funding level for the proposed project. When selecting funding components, it is important to retain the ability to issue other forms of debt, including commercial paper or bond anticipation notes, which can provide significant timing and funding flexibility. The following options are illustrated as examples of combining various components to potentially accelerate funding for BRT in the area.

- Traditional Funding Mechanisms
- Nontraditional Funding Mechanisms
- Hybrid Options

The Hybrid Option, which utilizes a combination of traditional and nontraditional funding mechanisms, pulling from existing and new revenue streams is recommended as the most viable option. Some key components of this option are as follows:

- State of Utah general obligation bonds
- Utah Transit Authority sales tax revenue bonds
- Tax increment bonds from CRAs or TRZs (or potential new, enhanced tax increment financing tools)
- Tax increment bonds from the Point of the Mountain State Land Authority
- Federal grant money (likely potential source include TIFIA bonds and potentially CIG Small Starts grant)

As the proposed project is the responsibility of the State (through UTA and/or UDOT), the majority of the financing burden will likely fall on one or both of these entities. The cities in the study area have little capacity to share in the funding of these projects in any significant manner. County capacity and ability to help will likely depend on voter approval. The capture of tax increment within TRZs or CRAs within the larger Point of the Mountain Area may provide a very meaningful revenue stream to support these projects.

9.2 Implementation Considerations

As the project moves into the next phase of development, additional coordination and planning are vital to maintaining the vision for the transit corridor and optimizing success. Thoughtful consideration of the following elements will maximize project success for UTA and the communities the transit investment will serve:

- **Maintaining vision** – The legislative mandate associated with world-class transit in Point of the Mountain and associated economic development goals of the region have set a lofty vision for the provision of transit in this area. To that end, an integral component of the Preferred Alternative was a high-quality BRT system, with features on par with a rail investment. This vision should be maintained throughout the project to inspire local communities and elected officials to continue to pursue this long-term investment and to sustain support as the political landscape evolves.
- **Sustaining partnerships** – Continuing to sustain the relationships forged between UTA and project partners is vital to ensuring the integration of both the development and the transit project. Establishing an integrated, shared vision that all agencies and the development community can share will establish clear expectations for outcomes, which helps with seeking funding and community engagement.
- **Coordinated planning** – Readiness for development along the corridor and at station areas is highly variable. A critical piece of implementation is an early look at a “road map” to define an approach to coordinate with developers and permitting agencies. The road map would define the process for putting agreements from the initial identification of right-of-way needed through full dedication of right-of-way for project use.

- **Station area planning** – As mentioned in Section 8.2.1, appropriate station area planning is also critical to maximizing the success of the transit investment. To further this effort, UTA has secured funding to undergo TOD planning around several identified stations along the transit corridor. In station areas that are not yet developed, TOD planning should begin well in advance of transit project construction. For development that is occurring or has already occurred around station areas, planning should still occur and consider additional opportunities to enhance multimodal access, identify infill opportunities, consider zoning/policy changes to promote increased density, decrease parking requirements, etc. Appendix E, Case Studies, includes additional best practices that may be useful for consideration during more in-depth land use and station area analysis in subsequent phases of work.
- **Cost management** – The project costs are still defined in a range, but the \$300 million cost ceiling for a Small Starts grant has the potential to be a conceptual engineering target for a potential phased option of the project, helping to drive some of the engineering refinements and value engineering exercises conducted in support of preliminary engineering.

9.3 Supporting Investment Recommendations

The Preferred Alternative is one project of several potential transit improvements that could be made to benefit mobility, maximize ridership, and achieve other benefits in the Point of the Mountain area. Based on the extensive work done in Level 1 and Level 2 alternative evaluation, the following recommendations are made for supporting investments.

SANDY CIVIC CENTER TRAX TO FRONT RUNNER SOUTH JORDAN CONNECTION

A TRAX Sandy Civic Center Station to FrontRunner South Jordan Station connection was included in the LRT West and BRT alternatives that were explored during Level 1 alternative evaluation Figure 9-1. The alternatives were conceptually engineered in this area based on the alignment envisioned in the Sandy South Jordan Circulator Study (2015). The Sandy South Jordan Circulator Study alignment connects the TRAX

