

ERIN MENDENHALL
Mayor



DEPARTMENT of COMMUNITY
and NEIGHBORHOODS

Blake Thomas
Director

CITY COUNCIL TRANSMITTAL

Lisa Shaffer (Nov 9, 2022 15:39 MST)

Lisa Shaffer, Chief Administrative Officer

Date Received: 11/09/2022

Date sent to Council: 11/09/2022

TO: Salt Lake City Council
Dan Dugan, Chair

DATE: November 9, 2022

FROM: Blake Thomas, Director, Department of Community & Neighborhoods

SUBJECT: Local Link Study Adoption

STAFF CONTACT: Lynn Jacobs, Transportation Engineer, lynn.jacobs@slcgov.com, 801-367-3358.

DOCUMENT TYPE: Ordinance

RECOMMENDATION: Recommend that City Council Adopt the Local Link study as an addendum to the 2103 Sugar House Circulation and Streetscapes Amenities Plan

BUDGET IMPACT: None

BACKGROUND/DISCUSSION: The Local Link study has completed an update to the original Sugar House circulation plan from 2013 and a Transit Alternatives Analysis evaluating various transit options that would connect Sugar House to Millcreek and Holladay. The Transportation Division requests that this study be adopted as a formal plan.

PUBLIC PROCESS:

- Postcards to property owners in Sugar House, Millcreek, South Salt Lake and Holladay
- Multiple Social Media pushes throughout the 2-year planning process
- Multiple engagements with Sugar House Community Council Meetings from 2020 through 2021
- Presentations to Millcreek, Holladay and South Salt Lake City Councils
- Two Facebook Live Events hosted by Salt Lake City
- Yappy Hour Tabling Event in July 2021
- Multiple Surveys w/ community input and feedback

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- 1,200 responses to our final survey
- Lawn Signs and Pavement Stickers
- Media Coverage (KSL Radio, Fox 13, KUTV, ABC 4)

For the circulation study elements, the public process demonstrated support for the recommendations, and helped the project team prioritize projects that have been proposed

For the transit element, the majority of support was for Streetcar on Highland Drive

These studies were presented to Planning Commission on July 27, 2022. Public Comment was also received at that time. Planning Commission has forwarded a positive recommendation to City Council to adopt this plan.

EXHIBITS:

- 1) Local Link Circulation Study
- 2) Local Link Transit Alternatives Analysis
- 3) Local Link Ordinance

EXHIBIT 1: Local Link Circulation Study



April 11, 2022

Local Link Study

The 2020 Circulation Study (2020 Study) was prepared for the Local Link Project to better understand how people travel in and around the Sugar House Business District. With the projected growth and increasing development pressures in Salt Lake City, South Salt Lake, Millcreek and Holladay, it was critical to plan for multimodal transportation choices including transit, bicycle, and pedestrian options, and improvements to existing roads.

The purpose of the 2020 Study was to evaluate and accommodate transportation options and identifying gaps and barriers that create challenges for efficiently traveling through and around the study area. To assess multimodal opportunities, challenges, and needs to the Sugar House Business District, the following topics were analyzed: key destinations, land use density, planned construction projects, bicycle and pedestrian networks, safety, transit network, and freight networks.

In 2013, the Salt Lake City Redevelopment Agency (RDA) developed the Circulation and Streetscape Amenities Plan for the Sugar House Business District (2013 Study). The 2020 Study is not intended to supersede the 2013 Study. The goals of the 2013 Study were to provide recommendations that could improve local and regional mobility and access while retaining the special character of the Sugar House community. The 2020 Study provides a deeper dive for interim opportunities within the core Sugar House Business District. By providing diverse transportation options, the partner communities can increase the resiliency, flexibility, and sustainability of the transportation network.

Sincerely,

Lynn Jacobs, PE
Transportation Engineer

LOCAL LINK CIRCULATION STUDY 2020

November 30, 2020



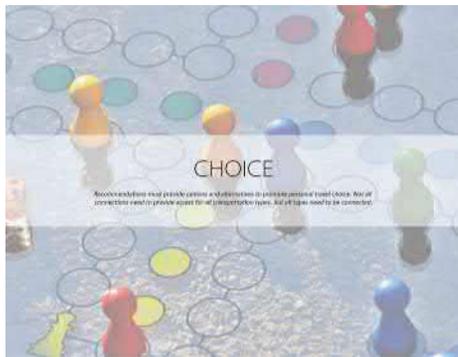
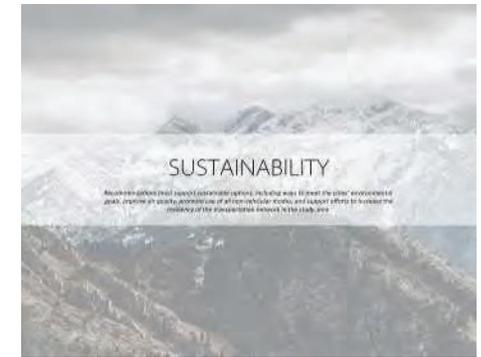
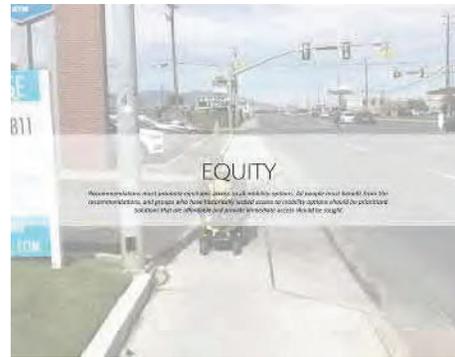
Executive Summary

Salt Lake City, South Salt Lake, Millcreek and Holladay collaborated on the Local Link Circulation Study to better understand how people travel in and around the Sugar House Business District. With each partner community facing increasing development pressures and growth, it is critical to plan for multimodal transportation choices including transit, bicycle and pedestrian options, and improvements to existing roads. By providing diverse transportation options, the partner communities can increase the resiliency, flexibility, and sustainability of the transportation network. The purpose of the Local Link Circulation Study is to evaluate and accommodate transportation options (walking, bicycling, transit, automobile) and identify gaps and barriers that make it difficult for people to efficiently travel through and around the study area.

THE JOURNEY THAT PEOPLE MAKE TO GET FROM ONE ATTRACTION TO THE NEXT MUST BE AS ENJOYABLE AS THE PLACE THEY ARE GOING.

Guiding Principles

There are several guiding principles for improving multimodal connections in the study area, including:



The Vision

These guiding principles were developed collaboratively by the partner communities and support the following vision for transportation in and around the Sugar House Business District:

The transportation network that connects to the Sugar House Business District will be safe, inviting, sustainable, and provide comfortable travel choices for everyone. It promotes a connected network between local neighborhoods and regional centers in South Salt Lake, Millcreek, and Holladay to the Sugar House Business District. Active and Public transportation connections to schools, neighborhood centers, parks, and other public attractions are prioritized.

Existing Conditions

To assess multimodal opportunities, challenges, and needs to the Sugar House Business District, the planning team analyzed a variety of topics, including:

- **Key Destinations** such as the Sugar House Business District, Millcreek City Center, Brickyard, or South Salt Lake Downtown
- **Land Use Density** indicating high demand areas for trips
- **Planned construction projects**, such as road reconstructions, utility projects, or other capital projects that may offer opportunities to reprogram streets or corridors to provide more diverse transportation options
- **Bicycle and pedestrian networks** identifying where active transportation infrastructure investment may be missing or inadequate
- **Safety** including bicycle and pedestrian crash history throughout the study area
- **Transit network** illustrating potential first-last mile priority locations
- **Freight networks** illustrating corridors that may have special operational considerations for freight traffic

Public Engagement

Public outreach efforts were divided into two phases: 1) Existing Conditions and 2) Recommendations. The Existing Conditions phase was focused on learning from locals about opportunities and barriers to walking and biking in and around the study area, while the Recommendations phase was geared towards getting feedback on recommended projects, policies, and programs. In both phases, methods for public input included online surveys and online interactive maps.

Key Needs and Priorities

Based on the existing conditions analysis and public engagement, several key needs and priorities emerged. These included site and corridor-specific needs at intersections or roadways, but also global needs throughout the study area.

Location-specific needs include:

- Global Address gaps in Parley's Trail through the Sugar House Business District and South Salt Lake Downtown
- Address east-west connectivity into Sugar House for active transportation users on 2100 S, 2700 S, and 3300 S
- Address connectivity between the Sugar House Business District and Brickyard/Millcreek City Center
- Improve pedestrian conditions at various intersections throughout the study area

Global needs include:

- Improved first-last mile improvements
- More convenient and secure bike parking
- Comprehensive wayfinding signage
- Comprehensive traffic calming on local streets
- Improved pedestrian realm elements including street trees, site furnishings, and public art, and other placemaking features

Final Project Recommendations

PROJECTS

The Local Link Circulation Study analysis revealed several corridors and spots in need of capital improvements. These range from trail alignments with supporting infrastructure to the addition of bicycle lanes in gap areas to improved intersections for pedestrians and cyclists to the creation of complete streets.

Five priority projects are highlighted.



Corridor Improvement



Spot Improvement



1 Parley's Trail alignment through the Sugar House Business District should provide riders an enjoyable and intuitive experience.



2 Complete street improvements along 2700 South will fill a gap along a major east-west active transportation corridor.



3 Complete street improvements between Sugar House BD and Millcreek City Center for seamless AT connection between centers.



4 Improved active transportation along 3300 South can address a gap in infrastructure and improve safety in a dangerous environment.



5 Parley's Trail alignment through South Salt Lake Downtown can create a more direct and intuitive connection to Central Pointe TRAX station.



6 Complete street improvements along 2100 South may be considered to add additional connectivity along a major SH corridor.



7 Two-way bike lanes around Sugarhouse Park would allow easier navigation to and around SHBD across the Park.



8 Improved intersections at various complete street intersections.



Final Program & Policy Recommendations

PROGRAMS & POLICIES

Improving circulation and connectivity in the study area will require a variety of improvements. In addition to project or capital improvements, there must be programs and policies that support the new big ideas proposed.

Programs should be overarching, coordinated and span multiple jurisdictions. They will likely require dedicated staff and budgets for startup and maintenance.

Policies will require city ordinances to change or be created to enable the implementation of new ideas.

The eight program and policy recommendations highlighted on the right will help enhance the pedestrian and cycling environment and improve overall circulation in the study area.



1 Creative placemaking in Sugar House Business District, especially along Highland Drive, will improve walkability and vibrancy.



2 Green conflict markings on regionally significant bikeways can help highlight conflict zones and raise awareness of people on bicycles.



3 Comprehensive wayfinding and signage eases navigation, enriches our experience, enhances branding, and reinforces key destinations.



4 Additional bike parking throughout the study area will make it more accessible and inviting to cyclists.



5 Trail Oriented Development Guidelines that detail ways trails can activate and enrich urban environments.



6 Traffic calming policies can reintroduce City measures to help encourage slower speeds on roadways.



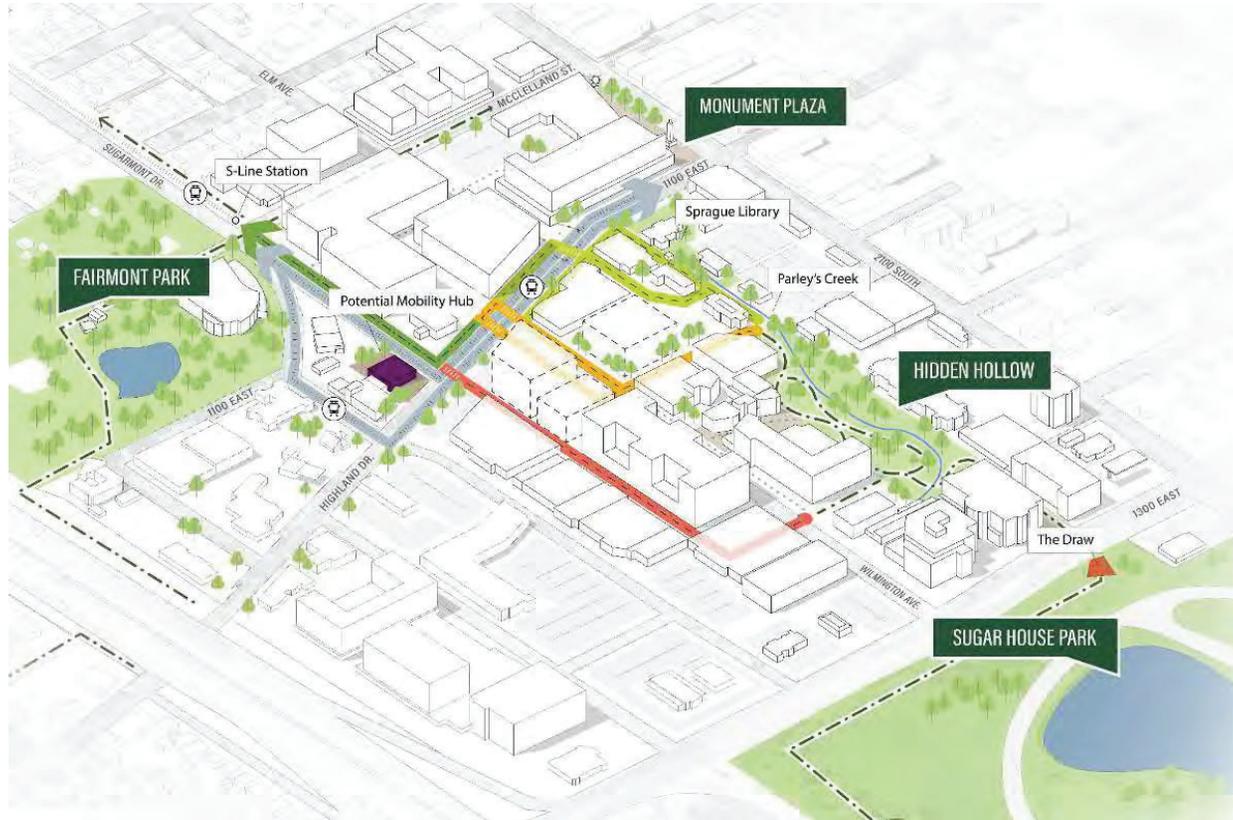
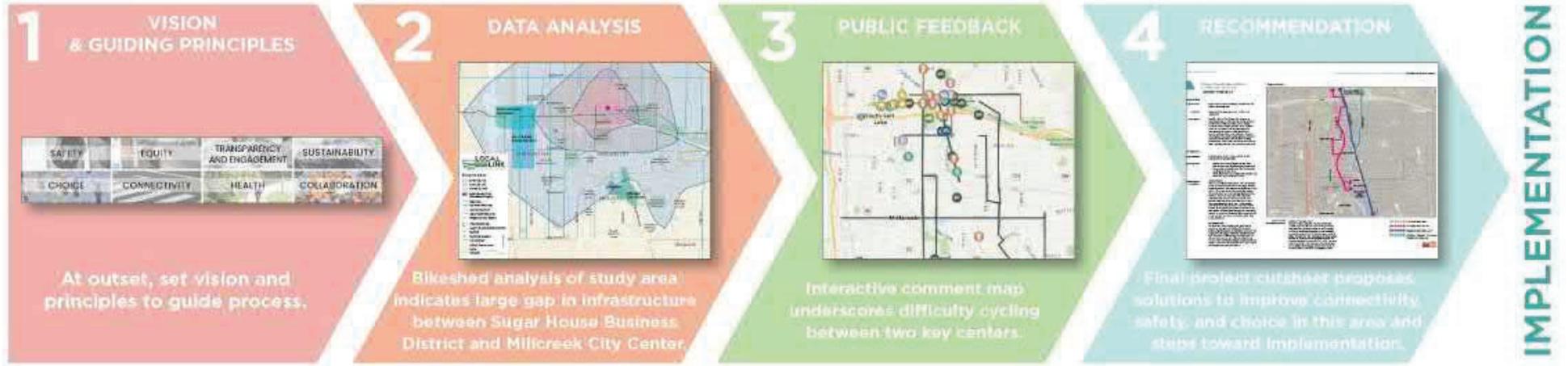
7 Develop mobility hubs at key locations where Frequent Transit Network (FTN) interfaces with major destinations or where FTN routes intersect.



1. **Creative Placemaking**
2. **Green Conflict Markings on Regionally-Significant Bikeways**
3. **Wayfinding & Signage**
4. **Bicycle Parking**
5. **Trail Oriented Development**
6. **Coordinated Traffic Calming Strategy**
7. **Micromobility Infrastructure and Mobility Hubs**

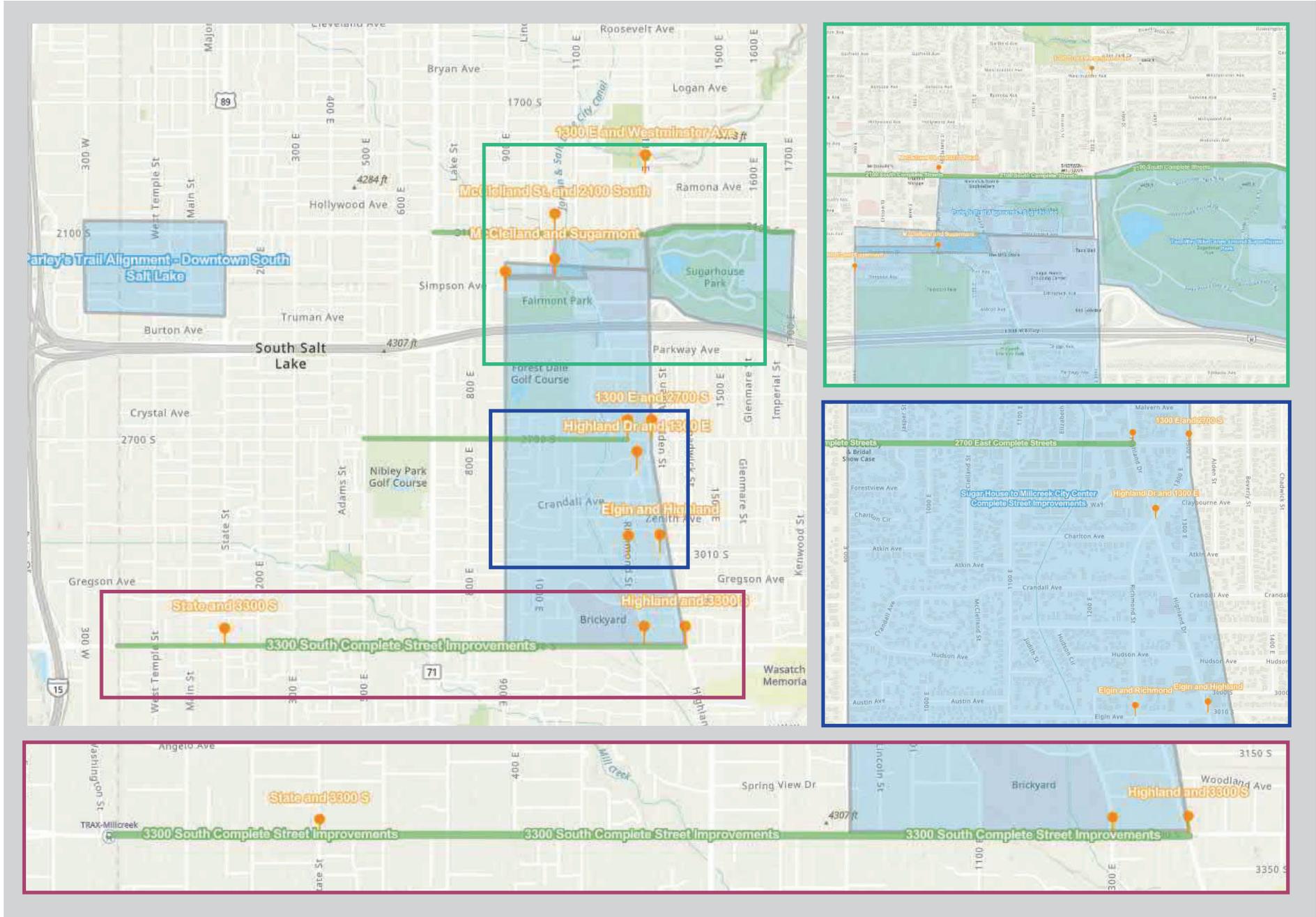
**More information about each recommendation can be found in the appendix*

Process Overview



The maps below illustrate final recommendations for improving circulation in the Study Area.