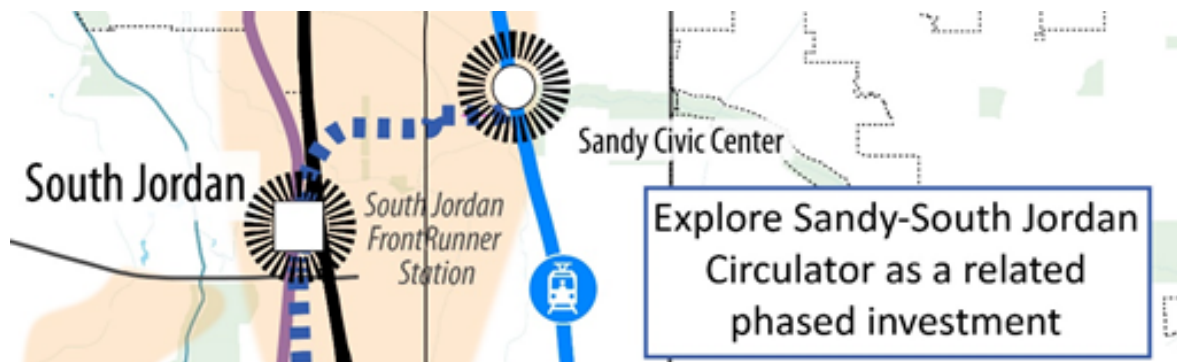


Figure 9-1. TRAX Sandy Civic Center to FrontRunner South Jordan connection

Sandy Civic Center Station to the Front Runner South Jordan Station (and continues into South Jordan) and was designed for rubber tire technology. Sandy has since set aside right-of-way to accommodate this future desired project. Level 1 alternative evaluation revealed this project could be more readily implemented and operated within this dedicated right-of-way using BRT than LRT. The Cairns area of Sandy has experienced rapid and robust growth, with substantial development envisioned over the next decade and beyond. This development (both existing and planned) creates limitations for the provision of future transit service, depending on mode.

Level 1 alternative evaluation revealed this project could be more readily implemented and operated within this dedicated right-of-way using BRT than LRT. The Cairns area of Sandy has experienced rapid and robust growth, with substantial development envisioned over the next decade and beyond. This development (both existing and planned) creates limitations for the provision of future transit service, depending on mode.

- **BRT** – Flexibility of using rubber tire technology would limit impacts to the built environment, resulting in a project that is more cost-effective and easier to implement. A mode transfer would be required at Sandy Civic Center Station, but no other operational considerations were identified.

- **LRT** – Level 1 identified severe/challenging constraints to accommodate geometric requirements of LRT guideway within existing and planned built environment at the Sandy Civic Center Station and to accommodate a I-15 crossing structure to FrontRunner South Jordan. Costs to purchase right-of-way and mitigate property impacts could be significant along these sections and would significantly delay project implementation. Specific challenges identified:
 - **Sandy Civic Center Station** – Due to geometric requirements to transition from a north-south LRT alignment (current TRAX Blue Line orientation) to an east-west LRT alignment (as envisioned by the Sandy South Jordan Circulator Study), operation of a one-seat TRAX Blue Line ride from points north to FrontRunner South Jordan would be incredibly complex due to the existing and planned development at the Sandy Civic Center Station. To accommodate a one-seat ride without a transfer, a third track would be required with a modified station platform. Additional trackwork and significant operational challenges would occur to operate a split in the line at Sandy Civic Center. In addition, there would be a high potential of property impacts due to the horizontal curvature required to access the reserved median space within the roadway.
 - **I-15 crossing structure to FrontRunner South Jordan** – To accommodate the desired east-west alignment through Cairns (from Sandy South Jordan Circulator Study) and turning radii necessary for LRT to cross I-15 and connect to FrontRunner South Jordan, there would be significant built environmental property impacts (specifically to a planned large tax-generating parcel under development). BRT has more flexibility than LRT because a bus can traverse steeper grades and can navigate tighter radius turns. Additional east-west alignment options could be explored but would deviate from desired alignment across Cairns and may also experience similar built environment constraints.

FRONTRUNNER SOUTH JORDAN TO FRONTRUNNER DRAPER CONNECTION

Level 1 alternatives analysis considered a connection between FrontRunner South Jordan and FrontRunner Draper (Figure 9-2). Key findings for this segment included:

- Redundancy with existing FrontRunner service.
- Limited destinations to serve with limited ridership potential.
- Development/redevelopment opportunities in this section are more limited compared with other key economic development opportunities identified in the study area.

North Connection Recommendation

The connection between Sandy Civic Center Station and FrontRunner South Jordan would provide a critical east-west connection between TRAX and FrontRunner and improve mobility in downtown Sandy within the Point of the Mountain area.