Figure 1. Recommendations



Background Data

The following maps depict the existing conditions within the study area.

Key Points in the Study Area

The study area includes three existing or developing central business districts or downtowns in the Salt Lake Valley.

Sugar House Business District

Since the 2013 Circulation Study in this area, the Sugar House Business District has seen tremendous transformation and continues to. The area south of 2100 South, north of I-80, east of 900 East, and west of 1300 East, has had significant redevelopment of new shopping, housing, hospitality, and office space. The new development is denser, more compact, and has an overall urban feel.

South Salt Lake Downtown

South Salt Lake is building a downtown city center across 235 acres at the northeast corner of where I-80 and I-15 meet. Over the course of its development, the City expects more than 2,500 new multi-family housing units, 1.5 million square feet of retail and 3 million square feet of office/commercial space, plus parks, a greenway, Parley's Trail, and cultural and social attractions.

Millcreek City Center

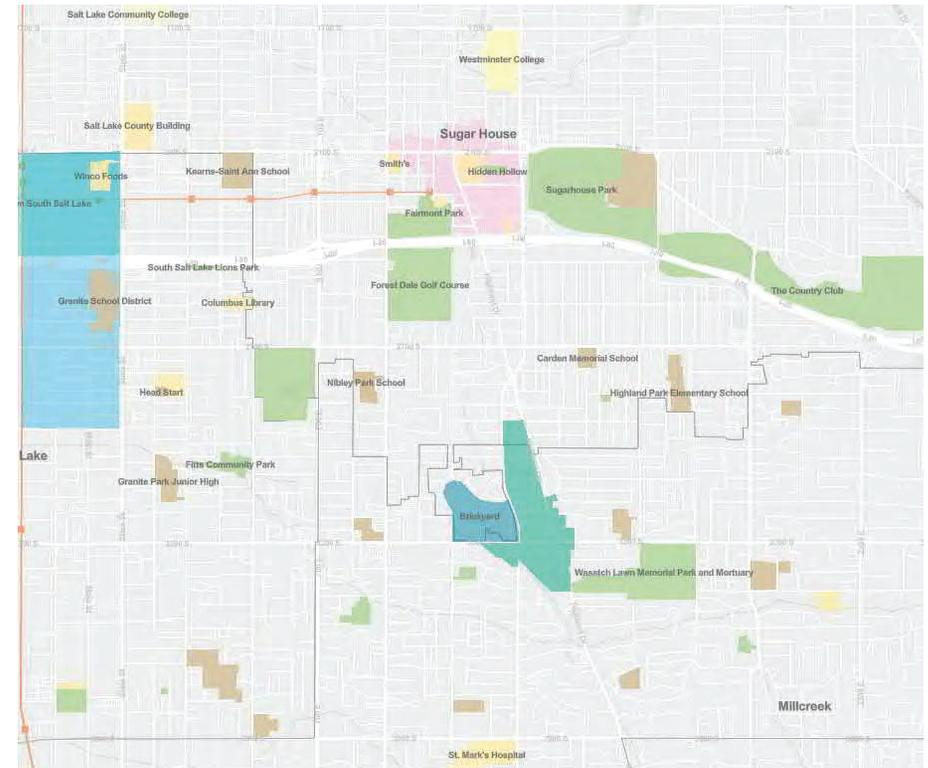
The newly incorporated City of Millcreek is also building a city center. Its city center will be located north of 3300 South, between Highland Drive and 1300 East. It will feature a prominent and vibrant multi-use open space at its center with mixed uses including office, residential, retail, and civic buildings surrounding it. It will include over 100,000 square feet of office, over 40,000 square feet of retail, and over 450 multifamily units over the next decade.

The land uses in and between these three centers includes a broad mix of commercial, office, residential, and industrial (in South Salt Lake). In addition to the general land uses described above, there are a number of other destinations in the study area:

- 2 Colleges (Salt Lake Community College, Westminster College)

- 17 K-12 Schools (3 High Schools, 2 Junior High Schools, 11 Pre-K & Elementary Schools, 1 School for the Deaf and Blind)
- 10 Parks
- 2 Libraries (Sprague Branch Public Library, Millcreek Community Library)
- 3 Hospitals or Health Clinics (University of Utah Health Clinic - Sugar House, St. Mark's Hospital, South Main Public Health Center)
- 3 Community or Recreation Centers (Fairmont Aquatic Center, Columbus Center, Central Park Community Center)
- Salt Lake County Government Center
- South Salt Lake Creative Industries Zone
- Entertainment and Shopping Areas (Brickyard Shopping Center, Sugar House Shopping Center, Century 16 Theater, Cinemark Theatre)

Figure 2. Key Study Area Locations



Parley's Trail and S-Line Corridor

In addition to the point and district destinations and features of the study area, Parley's Trail and the S-Line Corridor currently define a prominent transit and active transportation corridor running east-west between the Sugar House Business District and South Salt Lake's Downtown.

Ongoing and Planned Construction

Salt Lake City, South Salt Lake, and Millcreek have a number of upcoming and ongoing road construction projects. The map shows six classifications of construction projects: bus stop improvements, road reconstruction projects, trail projects, road restriping projects, road resurfacing projects, and water storm and sewer projects. This study can take advantage of this future construction work to make recommendations that may inform some of the final designs selected for each of these roads. Specific improvements are listed below by construction year:

2020

- Reconstructing Elizabeth Street - Stratford Avenue to Whitlock Avenue
- Reconstructing Zenith Avenue - 800 East to 900 East
- Reconstructing Parkway Avenue - Elizabeth Street to Highland Drive
- Canal Replacement & Green Infrastructure Improvements - Wilmington Avenue to Ashton Avenue
- Route 21 Bus Stop Enhancements

2021

- Reconstructing 900 East - Hollywood Avenue to 2700 South
- Resurfacing Highland - Warnock to Salt Lake City line

2023

- Reconstructing 1100 East / Highland Drive - Ramona Avenue to Warnock Avenue
- Reconstructing Ashton Avenue - 1100 East to Highland Drive
- Reconstructing 1000 East - Atkin Avenue to 2700 South
- Reconstructing Lincoln Street - Elm Avenue to 2100 South
- Reconstructing Meadow Lane - Green Street to 700 East

- Reconstructing Gregson Avenue - 900 East to Lincoln Street
- Reconstructing Simpson Avenue - 1100 East to Highland Drive

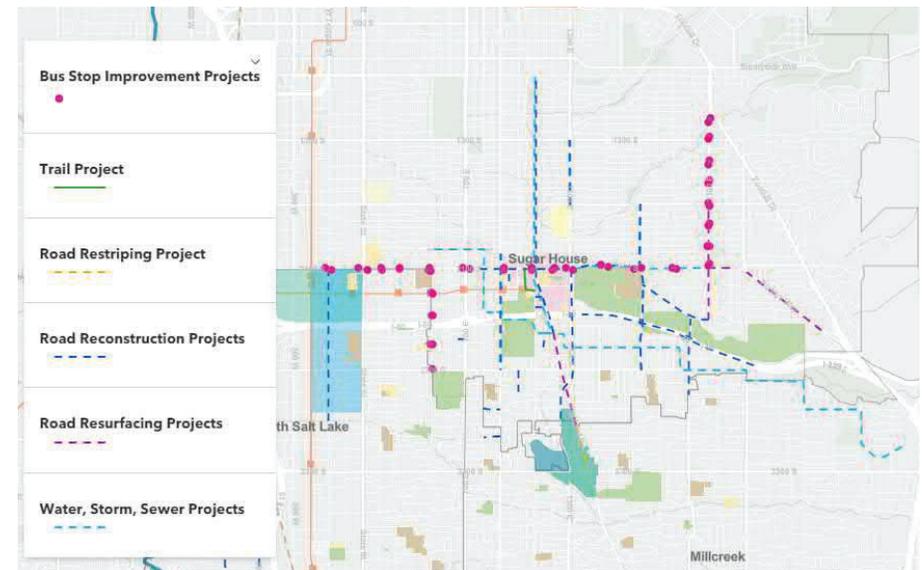
2024

- Reconstructing 1300 East - 2100 South the Salt Lake City Boundary

2025

- Reconstructing 2100 South - 700 East to 1700 East

Figure 3. Ongoing and Planned Construction



Land-Use Density

The following four maps illustrate existing and future land use density in the study area. Together, they illustrate areas of higher building density located in and around the Sugar House Business District, much of the South Salt Lake Area adjacent to I-80, and property in and around the Brickyard Shopping Center and the Millcreek City Center.

This first map illustrates parcel-building density which is the total building square feet divided by the parcel size. It shows the intensity of development on each parcel. The darker the red, the more intense the parcel-building density. Parcels that are not red are likely single family homes with large lots, open spaces and parks, or other parcels with small buildings.

Figure 4. Parcel Building Density

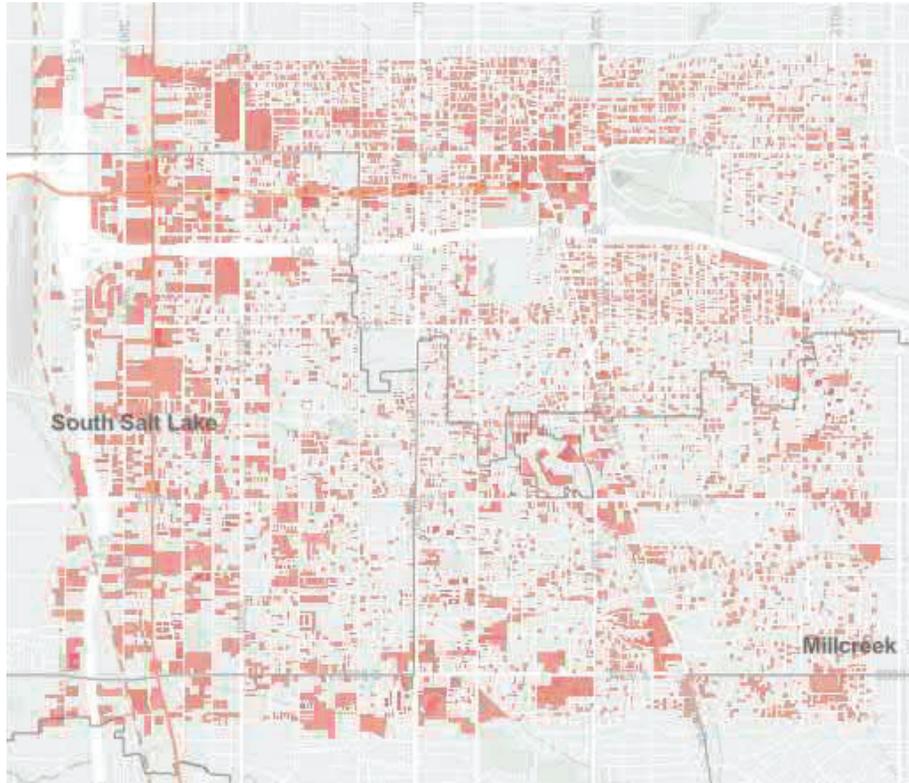


Figure 5 shows parcels with multiple building stories. The darker the red, the more building stories. There is a concentration in the Sugar House Business District, the parcel of the Salt Lake County Building, the area near South Salt Lake’s Creative Industries Zone, and along 3900 South near St. Mark’s Hospital.

Figures 6 and 7 show Household and Office Job estimates according to the Wasatch Front Regional Council’s 2030 projections by transportation analysis zone (TAZ). While households are spread throughout the study area, there appear to be clusters south of 3300 South and north of 2100 South.

The 2030 office projection map shown in Figure 7 shows concentrations in the southeast corner of the Sugar House Business District and the TAZ encompassing the Salt Lake County Building.

Figure 5. Parcels with Multiple Building Stories

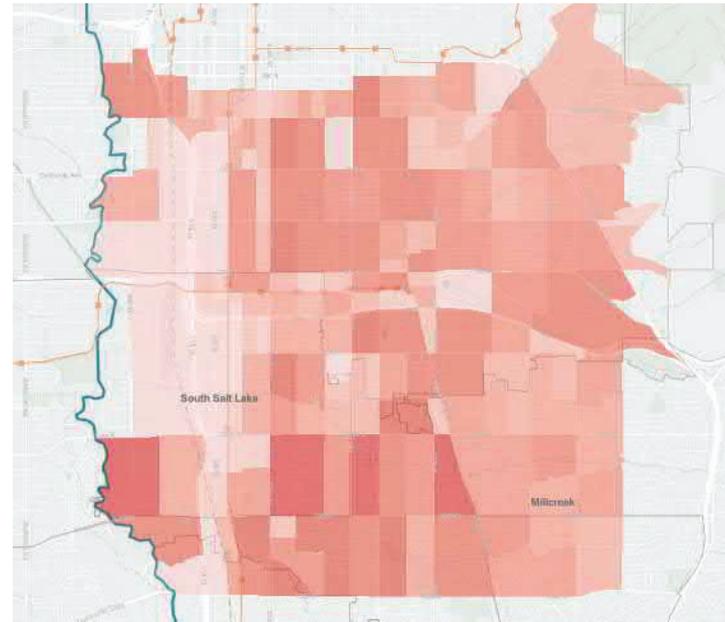


Figure 6. Household Projections

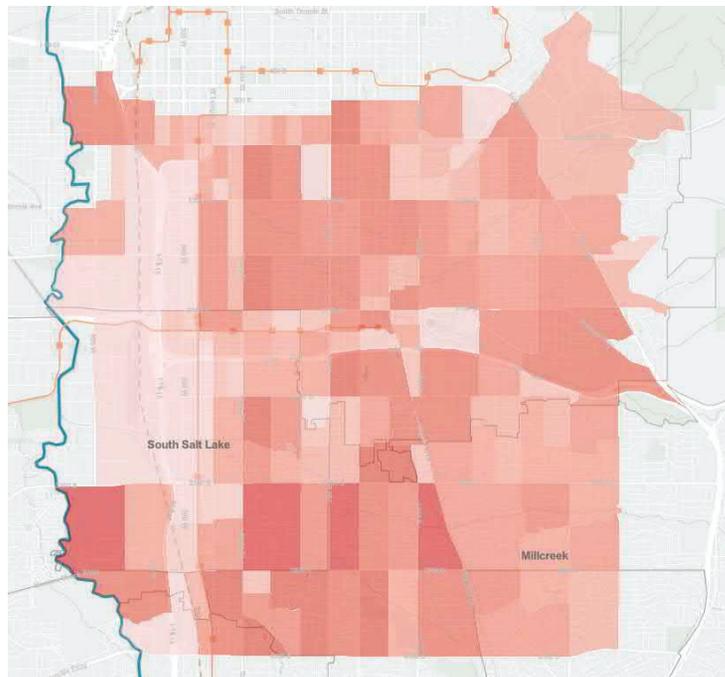
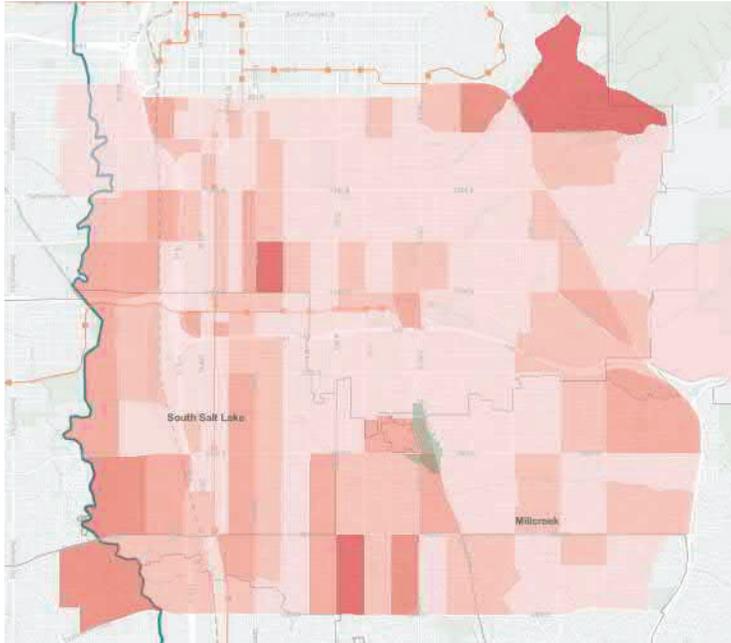


Figure 7. Office Projections



Bicycle Facilities

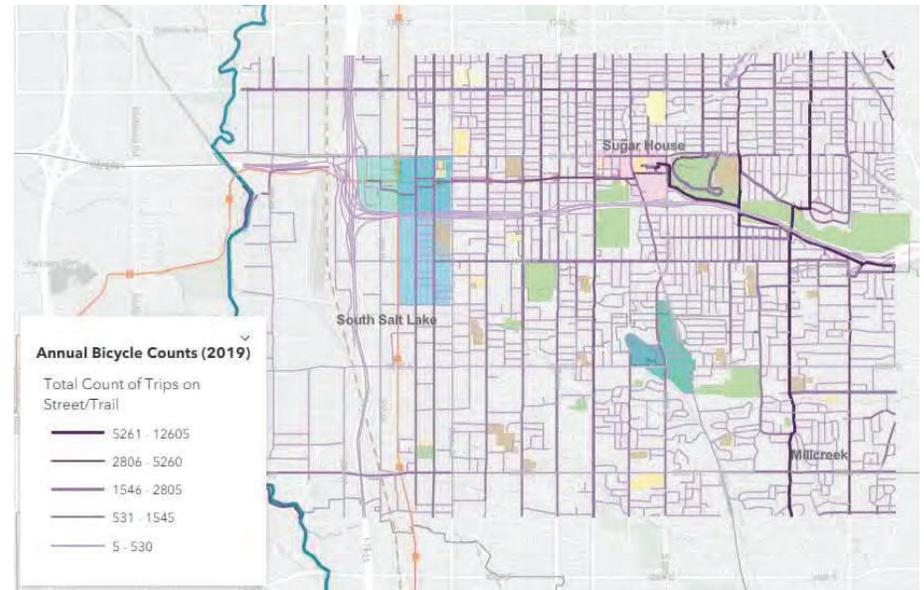
The Sugar House Business District possesses a number of important bikeway connections, shown in Figure 9, offering adjacent neighborhoods convenient access to numerous shopping and entertainment destinations. This includes east-west connections like Parley's Trail and bicycle facilities on 2700 S. The McClelland Trail provides a good north-south route linking Sugar House to the 9th & 9th District. Bicycle facilities are generally deficient in linking the Sugar House Business District to points south including Millcreek City Center and Brickyard. Parley's Trail also possess a vital gap between the Sugarmont TRAX station and "The Draw" where Parley's Trail crosses under 1300 East into Sugar House Park.

Annual Strava Data Bicycle Counts (2019)

The most heavily used corridors by Strava users include Parley's Trail, 1700 South, and 2700 South going east-west. This is likely attributed to the bicycle infrastructure on those roads and trails. Going north-south, there are more corridors used by riders, but the most heavily used are 900 East, 2100 East, and 2300 East south of I-80. Additional routes

that seem to see higher volumes include Main Street, 300 East, 500 East, and 1300 East south of 3300 South.

Figure 8. Strava Bicycle Counts



Bicycle Travelshed Analysis

The planning team analyzed existing bikeways and low-volume roadways suitable for bicycling to understand how accessible the Sugar House Business District is via surrounding neighborhoods based on typical trip durations of 5-, 10-, and 20-minutes. Sugar House Plaza was used as the origin for determining these "travelsheds". Given a gridded street network and ample streets suitable for bicycling, travelsheds would appear diamond-shaped. In Sugar House, east-west connectivity is strong thanks to the existence of Parley's Trail. Connections north towards Westminster and the East Liberty Park neighborhood are also good thanks to the McClelland Trail and several low-volume local streets. Bicycle connectivity begins to breakdown traveling south out of Sugar House. A lack of suitable bicycle facilities on 1300 E or Highland prevents access to Brickyard and Millcreek City Center within the 10- and 20-minute travel sheds. With improved bikeways, it could be possible to easily bike between the Sugar House Business District and Brickyard / Millcreek City Center in as little as 10-minutes.

Figure 9. Bicycle Facilities

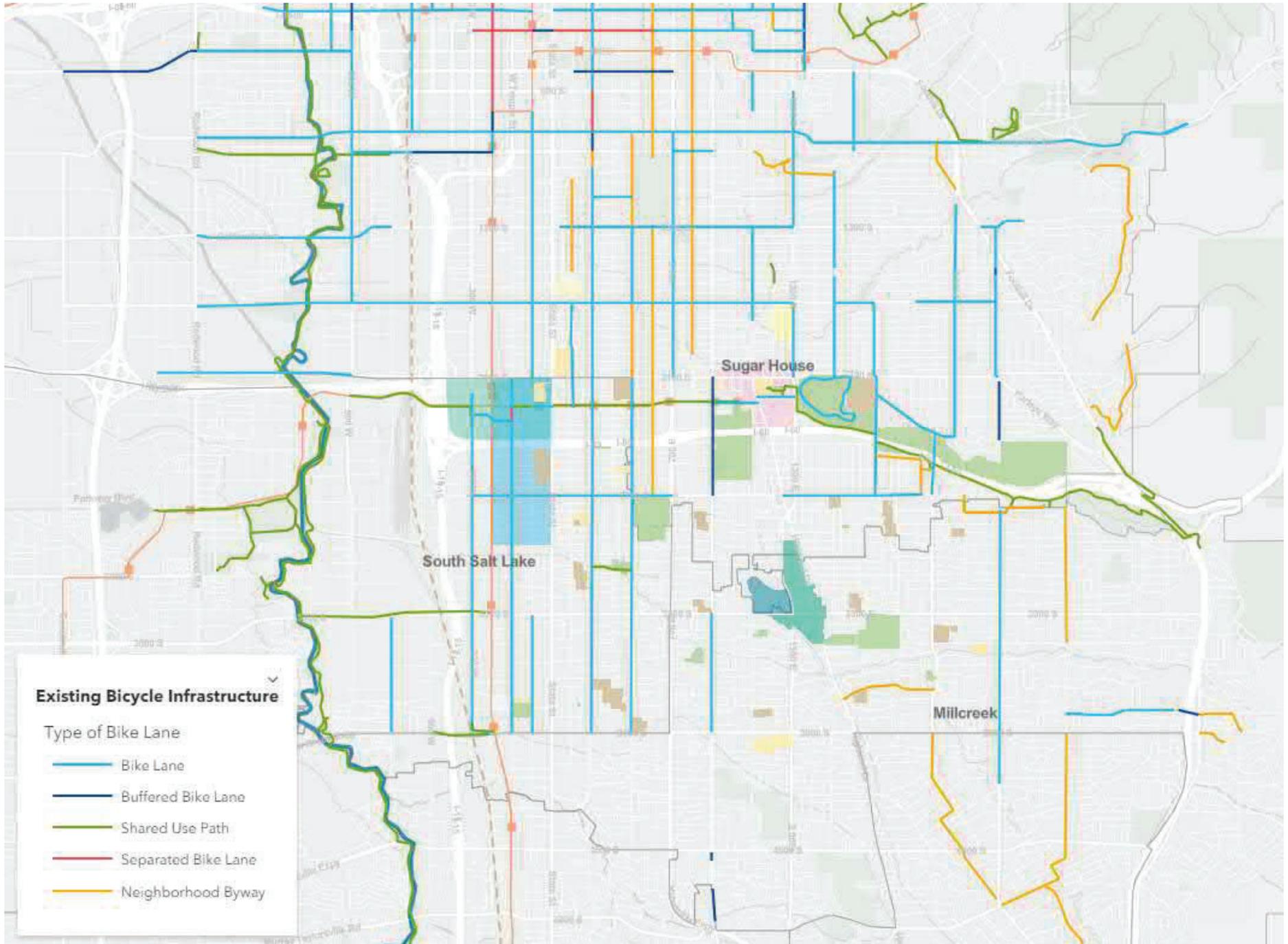
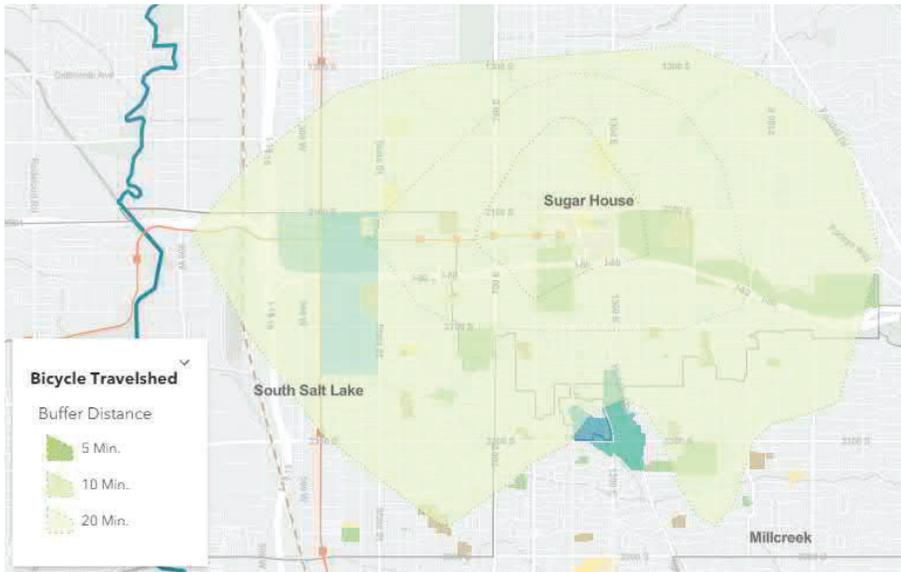
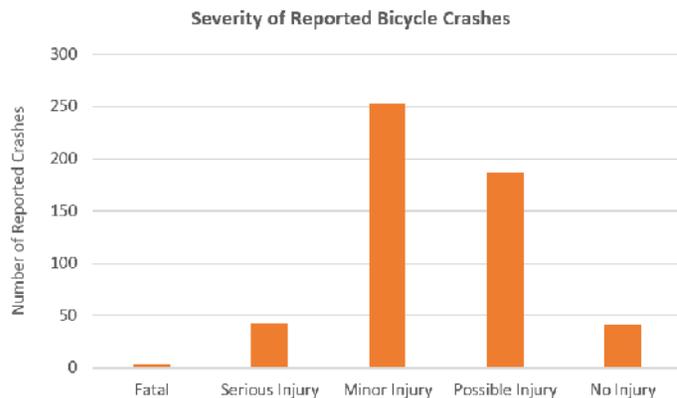


Figure 10. Office Bicycle Travelshed

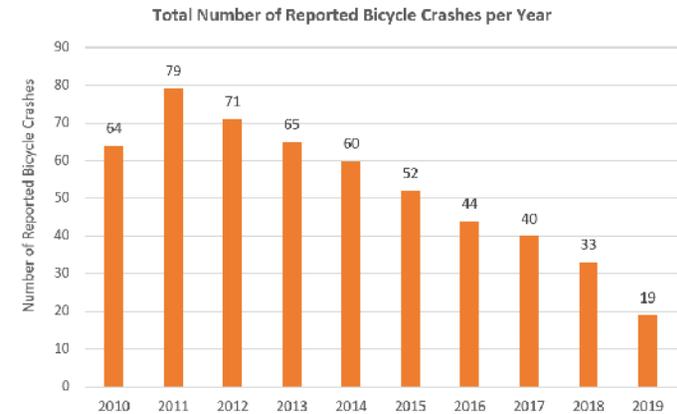


Bicycle Crashes

The planning team analyzed bicycle crashes between 2010 to 2019 by severity, location, year of occurrence, and daylight characteristics. Between 2010 and 2019, there were a total of 527 reported crashes involving bicycles. As shown in Figure 1, 3 of these crashes were fatal; 43 were reported as causing “serious injury;” 253 were reported as causing “minor injury;” 187 were reported as causing “possible injury;” and 41 were reported as causing “no injury.” The three fatal injuries occurred at the intersection of 2100 South and 1200 East, 3300 South and 1570 East, and 900 West and 3100 South.

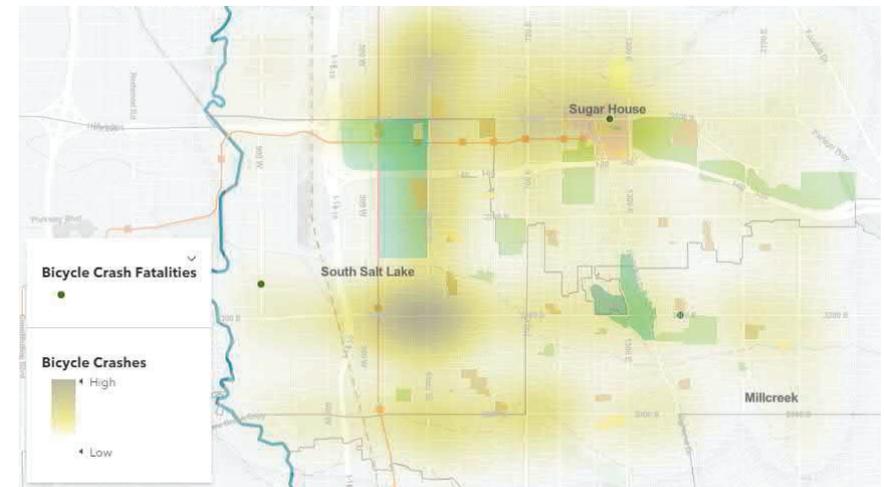


70% (366) bicycle crashes occurred at intersections, while 30% (161) occurred at non-intersections. Only two percent of crashes occurred at a bicycle or pedestrian path intersection. 30% (160) of bicycle crashes occurred on roadways with designated bicycle infrastructure, whereas 70% (367) occurred on roadways without designated bicycle infrastructure, pointing to the importance of developing safe and comfortable bicycle facilities. The majority of crashes occurred on the largest arterial roads such as State Street, 2100 South, and Highland Drive.



Reported bicycle crashes have decreased over time, with earlier years showing higher number of crashes than later years as shown in Figure 2. In 2011, 79 crashes were recorded. In 2019, only 19 crashes were recorded. Note that this could be due to incomplete crash reporting.

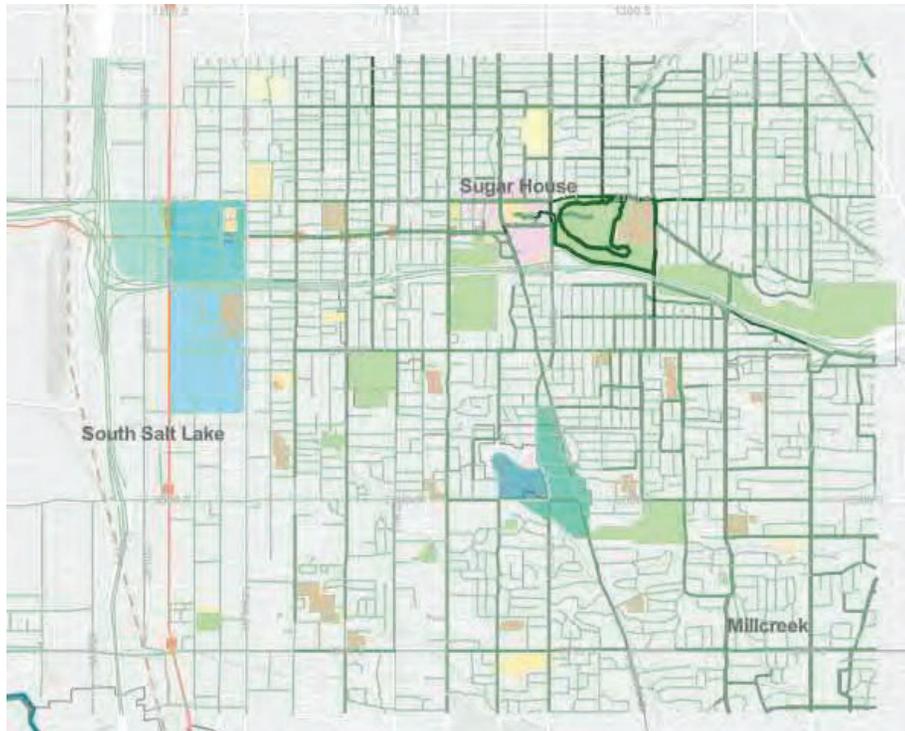
Figure 11. Bicycle Crashes



Annual Strava Data Pedestrian Counts (2019)

The pedestrian count data indicates the heaviest activity in and leading to Sugar House Park, which makes sense given its recreational nature. 1100 East, 2100 South, and the S-Line and Parley's trail also see a fair number of pedestrian counts. More pedestrian activity seems to occur in the northeast quadrant of the study area.

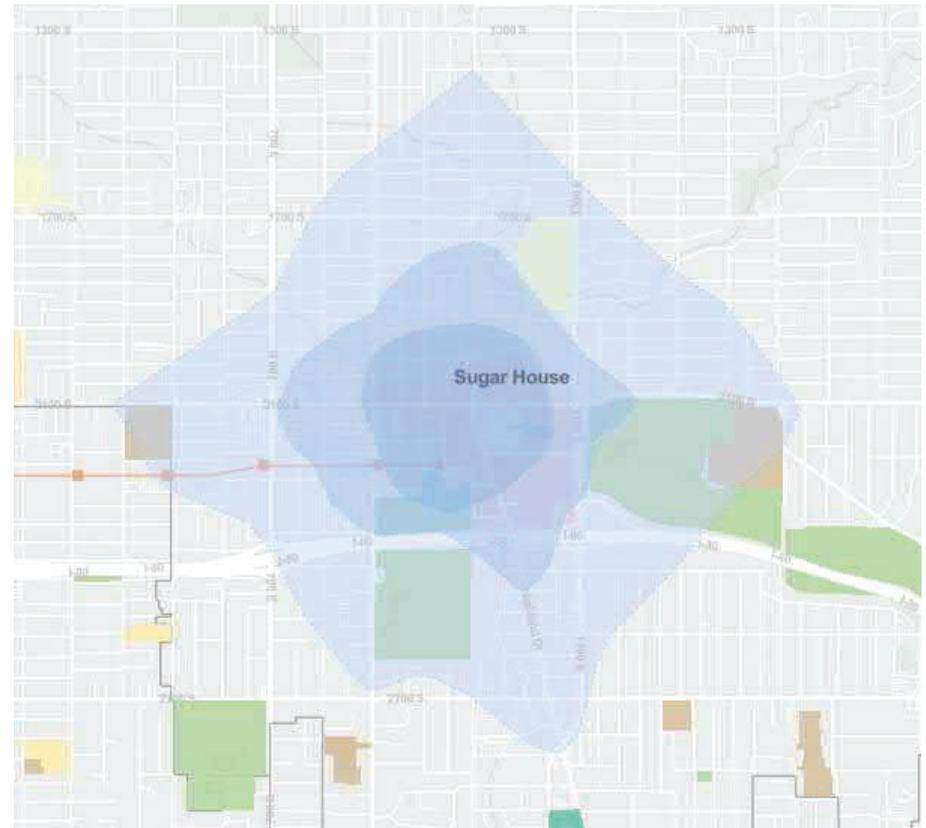
Figure 12. Strava Pedestrian Counts



Pedestrian Travelshed Analysis

The planning team analyzed existing sidewalks suitable for walking to understand how accessible the Sugar House Business District is via surrounding neighborhoods based on typical trip durations of 5-, 10-, and 20-minutes. Sugar House Plaza was used as the origin for determining these “travelsheds.” Given the area’s gridded street network that’s outfitted with sidewalks on most streets, the pedestrian travel shed is roughly diamond shaped similarly to the bicycle travel shed. Connectivity to the north, west, and east is strong thanks to the existence of sidewalks on nearly every street in these neighborhoods. Con-

Figure 13. Pedestrian Travelshed

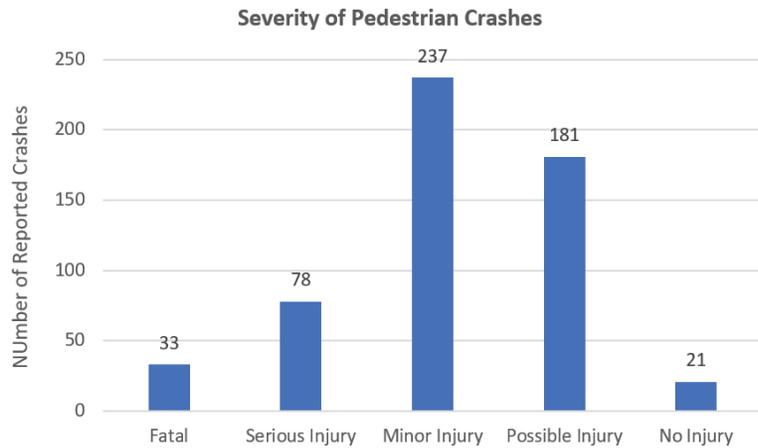


nectivity to the south is weaker due to the lack of sidewalks on some local roads, dead-end cul-de-sacs, and the division of some neighborhoods by Interstate 80. Many roads either dead-end at the Interstate or do not provide adequate walking facilities, presenting a challenge for those walking to the south of the Sugar House Business District. With focused investment on implementing missing sidewalk links and connecting cul-de-sacs, the 20-minute pedestrian travel shed could be expanded to include the Highland Park Elementary School neighborhoods and other nearby areas.

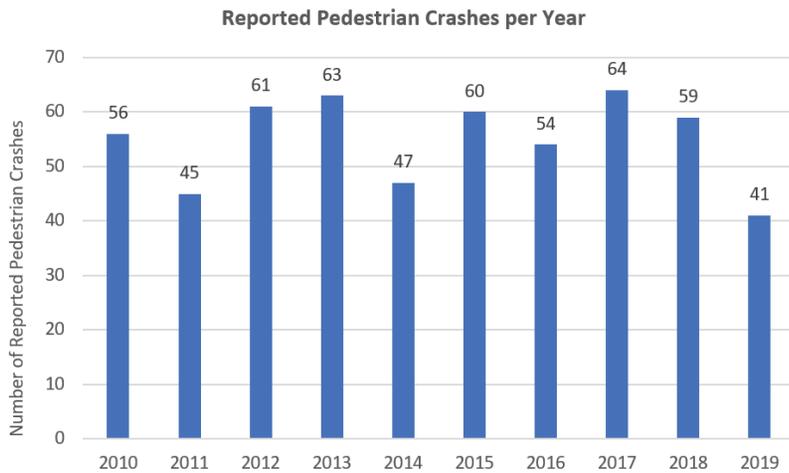
Pedestrian Crashes

The planning team analyzed pedestrian crashes between 2010 to 2019 by severity, location, year of occurrence, and daylight characteristics. Between 2010 and 2019, there were a total of 550 reported crashes involving pedestrians. As shown in Figure 4, 33 of these crashes were

fatal; 78 were reported as causing “serious injury;” 237 were reported as causing “minor injury;” 181 were reported as causing “possible injury;” and 21 were reported as causing “no injury.”