A connection between FrontRunner South Jordan and FrontRunner Draper may be explored as a complementary project in the future as conditions and regional interest warrant.

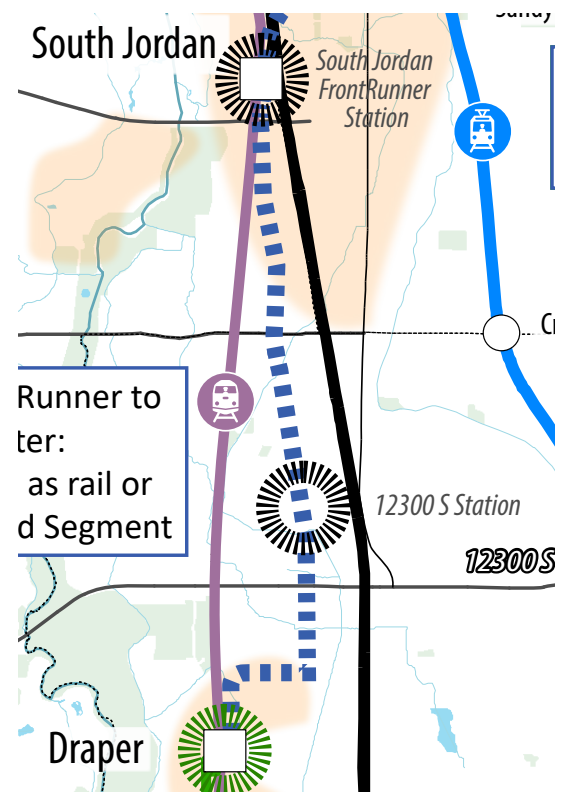


Figure 9-2. FrontRunner South Jordan to FrontRunner Draper Connection

TRAX DRAPER TOWN CENTER EAST CONNECTION

A connection between TRAX Draper Town Center Station to Highline City Center was explored in the LRT East and BRT East alternatives that were explored during Level 1 alternatives analysis (Figure 9-3). Both LRT and BRT follow existing UTA owned right-of-way along this section. The section could be pursued as with BRT or LRT regardless of the mode choice made in the Common Ground Segment. However, due to the primarily residential nature of this segment, ridership opportunities are limited. In addition, public opposition expressed during previous environmental impact statement work and this transit study indicates this investment could be controversial.

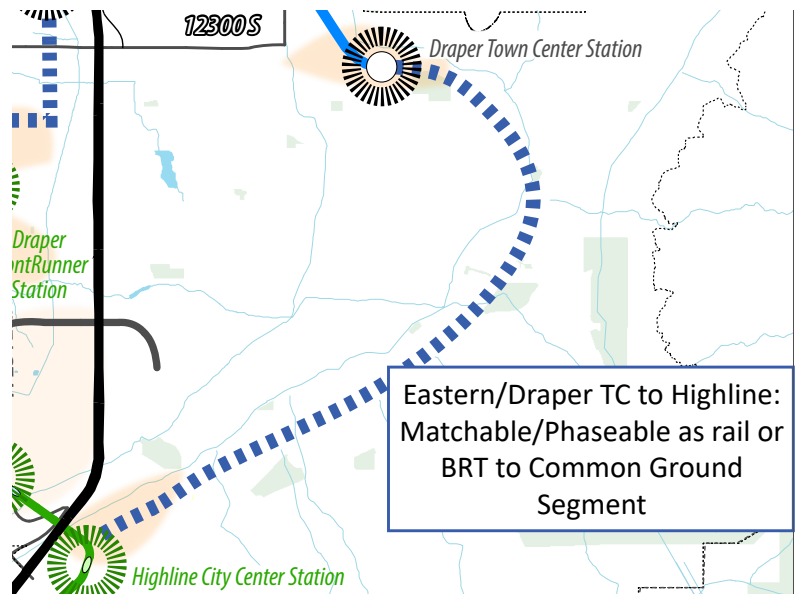


Figure 9-3. Draper Town Center to Highline City Center Connection

East Connection Recommendation

This connection may be explored as either BRT or LRT as conditions and regional support warrant.



Appendix A

Public Involvement Report



Appendix B

Level 1 Evaluation Ratings



Appendix C

Porter Rockwell Feasibility Memorandum



Appendix D

Level 2 Evaluation Ratings



Appendix E

Case Studies



Appendix F

Ridership Memorandum



Appendix G

Station Area Portraits



Appendix H

Funding Memorandum