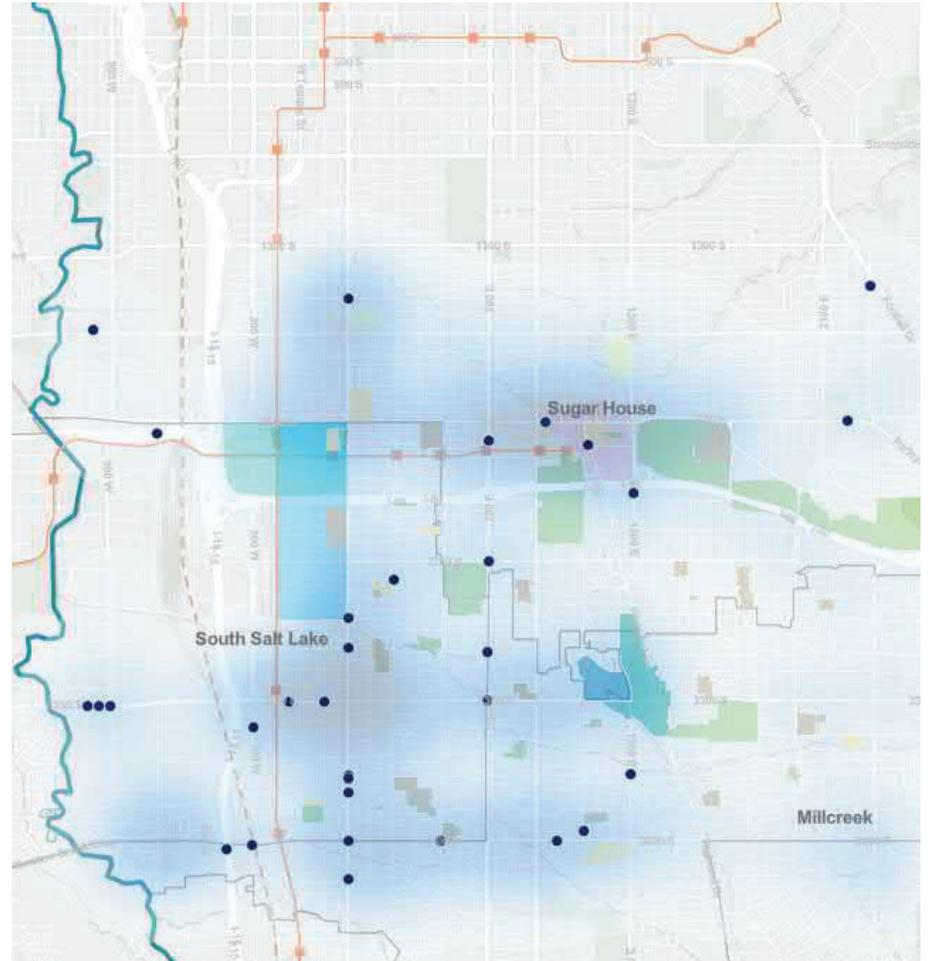


69% (378) of pedestrian crashes occurred at intersections, while 31% (172) occurred at non-intersections. Crashes appear to be centered around commercial areas with high to moderate pedestrian activity, such as the Sugar House Business District, 3300 South, State Street, 2100 South, and State Street.



The number of reported crashes has varied over time, with the majority of crashes occurring in 2017 (64), 2013 (63), and 2015 (60). 2019 showed the lowest number of reported crashes, with only 41 crashes reported. Note that this number could be due to incomplete crash reporting.

Figure 14. Pedestrian Crashes



Transit Connections

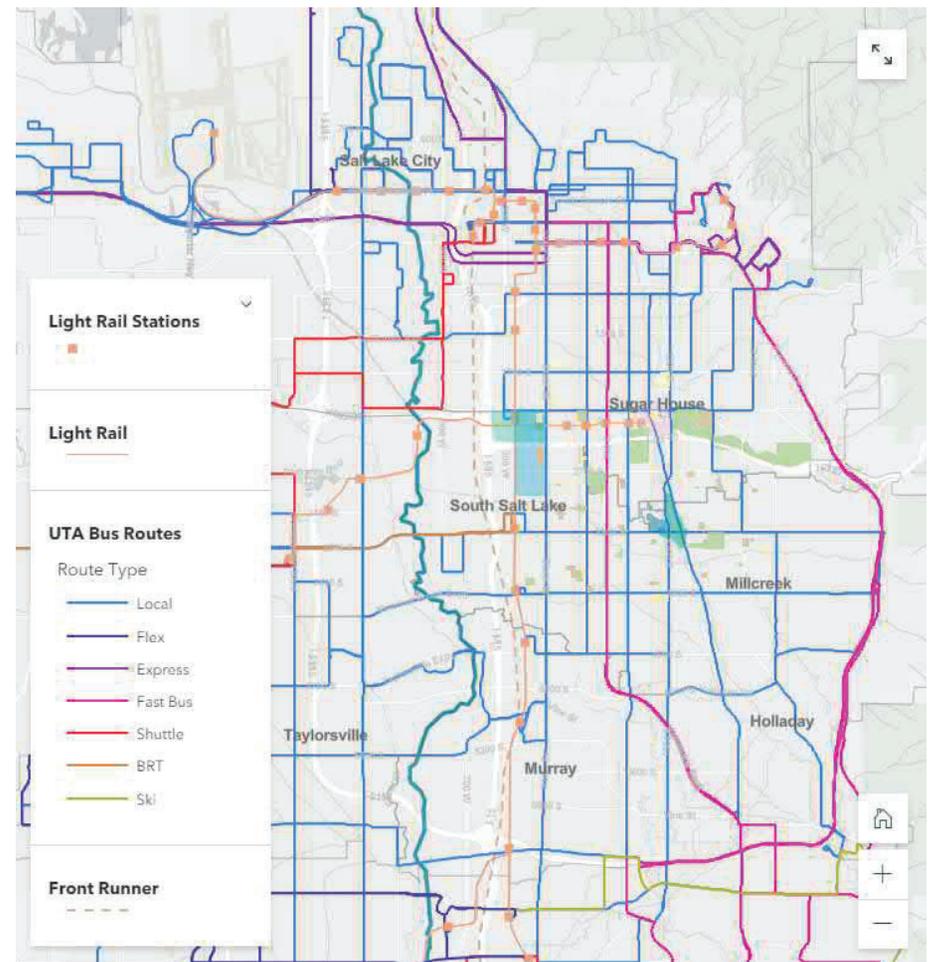
The study area is well served by bus transit with routes running along major north-south and east-west corridors. A summary of the bus routes and their peak period headways in the study area is shown in the table below.

Route	Name	Mode	Peak Frequency
4	400 South	Local Bus	30
17	1700 South	Local Bus	30
21	2100 South	Local Bus	15
33	3300 South	Local Bus	15
35M	MAX - 3500 South	Bus Rapid Transit	15
200	3900 South	Local Bus	15
205	State Street North	Local Bus	15
209	500 East	Local Bus	15
213	900 East	Local Bus	15
220	1300 East / 1100 East	Local Bus	30
223	Highland Drive / 1300 East	Local Bus	15
307	2300 East / Holladay Blvd	Fast Bus	6 Trips
313	Cottonwood Heights Fast Bus	Fast Bus	6 Trips
320	Highland Drive Fast Bus	Fast Bus	4 Trips
354	Sandy / U of U Fast Bus	Fast Bus	6 Trips

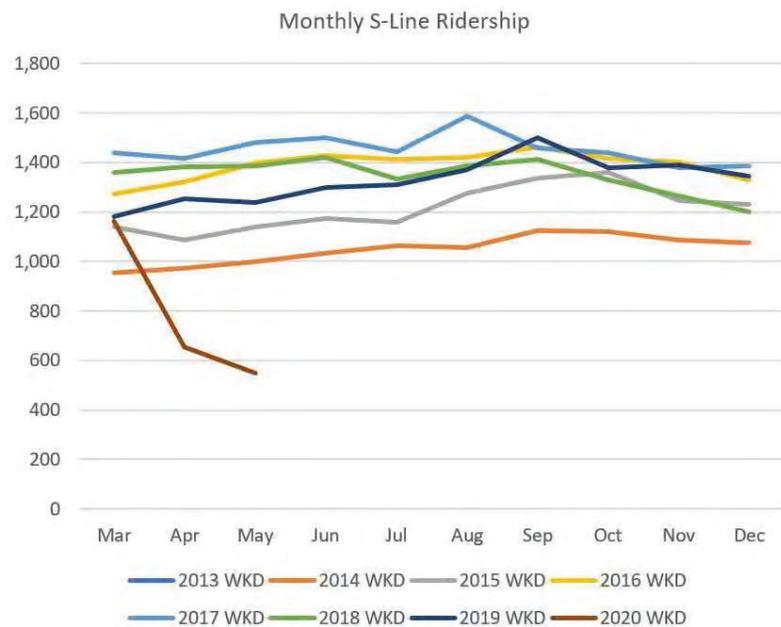
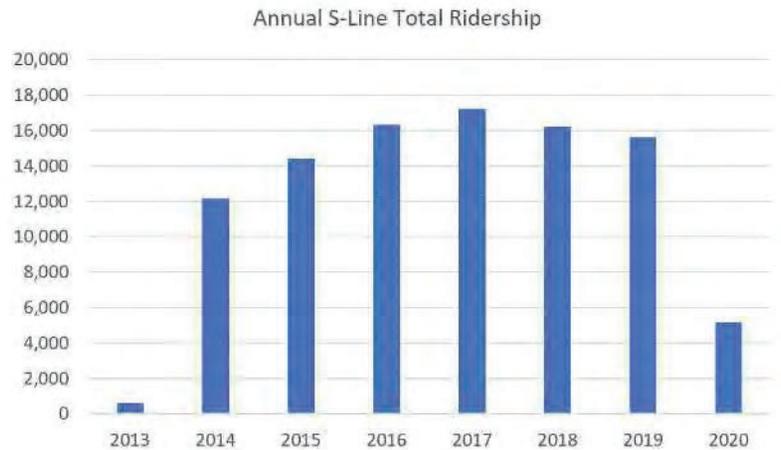
The study area is also served by light rail service including three TRAX lines on the west side and a streetcar (the S-Line) which runs from Central Pointe Station in South Salt Lake to its terminus at Fairmont Station in the Sugar House Business District. At Central Pointe Station, riders can transfer from the S-Line to the Green, Blue, and Red TRAX light rail lines. These lines reach West Valley and the Salt Lake City International Airport, Draper and Salt Lake Central Station, and Daybreak and the University of Utah, respectively. The table on the top right provides a summary of light rail service.

Route	Name	Mode	Peak Frequency
701	Blue Line	Light Rail	15
703	Red Line	Light Rail	15
704	Green Line	Light Rail	15
720	S-Line	Streetcar	15

Figure 15. Transit Network



The two charts below show more detailed information on S-Line ridership. The first shows a steady increase in ridership from 2014 to 2017 and then a slight drop in years 2018 and 2019. The second chart shows that ridership remains steady throughout the months, with slight peaks in August and September.



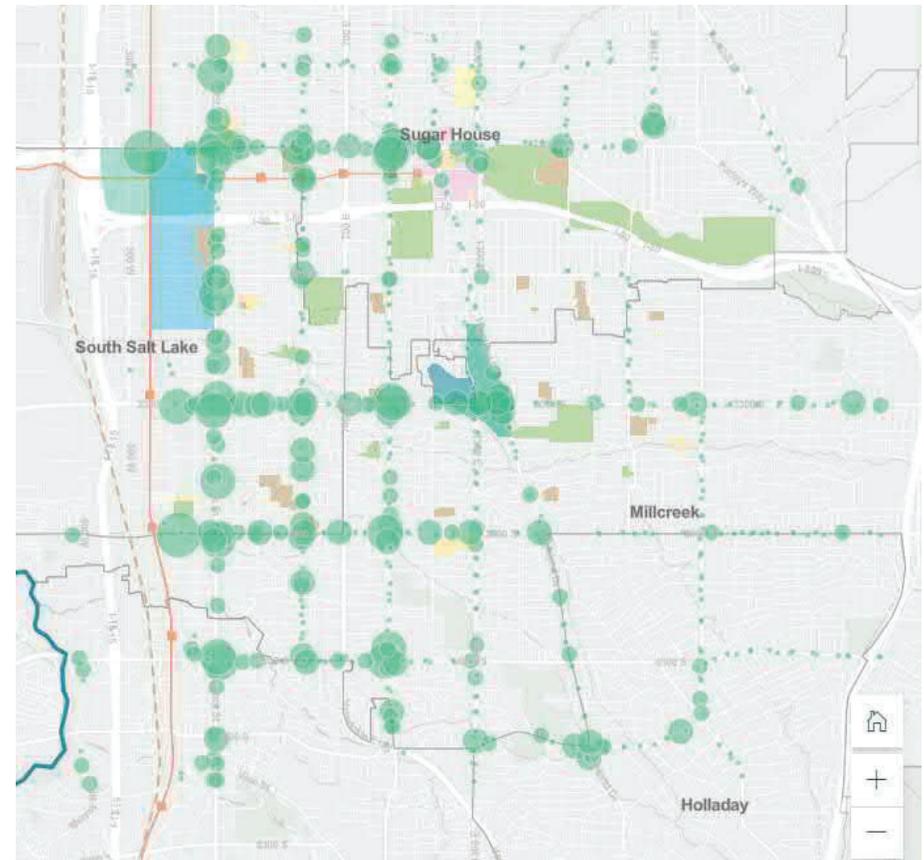
An Alternatives Analysis (AA) study will be conducted following this study to explore extending the S-Line south of its current terminus at Fairmont Station to Millcreek and Holladay, either down Highland Drive or 1300 East or a combination of north-south streets.

The region's heavy rail commuter line, Front Runner, also appears on the map, but is considered out of the study area.

Transit Boardings

The map shows average daily boardings at bus stops and S-Line stations. It shows that the majority of boardings occur along the S-Line, 2100 South, 3300 South, and at major road intersections such as 900 East and 3900 South.

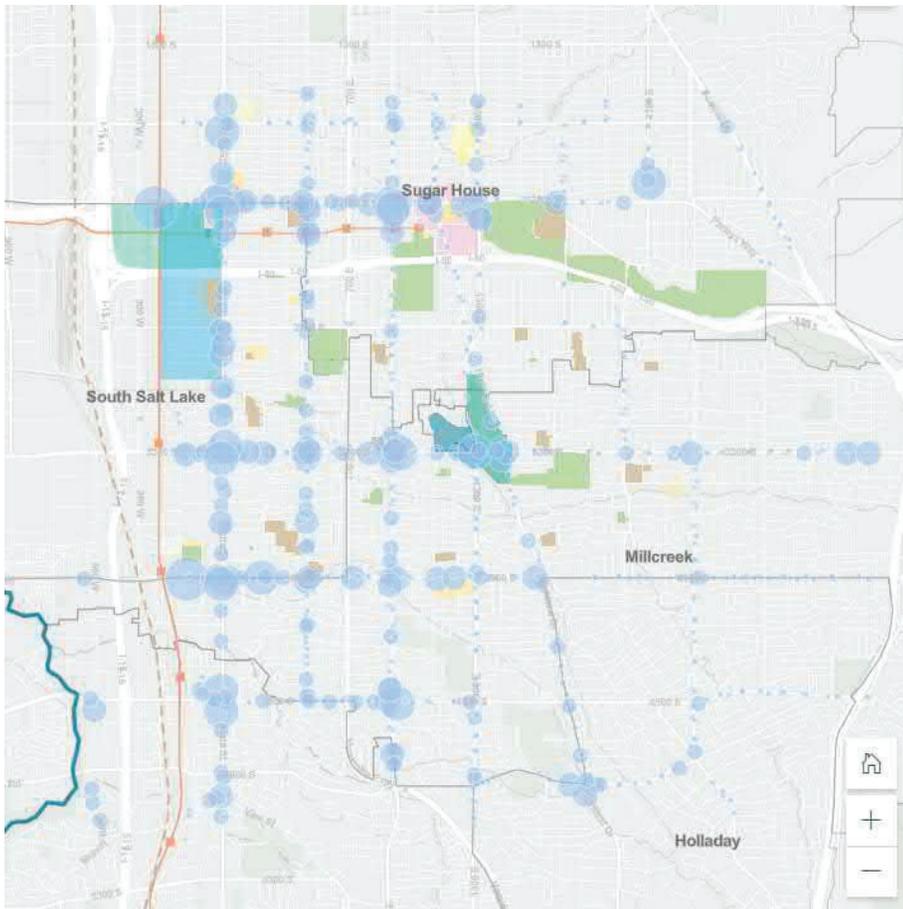
Figure 16. Transit Boardings



Transit Alightings

The transit alightings (when passengers get off the bus) map show that while the same bus stop locations tend to show more activity, 2100 South, 3300 South, and intersections such as Highland Drive and 3300 South, there is overall less activity. This may or may not accurately reflect actual alightings since fewer people “tap off” when getting off the bus.

Figure 17. Transit Alightings

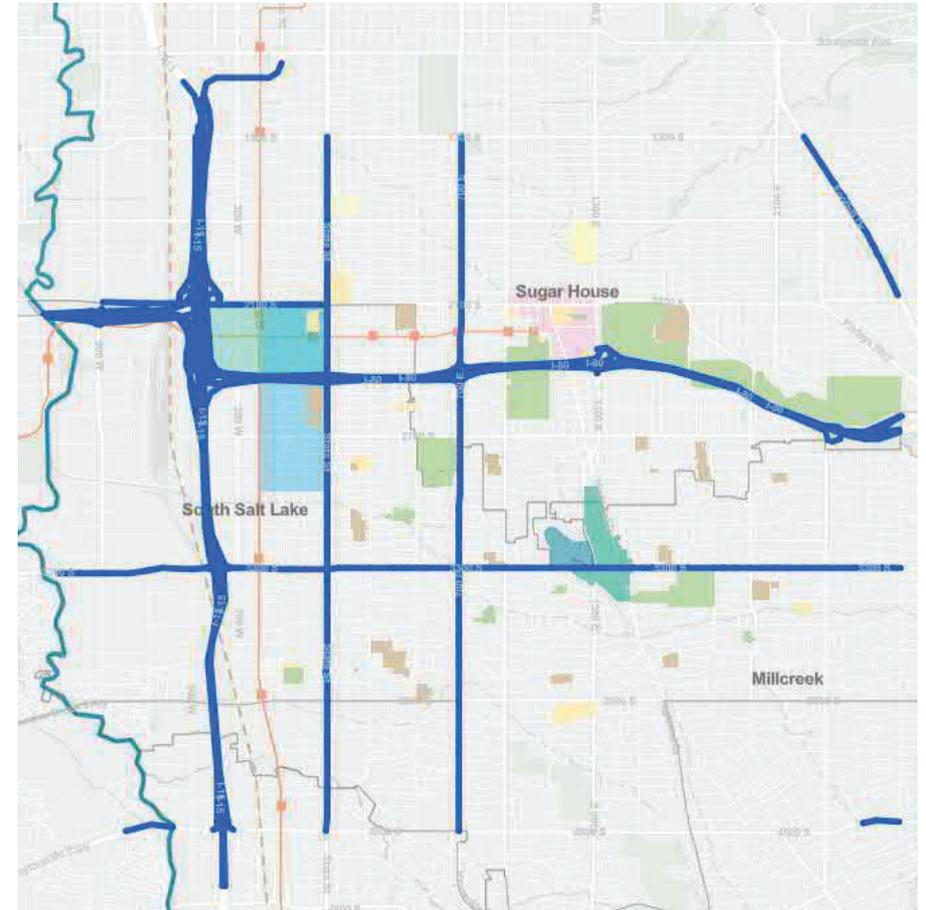


Freight Network

The freight network through the study area consists of freeways, arterials, and major collectors. These routes include I-80, I-15, State Street, 700 East, 3300 South, and 2100 South west of State Street. These

roads tend to be auto-priority and should likely be avoided as routes for active transportation.

Figure 18. Freight Network

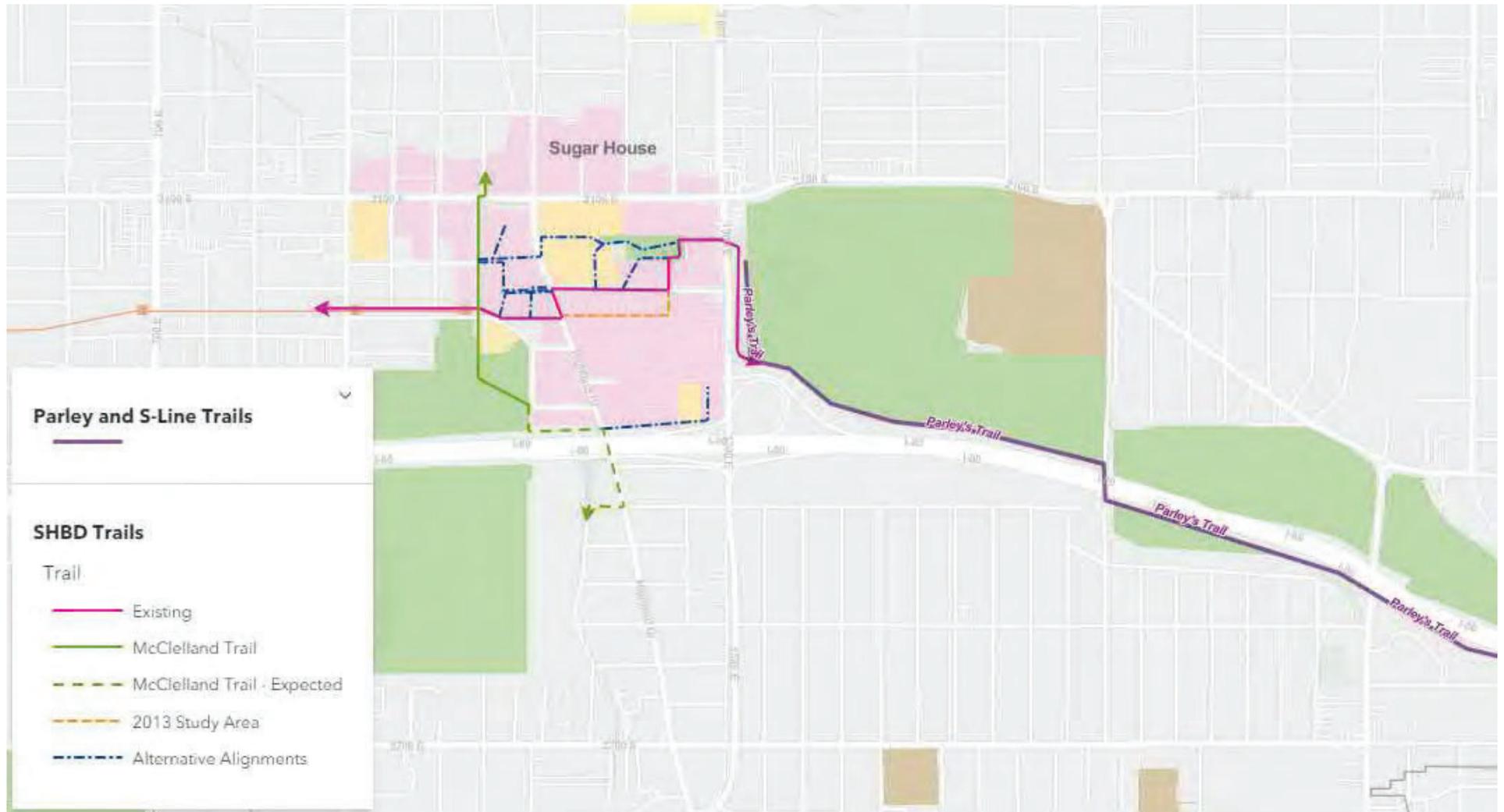


Sugar House Parley's Trail

The next map shows how Parley's Trail currently connects through the Sugar House Business District. It passes north of the S-Line tracks east along Sugarmont Drive. It picks up at Wilmington Avenue and continues east, where it cuts north and goes through an alley behind Wilmington Flats, through the southeast corner of Hidden Hollow and then east through The Draw tunnel into Sugar House Park. The connection between Sugarmont Drive and Wilmington Avenue along Highland Drive is unofficial and informal. The map conveys several routing

alternatives through the Sugar House Business District, which include a route for pedestrians through the new Sugarmont Apartments. The McClelland Trail is also depicted in green and green dashed lines for existing and expected routes, respectively.

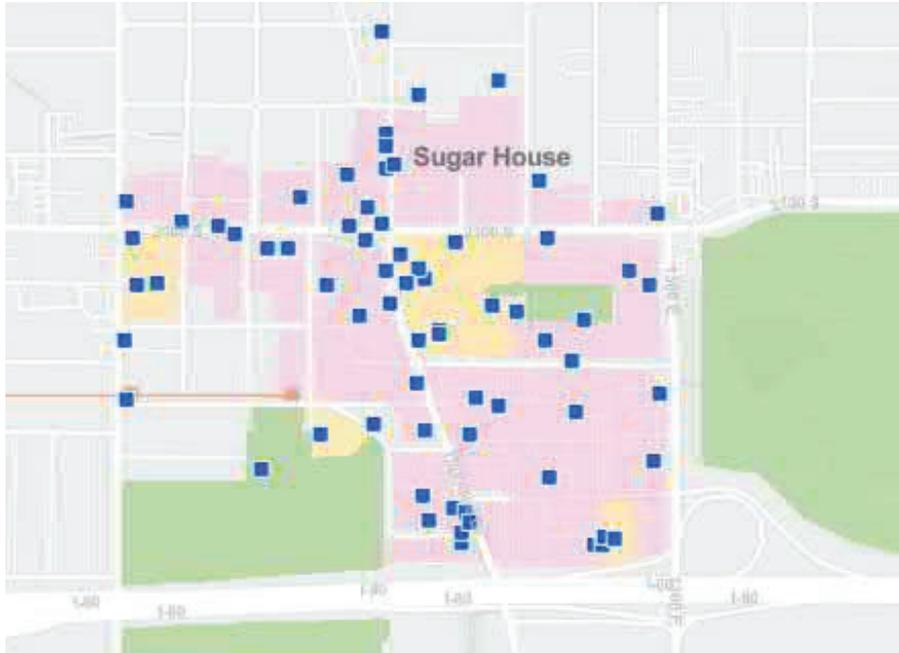
Figure 19. Sugar House



Bike Parking in Sugar House Business District

This map illustrates the extent of bicycle parking in the Sugar House Business District as of July 2020. Many of the facilities are still in place that existed when the 2013 study was completed. As new development has happened, bicycle racks have been added next to several new buildings indicating more acceptance and support of cycling in the study area.

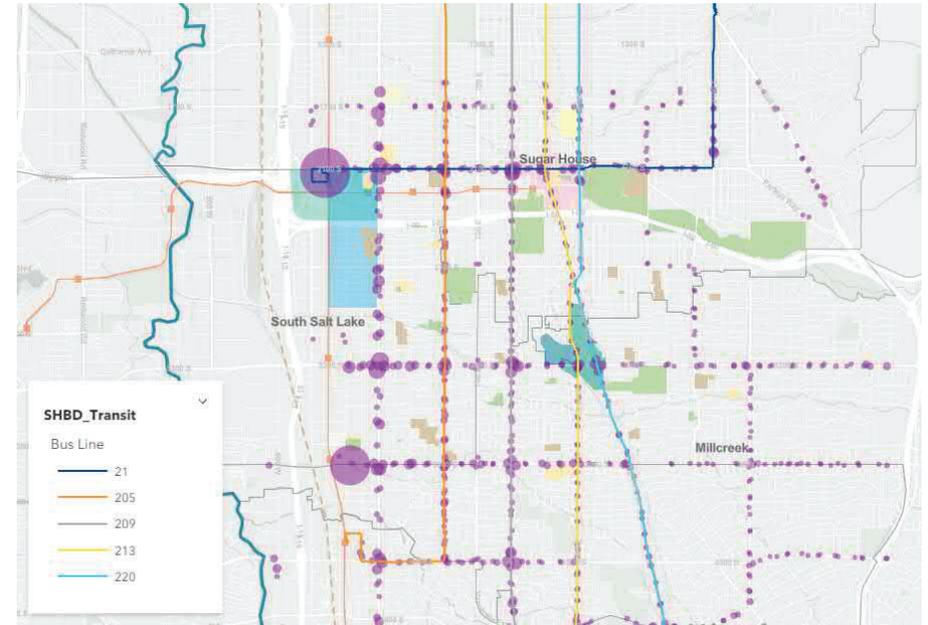
Figure 20. Bike Parking in Sugar House Business District



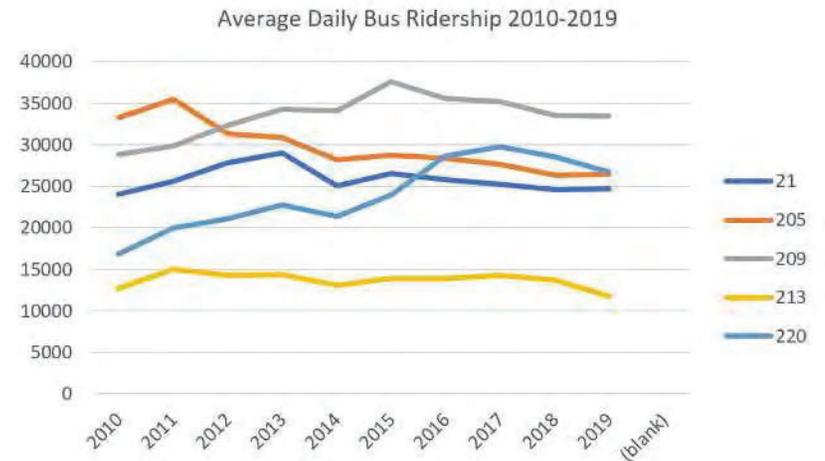
Sugar House Transit Service

The Sugar House Transit Service map shows four bus lines (209, 21, 213, 220) and the S-Line streetcar route as well as 2019 total average daily boardings and alightings for stops in the study area. The map illustrates a concentration of activity at the Fairmont Station (corner of McClelland and Sugarmont), and at 900 East and 2100 South. Some of the new office development in Sugar House such as the University of Utah Health Clinic likely has not been around long enough to impact bus stop use on Highland Drive between Ashton and Stringham, but it is likely that location will begin to see more activity.

Figure 21. Sugar House Transit



The line chart below shows average daily ridership on bus lines that run through the Sugar House Business District from 2010 to 2019. Ridership has remained mostly flat or has risen for most lines except route 205, which has seen a slow decline that has flattened since 2011. All lines saw a small dip in service in 2014, which may be related to the launch of the S-Line.



Public Comment Summary

The study engaged the public over several months in the summer and early fall of 2020. The first format was through an interactive public comment map in which members of the community could leave general or specific comments on circulation in the study area. Specific comments were tied to either points or lines that they drew on a map.

The majority of comments pertained to safety and biking (see pie chart). Beyond those overarching comment tags, the three most common big ideas revolved around:

1. Improved signage & wayfinding
2. Need for addition bicycle facilities to improve ridership and safety
3. Improved street crossing environments for pedestrians

Improved Signage and Wayfinding

Several comments addresses the lack of or limited signage for the trails that connect in the study area including Parley's, the McClelland, and the Millcreek Trails.

Additional Bicycle Facilities

In general, several corridors were identified as lacking bicycle lanes which made riders feel unsafe traveling along them, especially where cars may be traveling at high speeds.

Improved Street Crossings

Many intersections or mid-block crossings were identified as places for improved pedestrian infrastructure. Respondents indicated they felt unsafe and did not walk because it was too difficult to connect in some of these areas without better pedestrian facilities.

Gaps and Barriers

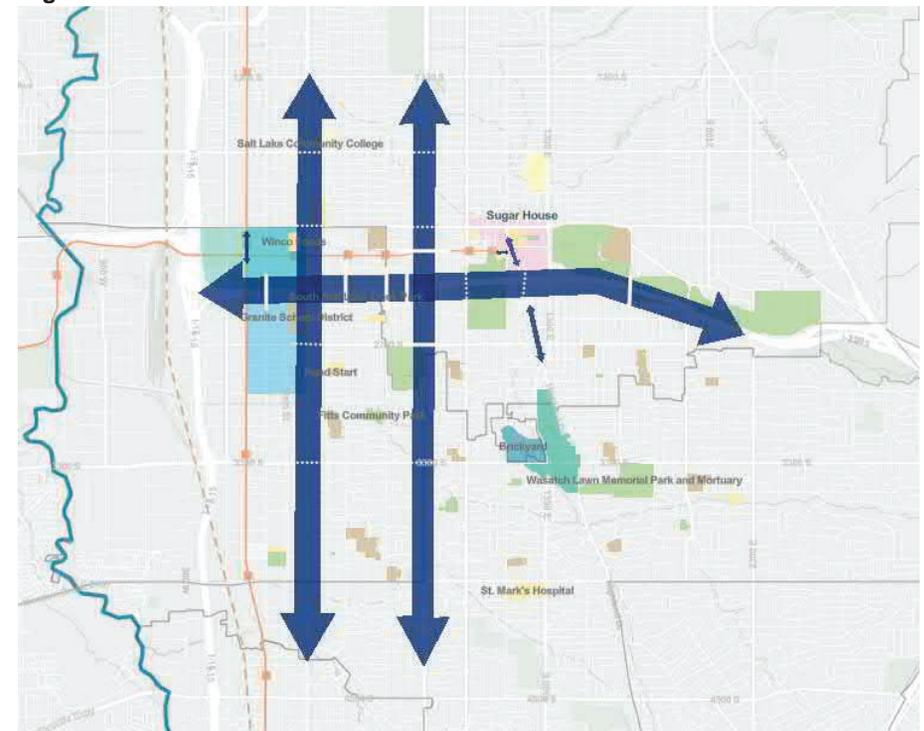
A gaps and barriers analysis was done by assessing information gathered in existing conditions and in the public comments about the study area. The following three maps indicate major barriers and gaps and targeted pain points for active transportation circulation.

Barriers

The study area is dissected by three large linear barriers: I-80 dividing areas north and south, and State Street and 700 East dividing areas east and west. These auto-priority thoroughfares can be challenging and create undesirable conditions for traveling for cyclists and pedestrians. The thick blue lines on the map indicate these barriers' locations. White lines across them indicate safer or more welcoming crossing conditions. Dashed white lines indicate locations where it is physically possible to cross, but the environment may not be ideal and will likely deter all but the most determined of people.

Smaller barriers are also indicated to show smaller corridors that are difficult to cross. They are at the intersection of the S-Line and TRAX lines near Central Pointe Station, between the Sugar House Business District and Millcreek City Center along Highland Drive, and a small point along Sugarmont Drive between McClelland Street and Highland Drive.

Figure 22. Barriers



Gaps

The gaps on the map depict areas and corridors of missing connections or infrastructure for active transportation in the study area. There are six primary gaps listed below. Additional gaps in connectivity are illustrated with dashed lines. Those include connections from the northeast neighborhoods into the Sugar House Business District, connections east-west through the City of Millcreek, and a possible connection south of I-80 that could function as an alternate route to cycling infrastructure that exists on 2700 South and Parley's Trail.

- Gap 1: Parley's Trail through Sugar House Business District
- Gap 2: 2700 South - 700 East to 1300 East- gap in bikeway infrastructure
- Gap 3: Sugar House Business District to Millcreek City Center/Brickyard; gaps in bikeway and pedestrian infrastructure
- Gap 4: 3300 South: Gaps in bikeway and pedestrian infrastructure; future study planned
- Gap 5: 2100 South: lacking bikeways, inconsistent pedestrian facilities outside of Sugar House Business District
- Gap 6: 900 East - 2700 South to 3300 South- Gap in regional bikeway network; connects to Millcreek City and planned Salt Lake City bikeway

Figure 23. Gaps

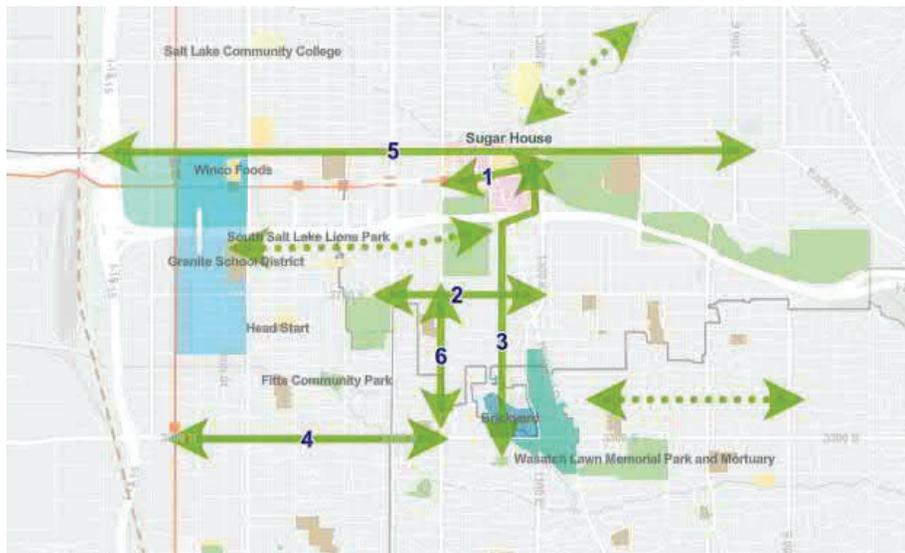
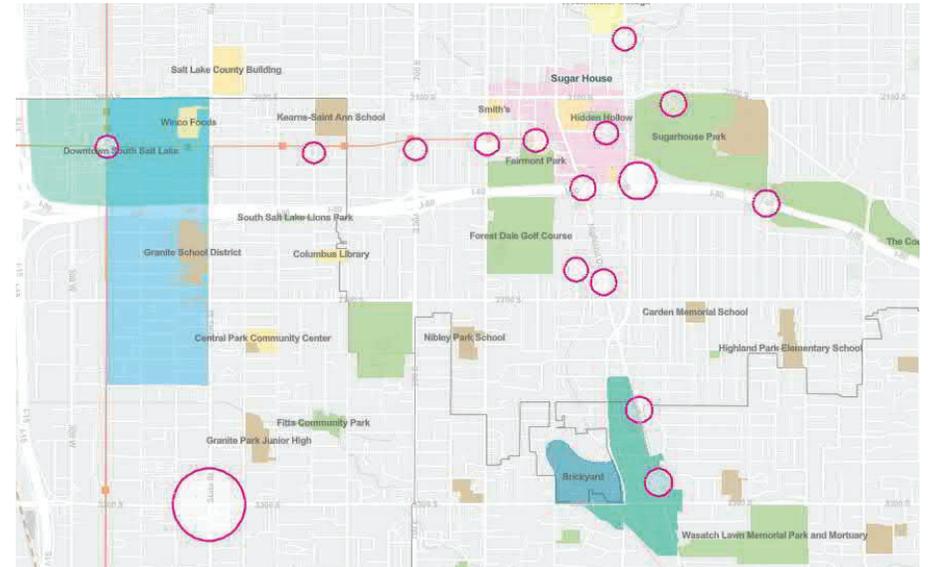


Figure 24. Pain Points



Pain Points

The third map in this series illustrates specific pain points across the study area. These are comprised of trail areas that are confusing, dangerous or difficult intersections to cross, missing active transportation infrastructure such as sidewalk, and other similar issues that make connectivity in the area challenging.

1. Parley's Trail route confusing
2. Lack of sidewalk on 400 East creates difficulty accessing the S-Line
3. Signal to cross is slow and de-incentivizes biking
4. Dangerous crossing conditions for pedestrians/cyclists via multi-use path
5. Confusing and dangerous intersection
6. Parley's Trail signage and location confusing - often blocked by vehicles
7. Difficulty crossing 1300 East via Westminster Ave even though it is a common route to SHBD from northeast
8. Tunnel not inviting to AT, but wide enough for additional facilities
9. This intersection is extremely difficult/ unfriendly to cyclists/ pedestrians

10. Difficulty crossing 2100 South into park, signs about directionality not clear, lack of bike racks
11. Difficult crossing at 1700 East - debris and snow accumulate in protected northbound bike lane
12. McClelland Trail not clear
13. Parking on Highland Drive not used - bike lane opportunity?
14. Difficult intersection to cross
15. Sidewalks in poor condition - but wide enough to install shared use path
16. Dangerous crossing conditions

Appendix A

Program and Policy Recommendations Attachments



Creative Placemaking

Sugar House BD, Highland Drive

Existing Conditions:

Program Extent: Sugar House Business District, Highland Drive

Commercial District

Land Use:

Shopping centers, S-Line, Parley's Trail, U of U Health Clinic, Sugarhouse and Fairmont Parks

Program Destinations:

Project Alignment: Safety, Sustainability, Choice, Connectivity, Health, Collaboration

Guiding Principles:

This recommendation supports the safety, choice, health, and collaboration guiding principles.

Planning Integration:

Program Description:

A creative placemaking program in the Sugar House Business District would formalize activities and small improvements that encourage people to spend time outside on the streets of the commercial areas. It would include staff time and funding to encourage public art installations, street furnishings, and activities and events that boost social and economic vibrancy.

Potential Impacts:

Conflicts with vehicles created by temporary or permanent placemaking elements would need to be mitigated.

Collaborations and Partnerships:

Salt Lake City Arts Council, Sugar House Chamber of Commerce, Utah Arts Alliance, Salt Lake County Arts & Culture

Implementation Phasing:

Short- to mid-term





Green Conflict Markings on Regionally-Significant Bikeways

Existing Conditions:

Program Extent: Neighborhood centers within the study area including the Sugar House Business District, South Salt Lake Downtown, Brickyard, and Millcreek's City Center

Description: Green conflict markings on bikeways increase the visibility of the facility, highlight potential areas of conflict, and reinforces priority to bicyclists in conflict areas. Historically, Salt Lake City has used green conflict markings near Downtown bikeways where bikeway use is highest. As the neighborhood centers within the study area, such as the Sugar House Business District, continue to grow and attract more trips, green conflict markings should be implemented on new and existing bikeways. Color should always be applied consistently to facilitate clear understanding for all roadway users.

Project Alignment: Guiding Principles:

Safety, Choice, Connectivity, Collaboration

Planning Integration:

Supports multimodal goals inherent in plans including the Salt Lake City Pedestrian and Bicycle Plan Update, the Millcreek City Center Master Plan, and the South Salt Lake Downtown Master Plan.

Collaborations and Partnerships:

Salt Lake City, South Salt Lake, Millcreek, Holladay

Implementation Phasing:

Short- to mid-term

Potential Recommended Corridors:

- Highland Drive
- Parley's Trail through the Sugar House Business District
- 900 East
- 2700 South

Benefits of Green Conflict Markings

- Promotes the multi-modal nature of a corridor
- Increases the visibility of bicyclists
- Discourages illegal parking in the bike lane
- When used in conflict areas, raises motorist and bicyclist awareness to potential areas of conflict
- Increases bicycle comfort through clearly delineated space
- Increases motorist yielding behavior
- Helps reduce bicycle conflicts with turning motorists

TYPICAL APPLICATION

Green conflict markings are typically used within bikeways, especially at turning conflict areas, intersections, and driveways. These locations present areas where typical vehicle movements frequently encroach into bicycle space, but where the prevailing speed of turning traffic is low enough that motorist yielding behavior can be expected.



Photos (top to bottom): Typical application of green conflict markings (NACTO, 2019). Example of green conflict markings on 200 W in Salt Lake City.

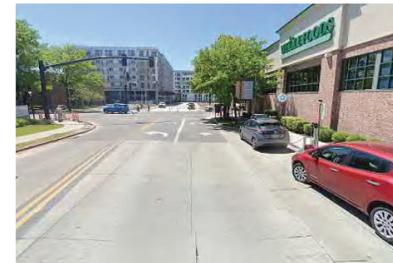
Dashed Color in Conflict Area

- Color should be applied in a dashed pattern within a dashed bicycle lane to indicate conflict area/merging area.
- Dashed application of color pavement mimics typical traffic striping layouts, where dashed markings indicate areas where merging is permitted.
- Colored surface should be skid resistant and retro-reflective.
- Normal white bike lane lines should be provided along the edges of the colored lane to provide consistency with other facilities and to enhance nighttime visibility.
- A "Yield to Bikes" sign should be used at intersections or driveway crossings to reinforce that bicyclists have the right-of-way at colored bike lane areas.

Maintenance costs vary depending on paint and material used.



The intersection of **Highland Drive and 2100 South** is an area that could benefit from green conflict markings.



The intersection of **Highland Drive and Wilmington Ave (Parley's Trail)** is an area that sees large volumes of bicycle traffic traveling along the Parley's Trail.



900 East is a regionally-significant bikeway and could benefit from green conflict markings, especially near high-conflict areas such as Nibley Park Elementary.



Wayfinding & Signage Local Link Study Area

Existing Conditions:

Program Extent: Sugar House Business District, Downtown South Salt Lake, Millcreek City Center, along major trails and bicycle corridors

Project Alignment: Choice, Connectivity, Collaboration, Transparency & Engagement

Guiding Principles:

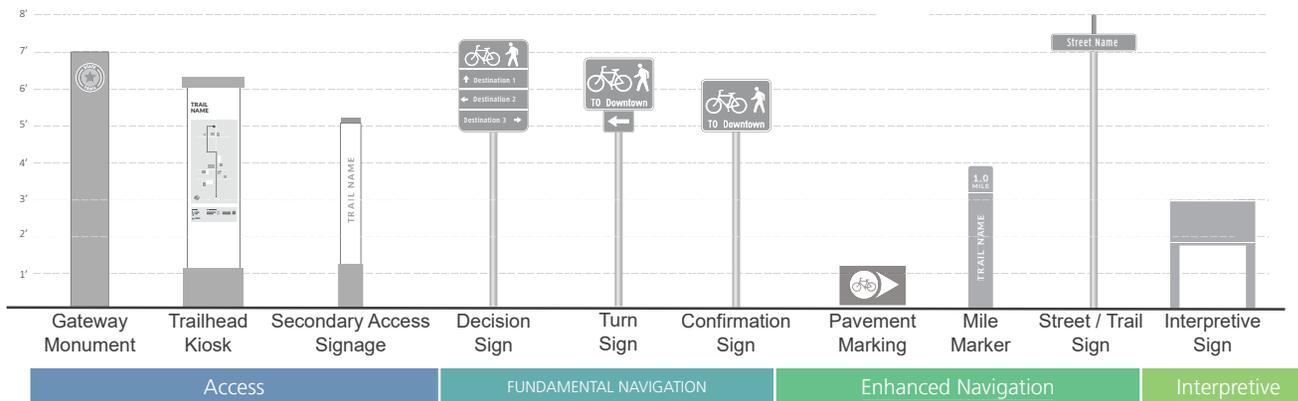
Planning Integration: Good wayfinding and signage is part of the Millcreek City Center and South Salt Lake Strategic Mobility master plans.

Program Description: Successful signage and wayfinding projects include a comprehensive network that develops a variety of sign types for different users. The signage is legible, consistent, and demonstrates a hierarchy of information and sign types. Identity and placemaking should be supported by signage and information in the signage should be inclusive using symbols, icons, or multilingual text.

Wayfinding throughout the Local Link study area should create a consistent visual language with a clear hierarchy of signage types including access signs indicating primary gateways, fundamental and enhanced navigation, and educational interpretive signage.

Collaborations and Partnerships: South Salt Lake, Salt Lake City, Millcreek, Salt Lake County, and WFRC

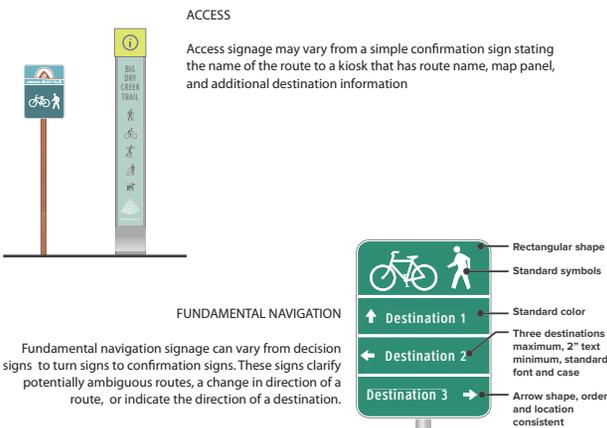
Implementation Phasing: Short- to mid-term



Trail wayfinding and signage elements



The Indianapolis Cultural Trail is very well defined and marked in a variety of ways that include pavement paint, art, and consistent application of the trail logo.



ENHANCED NAVIGATION

Enhanced navigational elements provide additional wayfinding information to trail users. They tend to vary in content and formatting. They include pavement markings such as trail logos or shared lane markings. Mile markers and street/trail signs are also considered under enhanced navigation.



INTERPRETIVE

Interpretive signs illuminate the power of place with content that informs, educates, and entertains the public. More than just dates and fact, interpretive panels inspire a feeling of stewardship in site visitors, strengthening awareness of cultural and natural resources.





Wayfinding & Signage

WAYFINDING PRINCIPLES

- Understand where they are with respect to other key locations
- Orient themselves in an appropriate direction with little misunderstanding or stress
- Discover new places and services

CONNECT PLACES

Wayfinding enables both residents and visitors to travel between destinations and to discover new ones. Wayfinding connects neighborhoods and provides navigational assistance to both local and regional destinations. Effective wayfinding is an extension to the bicycling and walking network and provides a seamless travel experience for non-motorized users.

PROMOTE ACTIVE TRAVEL

A wayfinding network should encourage increased rates of active transportation by creating a clear and attractive system that is easy to understand. The presence of wayfinding signs should help to communicate that walking and bicycling to many destinations is possible. Wayfinding helps overcome physical barriers that discourage the use of active transportation modes of travel.

MAINTAIN MOTION

Bicycling and walking require physical effort. Frequent stopping and starting to check for directions may lead to frustration and discourage use. Consistent, clear, and visible wayfinding elements allow people walking and bicycling to navigate while maintaining their state of motion. The wayfinding information needs to be presented in a manner that is quick to read and easy to comprehend.

BE PREDICTABLE

Effective wayfinding networks are predictable. When information is predictable, patterns emerge and users rely on the network. Predictability also helps user to understand new situations quickly, whether it be navigating a new intersection or traveling to a destination for the first time. Predictability should relate to all aspects of wayfinding placement and design.

KEEP IT SIMPLE

For a wayfinding network to be effective, information needs to be presented clearly and logically. The presentation of information needs to be balanced; too much information can be difficult to understand; too little and decision-making becomes impossible. To be successful, wayfinding information must be provided in advance of major changes in the path of travel and confirmed when the maneuver is complete.



CASE STUDIES

WalkYourCity.org - helps encourage community walkability by connecting people to city neighborhoods through signs created and installed by community members. It includes web-based campaign management and data collection that can provide maps and directions for people's smart phones.

Citizens, community development groups and real estate companies are using the program's sign builder to design and install campaigns that embrace walkability on their communities.

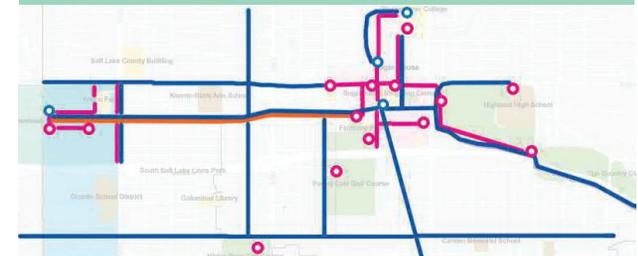
Ledgible London - is a pedestrian focused wayfinding effort that tries to coordinate signage across multiple neighborhoods in London. Prior to these efforts, an inventory of pedestrian signage in the city center identified 32 separate sign systems. The myriad of sign types lacked the consistency and confused citizens and visitors. Since 2005 the campaign's ongoing effort boasts over 500 signs as well as digital maps and smartphone apps that aid pedestrian navigation.

Walk Your City and other focused wayfinding efforts like Legible London demonstrate the way clear signage and citizen engagement can promote more active transportation choices, making communities healthier, safer, and more vibrant. Ideas present in signage campaigns like these are good case studies and examples and elements of them can be adopted within a comprehensive signage and wayfinding effort for the Local Link study area.



The Spanish city of Pontevedra implemented a drastic policy to promote pedestrian activity by closing the city center to vehicular traffic. The clear pedestrian signage campaign adopts colors, symbols and styles frequently seen in rail and bus wayfinding.

Identifying key locations within the Local Link study area then analyzing distances and routes between locations is the first step in creating a comprehensive wayfinding effort. Clear signage adapted for different users including bicyclists and pedestrians is crucial to activating streets across the study area and creating connection throughout neighborhoods and cities.





Bicycle Parking Sugar House Business District

Existing Conditions:

Program Extent: Sugar House Business District

Project Alignment: Guiding Principles:

Safety, Sustainability, Choice, Connectivity, Health

Planning Integration:

This recommendation supports the safety, equity, choice, health, and collaboration guiding principles.

Collaborations and Partnerships:

Salt Lake City, Utah Transit Authority, and WFRC.

Implementation Phasing:

Short- to mid-term

Bicycle parking is an important component of the bicycle network. This study recommends that the cities incorporate the Association of Bicycle and Pedestrian Professionals' Bicycle Parking Guidelines into its development codes, making sure to specify proper rack placement and design.

SHORT TERM BICYCLE PARKING

Short term bicycle parking should be 1) close to the users' destination and 2) easy to use. It should be designed for people visiting businesses and community activity centers, trips typically lasting around 2 hours. In order to optimize use, short term bicycle parking should be easy to find and easy to use.

- Racks should be **less than 50'** from the entrance it serves.
- Adequate lighting** should be provided if the location is likely see use outside of daylight hours.
- Racks should be **sturdy and well-anchored**.
- Racks should be located in a **highly visible location**, and ideally visible from within the destination.

LONG TERM BICYCLE PARKING

Long term bicycle parking is designed for users that may need to leave their bikes unattended for longer than 2 hours, such as transit users, employees, and residents. These racks should value security and weather over convenience and can be provided in a variety of forms, such as a room within an office or apartment, a locked area within a parking garage, or bike lockers at a transit stop.

- Racks should provide a **secure and protected location** for long term users to park their bicycles.
- Access to parked bicycles should be **limited to the group of users** that will be using the long term parking through user-supplied devices, keys, smart cards, and other technologies.
- Racks should **accommodate a variety of bicycles and accessories**, including recumbents, trailers, and children's bikes.

RACK STYLES

When properly designed and installed, these rack styles typically meet all performance criteria and are appropriate for use in nearly any application.

SHORT TERM RACK STYLES



INVERTED U

Two points of ground contact

Can be installed in series on rails to create free standing bicycle parking in variable quantities.



POST & RING

One point of ground contact

Less likely to have bikes parked perpendicular.

Easy to convert from unused parking meters



CORRAL

Work well in areas that have limited sidewalk space

Use on-street areas that are unsuitable for car parking

One parking space can fit 8-12 bicycles

LONG TERM RACK STYLES



TWO-TIER

Used for high density indoor parking

Includes lift assist for upper-tier parking

Can create safety concern



VERTICAL

Used for high density indoor parking

Not accessible to all types of bikes

Can create safety concern



STAGGERED WHEEL-WELL-SECURE

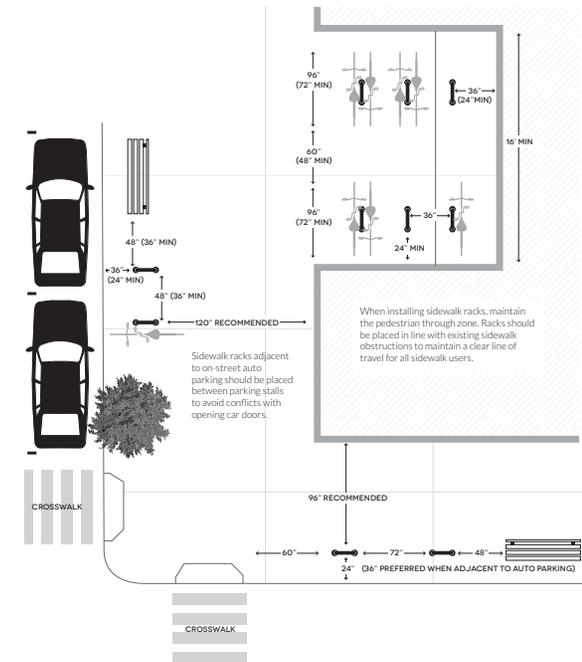
Variation of wheelwell-secure rack

Fits more parking in constrained spaces

Can reduce usability

RACK PLACEMENT

The following minimum spacing requirements apply to common bike rack installations, such as the inverted-U. Recommended clearances are given first, with minimums provided in parentheses. Note that the typical bicycle footprint is approximately 6' x 2', but some bikes may extend to 10' or longer.



Source: *Essentials of Bike Parking: Selecting and installing bicycle parking that works*, Association of Pedestrian and Bicycle Professionals, 2015.



WHERE ARE RACKS NEEDED IN SUGAR HOUSE?

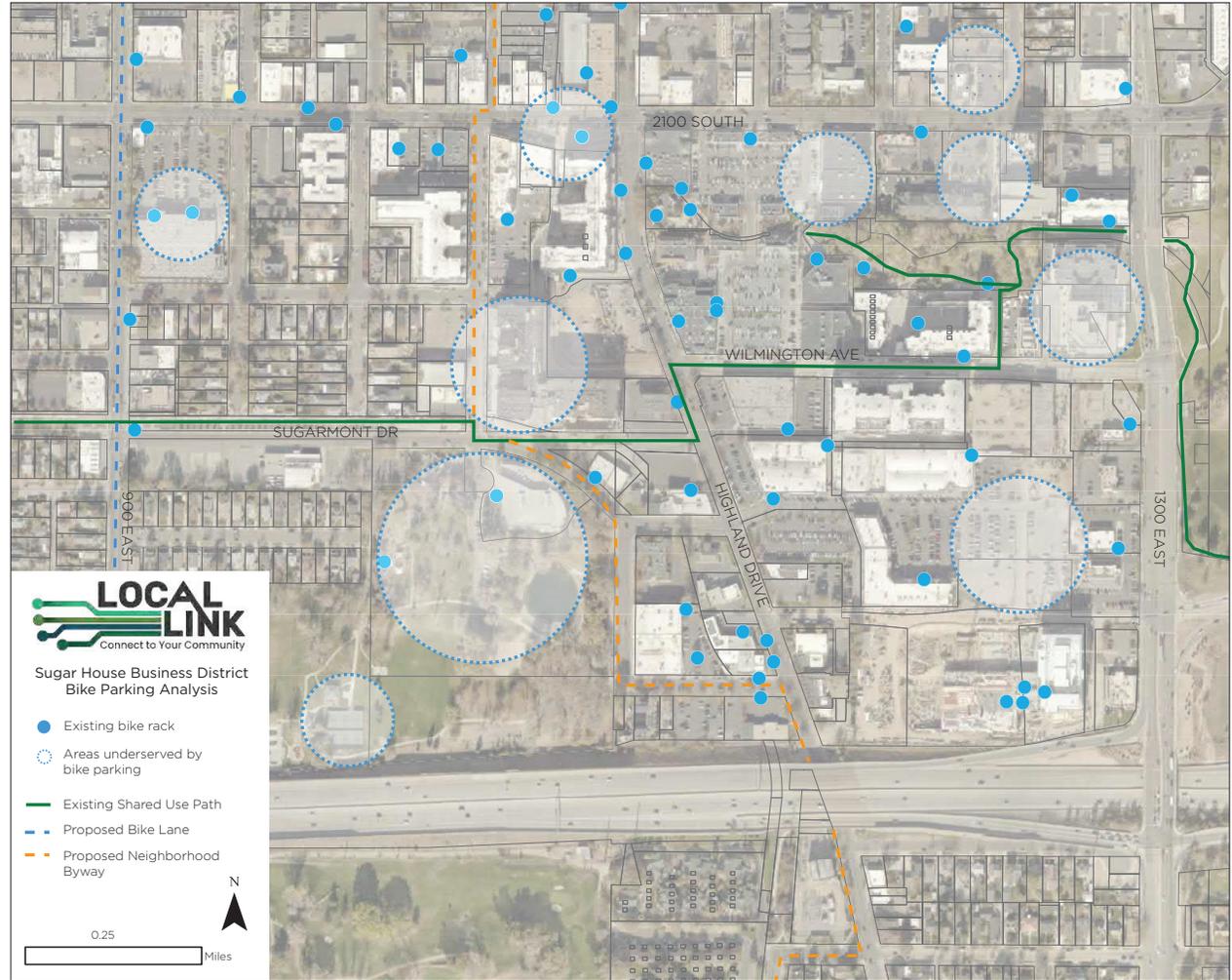
Short-term bicycle parking is needed near many of the businesses and community activity centers in the Sugar House business District, including:

- The new apartment complex on Sugarmont Dr and McClelland St
- In the Sugar House Commons Development
- Within Fairmont Park and at the Fairmont Aquatic Center
- Near the Olive Garden and Sugar House Shopping Center
- At the Premier Plaza

Long-term bicycle parking is needed in all apartment buildings, near transit centers, and near major employment centers, such as the Sugar House Plaza.



Photo 1: Existing inverted U rack near SLC Med Spa, Sport Clips, and Paw Paw.
Photo 2: Existing inverted U rack near bus stop on 2100 South.





Trail Oriented Development Local Link Study Area

Existing Conditions:

Program Extent:

Primarily along urban or urbanizing areas of established trails such as Parley's and the McClelland Trail.

Land Use:

Mixed use, commercial, residential

Project Alignment:
Guiding Principles:

Safety, Sustainability, Choice, Connectivity, Health, Collaboration

Planning Integration:

This form of development is compatible with the development patterns and proposed urban forms espoused in the Sugar House, South Salt Lake Downtown, and Millcreek City Center master plans.

Program Description:

Trail oriented development is an evolution of urban development from auto-centric to people-friendly design. Similar to transit oriented development, trail oriented development leverages infrastructure that supports active ways of getting around in urbanized areas.

Trail oriented development creates a safe and inviting environment for pedestrians and cyclists around active transportation paths connecting key destinations to activate districts and increase sense of place.

Furthermore, trails add economic development value. The value of properties within a block of the Indianapolis Cultural Trail have soared nearly 150 percent since the trail's opening in 2008. In both Salt Lake City and San Francisco, the replacement of some street parking with protected bike lanes along specific corridors resulted in higher retail sales in those areas. (Source: ULI)

Collaborations and Partnerships:

PRATT, Salt Lake City, South Salt Lake, Millcreek City, private developers and property owners

Implementation Phasing:

Mid-term to long-term; can and should happen as redevelopment occurs along these routes.



LANDSCAPE BUFFERS SIGNAGE & WAYFINDING SITE AMENITIES & MATERIALS ACTIVE FRONTAGES



BUILDING STORE FRONT CIRCULATION LANDSCAPE BUFFER TRAIL BUFFER PARKING



Trail Oriented Development Local Link Study Area



ACTIVE FRONTAGE AND ACCESS - Buildings should provide direct access from the trail and provide pedestrian-scale, high-quality frontages that provide a "front door" experience to adjacent development. Active uses such as patios or outdoor dining should be oriented towards the trail



SITE AMENITIES & MATERIAL CONSISTENCY - Adjacent development should include supporting site furnishings like benches, trash receptacles, bike parking and repair stands. Urban design of adjacent exterior spaces should include high quality materials and amenities that contribute to a rich pedestrian environment.



APPROPRIATE LANDSCAPING AND BUFFERS - Landscaping along the trail should meet CPTED (Crime Prevention Through Environmental Design) principles while helping to shade the trail, reduce urban heat island effects, separate trail from adjacent uses, and provide opportunities to manage stormwater runoff.



WAYFINDING & SIGNAGE - Path material should have consistency to aid in wayfinding and placemaking. Signage typography, colors and visual style should be consistent throughout the trail. Traffic crossing beacons at intersections, protective bollards and landscape buffers should work together to provide pedestrian safety and encourage trail use for a variety of users.



Coordinated Traffic Calming Strategy

Existing Conditions:

Program Extent: Applicable to local streets within and around the Sugar House Business District

Project Alignment: Guiding Principles: Safety, Sustainability, Choice, Connectivity, Health Collaboration

Planning Integration: Salt Lake City is currently exploring development of a city-wide traffic calming program. This recommendation seeks to provide a framework to support neighboring jurisdictions near the Sugar House Business District to develop their own traffic calming strategies to provide a consistent approach across jurisdictional boundaries.

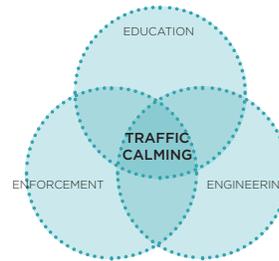
Collaborations and Partnerships: Salt Lake City, South Salt Lake, Millcreek

Implementation Phasing: Short- to mid-term



WHAT IS TRAFFIC CALMING?

Traffic calming involves physical measures to reduce motor vehicle speeds and/or cut-through traffic volumes in the interest of promoting street safety and livability. Education and enforcement strategies can also be used in addition to engineered infrastructure, although engineering strategies are often found to be most effective in influencing slower speeds and desired volumes.



WHY TRAFFIC CALMING MATTERS

The speed and frequency with which bicyclists and pedestrians are passed directly impact their sense of comfort and safety. Slower vehicular speeds reduce the likelihood of collisions by improving motorists' ability to see and react to pedestrians and cyclists and minimize conflicts at driveways and other turning locations. Slower speeds also reduce the severity of injury and property damage when collisions do occur.

A well-designed traffic calming program results in individual corridors or a network of streets that feel safe, promote active travel, and enhance neighborhoods' sense of place and livability.

APPLICATION

Successful traffic calming programs consider both flexibility and structure, striking a balance between analytical decision making and deploying solutions quickly. Salt Lake City, South Salt Lake, Millcreek, and Holladay should seek to implement traffic calming programs that are consistent across jurisdictional boundaries but easily adaptable to the local context. To guide the implementation process, each city should define and develop a data-driven priority rating system that scores streets and districts based on identified prioritization factors, such as:

- Traffic volumes and speeds
- The presence of existing or planned neighborhood byways
- Crash statistics
- Sidewalk availability
- Residential density
- Latent demand for walking and biking
- Equity

It is important to note that Salt Lake City is currently developing a traffic calming prioritization program; lessons learned from this effort can be shared and adapted to each city's unique context to promote consistency in the region.

FUNCTIONAL REQUIREMENTS

All traffic calming operates on the principle of deflecting the direction of motor vehicles and interfering with the ability to travel a straight, level path. Vertical deflection such as speed humps, maintains a vehicles straight path, but requires a brief elevation change. Horizontal shifts, such as chicanes, require vehicles to travel a meandering path and narrow the visual field to reduce travel speeds.

HORIZONTAL DEFLECTION

Mini Traffic Circles are a type of horizontal traffic calming that can be used at minor street intersections to reduce conflict potential and severity at intersections and to reduce traffic speeds along a street.



Curb Extensions are extended sidewalk or landscaped areas on one or both sides of the road to reduce the roadway width. By reducing crossing distances, curb extensions also facilitate easier and safer pedestrian movement.



Chicanes are raised curbs that create a horizontal shifting of the travel lanes along a road. The shifting lanes reduce speeds by eliminating long stretches of straight roadway where motorists can pick up speed.



VERTICAL DEFLECTION



Speed Humps are raised areas, typically 3-4" high, in the roadway pavement surface extending across the roadway. Speed humps can be round or flat-topped.



Raised Intersections can eliminate grade changes from the pedestrian path and give pedestrians greater prominence as they cross the street.



Micromobility Infrastructure and Mobility Hubs

Various Locations

Program Extent:	Neighborhood centers and near high ridership transit routes
Project Alignment:	Choice, Connectivity, Collaboration
Guiding Principles:	
Planning Integration:	This recommendation supports the equity, choice, health, and connectivity guiding principles.
Collaborations and Partnerships:	Salt Lake City, South Salt Lake, Millcreek, Salt Lake County, Utah Transit Authority, WFRC, and the Salt Lake City Redevelopment Agency.
Implementation Phasing:	Mid- to long-term

Transportation is undergoing a rapid evolution in Salt Lake County. Technology-enabled services have expanded the suite of options available for getting from point A to B. Urban transportation systems now need to reflect:

ON-DEMAND SERVICES

- In addition to biking, walking, driving, and taking transit, many people have **access to on-demand services from private companies** (taxi, Uber, Lyft), scooter share, bike share, car-sharing, and micro-transit shuttles.

ROLE OF PRIVATE SECTOR

- New business models have increased the role of the **private sector in transportation and changed the nature of services operating in the public right-of-way.**

TRIP PLANNING

- Trip-planning services** are changing the way people make decisions about routes, mode, and cost to travel.

ELECTRIC VEHICLES

- Global trends toward electric vehicles, combined with the locally-adopted goals for reduced greenhouse gas emissions, has **increased demand for electric charging options** as part of public infrastructure.

E-COMMERCE

- E-commerce is reducing personal trips** to retail stores and restaurants and **increasing the volume of urban delivery and courier trips** occurring.

CURB SPACE DEMAND

- There is increasing **demand for curb space** for transit services, ride-share, pick-up and drop off, walkways, bikeways, and freight delivery.

As a result, cities and transit agencies around the country are identifying new ways to connect the expanded suite of mobility options to one another and to manage use of the right-of-way. By creating a physical platform for integrating public and private, shared and individual, transportation services, mobility hubs offer one such strategy.

MOBILITY HUB ELEMENTS

In practice, mobility hubs are the sum of their parts. The services and amenities commonly considered in mobility hub planning include the following:



WHY MOBILITY HUBS MATTER

Current trends related to new and emerging transportation technology, suggest that the site programming and available amenities of a mobility hub can aid the City in:

- MAKING TRAVEL CHOICES BETTER FOR EVERYONE
- EXPANDING COVERAGE OF TRANSPORTATION SERVICES
- MANAGING PRIVATE MOBILITY SERVICES



The S-Line Streetcar is part of Salt Lake City's Frequent Transit Network (FTN) for those traveling to or from the Sugar House Business District.



	LARGE HUB	SMALL HUB	MICRO HUB
Bus and/or shuttle stop	●	●	●
Fixed guideway transit stop (BRT or LRT)	●	○	
Transit ticket kiosks	●	●	●
Seating	●	●	○
Shelter/Shade Structure	●	●	●
Indoor waiting area	●	○	
Bikeshare and scootershare parking	●	●	●
Short term bike parking	●	●	●
Long term bike parking	●	○	
Personal vehicle parking*	○	○	
Carshare	○	●	○
Electric vehicle charging*	○	●	○
TNC pick-up/drop-off	●	●	○
Wayfinding	●	●	●
Real-time information	●	●	●
Wifi hub*	●	○	○
Water fountains	●	●	○
Restrooms*	●	●	○
Sidewalks	●	●	●
Safe pedestrian crossings	●	●	●
Dedicated bike infrastructure	●	●	●
Active public space*	●	○	○
Convenience retail**	○	○	○

* May require coordination with adjacent private development

** Convenience retail could include uses such as gyms/showers, convenience day care, package delivery, etc.

● Recommended ○ May be included

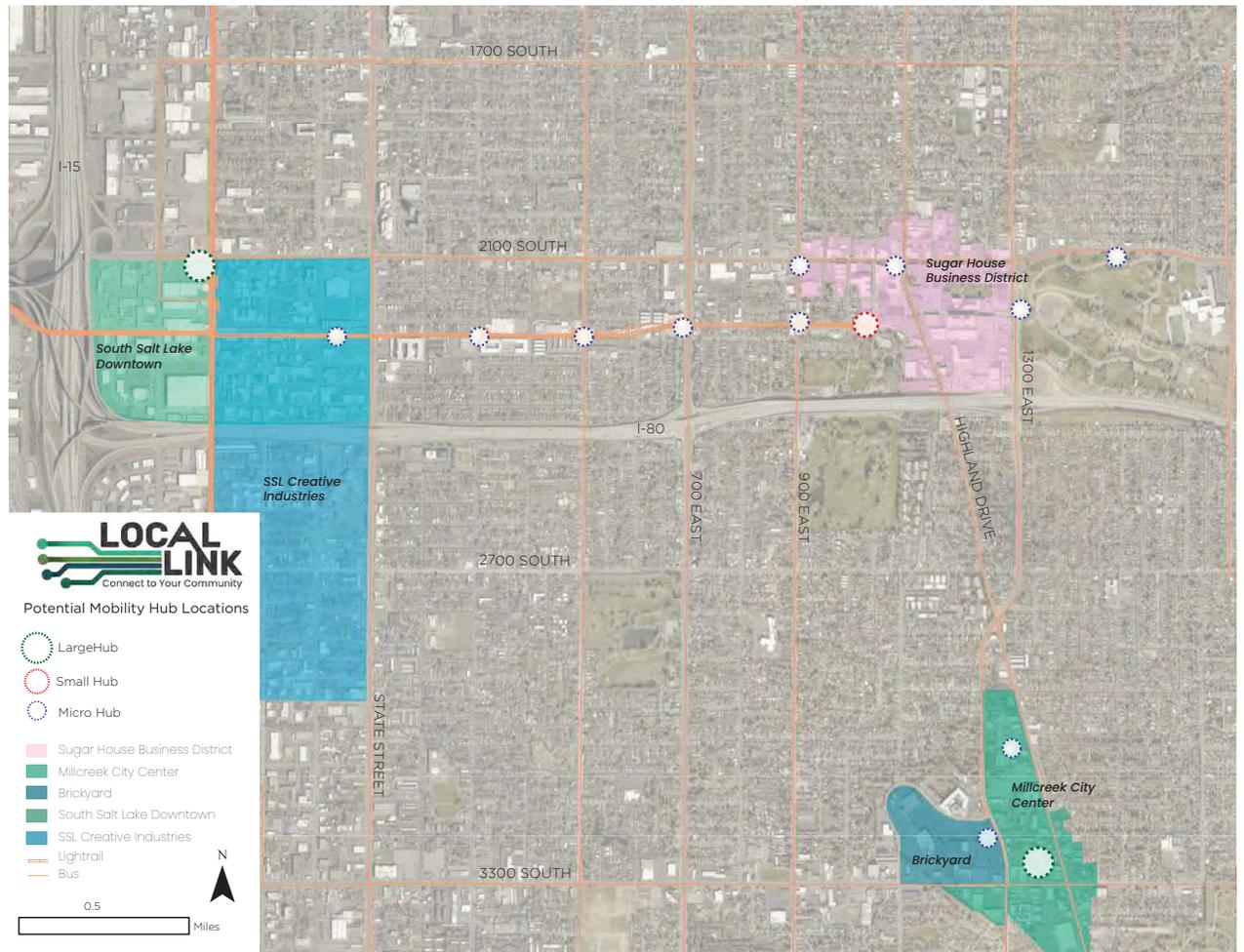


EXHIBIT 2: Local Link Transit Alternative Analysis

LOCAL LINK ALTERNATIVES ANALYSIS

March 2022



Acknowledgments

Led by:

Salt Lake City

In cooperation with:

Holladay City

Millcreek

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Executive Summary

Salt Lake City—in partnership with the City of South Salt Lake, Millcreek, Holladay City, Salt Lake County, and in consultation with Utah Transit Authority (UTA)—conducted a transit study to analyze transportation options between Sugar House and Millcreek with an extension into Holladay. The connections explored include routes along **1300 East** or **Highland Drive**, using enhanced bus, bus rapid transit (BRT), light rail, or streetcar transit options.

The study identified goals, needs, and existing conditions; developed and compared a range of transit modes and two routes by several screening criteria; and identified a locally preferred alignment and mode as well as next steps.

PROJECT PRIORITIES

Stakeholder meetings and brainstorming sessions were held at the beginning of the project to identify area needs and project priorities. Based on these meetings, several key needs and priorities emerged as a guide for the study, including reasonability, sustainability, choice, movement, connectivity, accessibility, adaptability, and safety.

EXISTING CONDITIONS

Current conditions were identified in the study area for each alignment including the existing roadway configuration, population and job projections, parcel density, land use types, key destinations, multimodal transportation networks, and safety issues. These conditions built a basis of understanding of the corridor conditions and needs, and laid the foundation for the development of alternatives and the screening process.

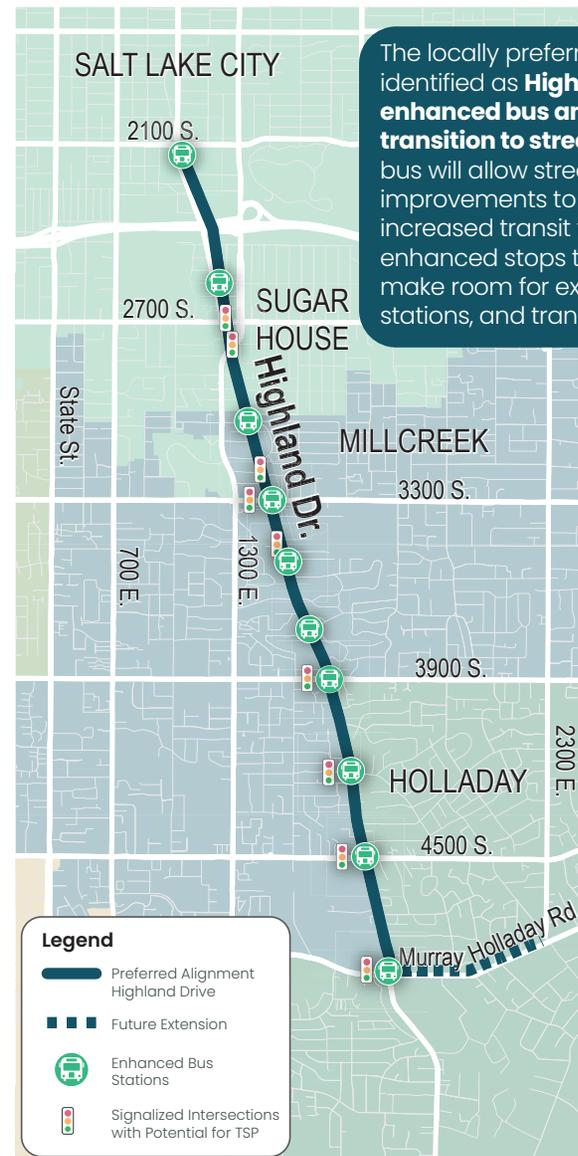
ALTERNATIVES DEVELOPMENT AND SCREENING

Based on the cities' goals, existing conditions, and needs, potential transit modes and routes were compared based on cost, projected ridership, engineering feasibility, right-of-way, and carbon emissions. These criteria were analyzed for each alignment (1300 East and Highland Drive) and for each mode, including light rail, BRT, streetcar, and enhanced bus.

LOCALLY PREFERRED ALTERNATIVE

Based on the evaluation conducted through the existing conditions analysis, alternatives screening, and stakeholder and community feedback, the locally preferred alternative was identified as **Highland Drive with enhanced bus and a long-term transition to streetcar** (Figure 1). Enhanced bus could include bus electrification and

FIGURE 1. LOCALLY PREFERRED ALTERNATIVE



will allow streetscape and transit improvements to begin, including increased transit frequency, and enhanced stops that begin to make room for expanded streetcar stations, and transit signal priority which uses signals to improve transit service travel speed and consistency.

PUBLIC INVOLVEMENT

Public involvement was completed in two phases—the first during existing conditions analysis to understand issues and needs and the second during the evaluation to gain an understanding of transit mode preference. The second round of engagement was re-opened based on community desire for more input and conversation. An in-person engagement event occurred at Yappy Hour, and much more feedback was submitted during this extended period of engagement. Each phase included online surveys and interactive mapping, and overall engaged nearly 2,000 community members. After both rounds of feedback, the public preferred the streetcar mode on Highland Drive.

NEXT STEPS

Although the streetcar is the long-term planned mode for Highland Drive, transit improvements are needed quickly to mitigate increased traffic and increased transit demand, and therefore enhanced bus was identified as a short-term solution. The streetcar alternative is more expensive and will require securing additional funding through a cost competitiveness process. Once funding is identified there will be a more extensive design process to implement.

This analysis results in a transit service that is different than what is currently on the Regional Transportation Plan (RTP). If the service requires enough capital investment that would increase eligibility for federal funds, a revision to the WFRC RTP would be needed. UTA will determine if an environmental study is needed for enhanced bus, and will determine the level of environmental document if one is needed. After this, funding for capital, operations, and maintenance costs will need to be identified for this project, and the environmental study and preliminary engineering can begin. These steps will lay the foundation for final design and construction and operation to follow. A key aspect of all these future phases will be a continuation of the public outreach that began during this study and will continue through construction.

This process will repeat for the next phase of improvements to implement the streetcar alternative.

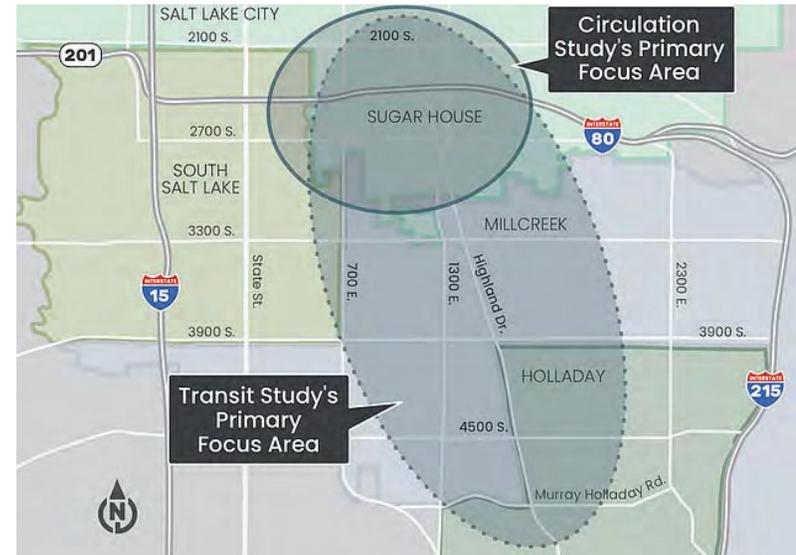
1 Introduction

Salt Lake City—in partnership with the City of South Salt Lake, Millcreek, Holladay City, Salt Lake County, and in consultation with Utah Transit Authority (UTA)—conducted an Alternatives Analysis through the Local Link project, from June 2020 to December 2021 to learn how the community travels in and around the study area shown in Figure 2. This alternatives analysis follows the 2020 circulation study developed at the beginning of the Local Link project, which outlined how people travel in and around the Sugar House Business District.

The 2020 circulation study evaluated opportunities to better accommodate transportation options such as walking, bicycling, transit, and automobile, and identified the gaps and barriers that make it challenging for the community to efficiently travel through and around the study area. The analysis revealed several corridors and spots in need of capital investment. These range from new trail alignments, to the addition of bicycle lanes in gap areas, to improved intersections for pedestrians and people on bicycles, to the creation of complete streets. The [Local Link Circulation Study 2020](#) goes further into detail on the final program and policy recommendations. This information, as well as the [Sugar House Streetcar Phase 2](#) project which recommended an extension to the north from the existing S-Line Alternatives Analysis on 1100 East, guided portions of this alternatives analysis especially with regard to bicycle, pedestrian, and transit connections in Sugar House.

This transit alternatives analysis goes a step beyond the circulation study, specifically analyzing transit and how the surrounding communities can effectively incorporate various modes of public transportation—such as streetcar, light rail, BRT, and enhanced bus—from the Sugar House Business District through Millcreek and into Holladay. The process for the alternatives analysis is shown in Figure 3, and includes defining project needs and goals, developing alternatives, evaluating and comparing alternatives, and identifying a preferred alternative. After this, funding will need to be identified for this project, which will lay the foundation for the environmental study and preliminary engineering.

FIGURE 2. STUDY AREA



WHAT IS LOCAL LINK?

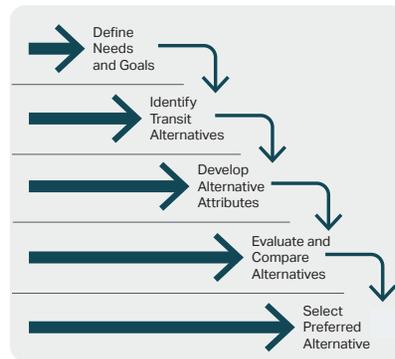
Salt Lake City, South Salt Lake, Millcreek, and Holladay City teamed up on Local Link to learn how you travel in and around your community in order to develop innovative, multimodal options for more convenient, connected trips.

The cities conducted a circulation study, which wrapped up in October 2020, that analyzed biking and walking connections into the Sugar House Business District. This alternatives analysis then analyzed transit options between Sugar House and Millcreek, with an extension into Holladay.

While these studies are providing a fresh look at transportation options, the Local Link effort is also building on a foundation of previous studies and proposed plans, including the 2013 Circulation and Streetscape Amenities Plan for the Sugar House Business District. The 2013 plan, as well as the Phase 2 locally preferred alternative, is still valid, except where it conflicts with this one, in which case this most recent plan takes precedence.

The goal of the alternatives analysis is to assess transit options between Sugar House and Millcreek with an extension into Holladay and improve north-south connections, and determine if additional and or improved transit could be supported in the study area. The transportation network that connects these communities will be safe, inviting, sustainable, and provide comfortable travel choices for everyone. It promotes a connected network between local neighborhoods and regional centers in South Salt Lake, Millcreek, and Holladay to the Sugar House Business District. Active and public transportation connections to schools, neighborhood centers, parks, and other public attractions are prioritized.

FIGURE 3. ALTERNATIVES ANALYSIS PROCESS



STUDY AREA, CORRIDORS, AND MODE OPTIONS

The alternatives analysis study area includes the Highland Drive and 1300 East corridors from Murray Holladay Road on the south to 2100 South on the north, as well as the potential extension area to the south along Murray Holladay Road to 2300 East. It also includes an area slightly beyond the project termini to include multimodal connectivity considerations and nearby destinations. Prior to narrowing down to the two corridors, several additional options were explored and eliminated due to various feasibility and operational limitations. Table 1 shows more information about these alternatives, and why they were not selected. A map illustrating the eliminated alternatives located in Appendix A.

The modes considered for the study include enhanced bus, streetcar, BRT, and light rail. Figure 5 on the next page provides a brief overview and potential implications of each mode.

TABLE 1. ELIMINATED ALTERNATIVES

Alternative Description	Justification for Elimination
1300 East: From Wilmington Avenue in Sugar House on the north, as well as the potential extension area to the south along Murray Holladay Road to 2300 East.	Removed due to the potential constraints of crossing UDOT's I-80/1300 East overpass. Terminus along 1300 East would be outside of the core Sugar House Business District and future planned transit connections from Sugar House to downtown.
A loop on Highland Drive to the north and turning around at 2100 South to go south on 1300 East.	Removed due to likely transit user confusion and potential out-of-direction travel with 'loop' routing.
Switching over from Highland Drive on the south, to 1300 East in the middle via 3900 South and back over to Highland Drive at 2700 South.	Removed due to likely transit user confusion and anticipated additional travel time with the out-of-direction travel between Highland Drive and 1300 East.
Only using Highland Drive, and adding a stop to the west at St. Mark's Hospital off 3900 South.	Removed due to anticipated additional travel time and out-of-direction routing to accommodate a new stop at St. Mark's Hospital.

FIGURE 4. STUDY CORRIDOR OPTIONS



STEERING AND STAKEHOLDER COMMITTEES

Guiding the study, in addition to the project team, were the steering and stakeholder committees. The steering committee met monthly and was made up of representatives from project partners to provide feedback on alternatives and share insight from their respective parties in order to make decisions. Steering committee members received content to share with their networks and communicated their needs and concerns back to the project team to help make decisions.

Agencies involved in the steering committee included:

- Salt Lake City (Engineering and Transportation Divisions)
- Holladay City
- City of South Salt Lake
- Millcreek
- UTA
- Utah Department of Transportation (UDOT)
- Wasatch Front Regional Council (WFRC)

The stakeholder committee met bi-monthly and was made up of representatives from additional organizations and interests throughout the community. The Local Link project team worked closely with the committee to provide content and updates to share with their organizations and communications channels to reach more people and gain additional feedback from the public.

Groups represented in the stakeholder committee included:

- Sugar House Community Council
- Sugar House Business Developers
- Millcreek Business Developers
- Local Business Owners
- St. Mark's Hospital
- East Millcreek Community Council
- Millcreek Community Council
- Canyon Rim Citizens Association
- Granite School District
- Holladay Developers
- PRATT
- University of Utah
- Bike Utah
- Move Utah
- Westminster College
- Salt Lake School District
- SLC Business Ombudsman

FIGURE 5. TRANSIT MODE OPTIONS



ENHANCED BUS

This option runs more frequently than the existing bus line, but with a limited number of stops. It is not separated from traffic, but can have some premium enhancements including transit signal priority and other speed and reliability improvements.



STREETCAR

The streetcar option uses rail transit vehicles designed for locally focused transportation on a city street. The vehicles are powered by electricity, and the rail vehicles can share a lane with other vehicles.



BUS RAPID TRANSIT

This is a bus-based option with a dedicated travel lane, separate from vehicles, and includes transit signal priority, level boarding, and enhanced stops and stations.



LIGHT RAIL

Light rail is the most intensive transit option, as it includes a full passenger train, and requires its own tracks and separation from vehicle traffic. It also includes larger stations and traffic signal enhancements.



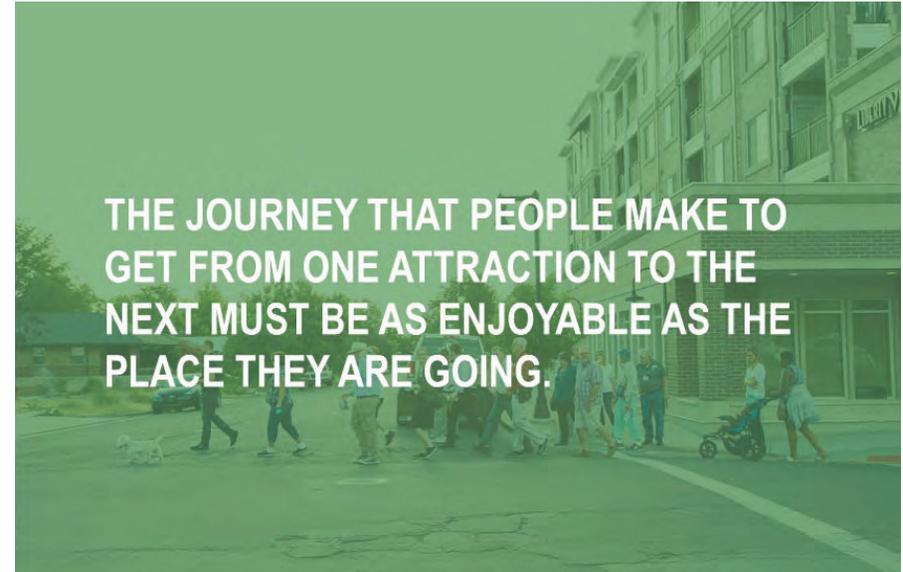
2 | Project Priorities

Early during the alternatives analysis, the project team met with Salt Lake City, South Salt Lake, Millcreek, Holladay City, UTA, and Salt Lake County through steering and stakeholder committees to identify project priorities in mid-2020. The meetings included brainstorming sessions, where participants were encouraged to share their priorities and needs for the area through this project.

Based on these meetings, several key needs and priorities emerged. These included site- and corridor-specific needs at intersections or roadways, but also global needs throughout the study area. The following were identified as the main priorities:

Reasonability:	Affordable and feasible to construct
Sustainability:	Prevents emissions and helps improve air quality
Choice:	Options for bikers, walkers, transit riders, and drivers
Movement:	Relieve traffic congestion and keep people moving
Connectivity:	Connect residents to work, errands, and leisure across city boundaries
Accessibility:	Create equitable and affordable mobility options for all users
Adaptability:	Prepare for a growing population, land use changes, and future activity nodes
Safety:	Create a safe way to travel for all modes of transportation

The priorities guided the first round of public survey questions and development of screening criteria as the project progressed.



3 Existing Conditions

1300 East and **Highland Drive** were identified as important corridors for connecting the Sugar House, Millcreek, and Holladay communities and play a key role in connecting people to regional destinations (Figure 6). This study analyzed both corridors and potential transit enhancements to identify the best strategy for improving connectivity and accessibility through sustainable transportation options for all users in the future.

Both the 1300 East and Highland Drive corridors are near the Sugar House Business District, Brickyard, and the developing mixed-use Millcreek City Center. They are also densely populated (and still growing) with household projections increasing throughout the study area and more jobs projected in the Sugar House Business District area.

12%

Population growth is projected in the study area over the next 10 years

5%

Job growth is projected in the study area over the next 10 years

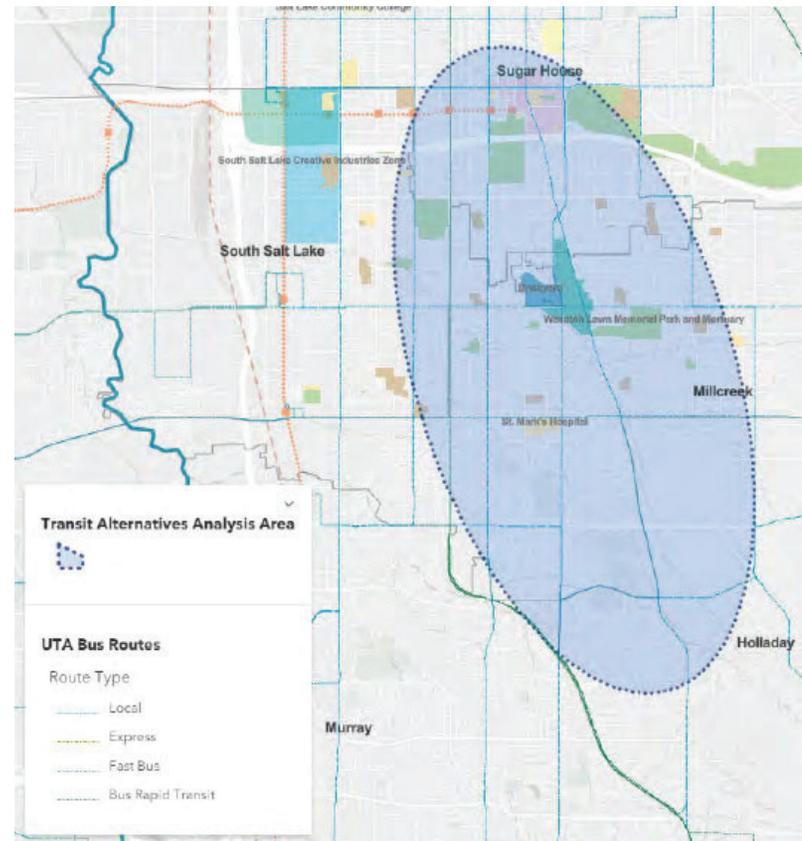
The corridors have a mix of commercial and residential properties. 1300 East has higher percentages of residential properties, whereas Highland Drive has higher percentages of commercial properties compared to other uses. Differences in land use, as well as the roadway widths differ on the 1300 East and Highland Drive corridors before they converge in the north. As these study corridors converge and then pass I-80, the parcel density and building heights increase significantly.

To the south of the Highland Drive intersection, the 1300 East cross-sections vary but in general have one traffic lane in each direction, a two-way left turn lane in the center, and shoulders that vary in width based on the right-of-way width in a given section. 1300 East to the north of the Highland Drive intersection was not considered for transit improvements due to freeway interchange constraints, grade issues, and high levels of existing congestion.

Highland Drive, the corridor with denser commercial uses and wider roadway widths, is two lanes in each direction with a two-way left-turn lane. (Note that Highland Drive was restriped with one lane in each direction and a center turn lane between Richmond and 3300 South and between Ashton Avenue and Wilmington Avenue part-way through the alternatives analysis process, between 2020 and 2021.) This indicates that Highland Drive may already be operating as a preferred street for drivers to travel through or to access destinations, whereas 1300 East may be used most often by people whose destination is accessed directly by 1300 East.

Transit is already active along 1300 East and Highland Drive, with high ridership stops found at most major intersections, including 2100 South, 3300 South, and 3900 South for both alignments. There are parks and active transportation infrastructure adjacent to both corridors, although 1300 East is better connected by bike lanes. Even on the roads with bike lanes, these lanes are only comfortable for more confident cyclists. The next two pages explore each corridor in more detail.

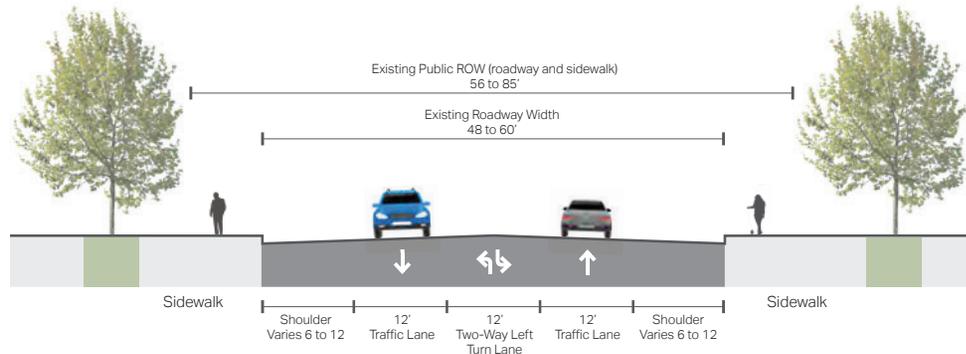
FIGURE 6. STUDY AREA



Alignments were focused on 1300 East and Highland Drive in this area.

1300 EAST

1300 East currently has one travel lane in each direction, with a center turn lane and shoulders and sidewalks on each side. The average roadway width is 55 feet in the southern section of the corridor, between Highland Drive and 3300 South.



Recent growth in the Sugar House Business District and mixed-use developments along 1300 East are establishing a trend of high-density development for this corridor. Likely due to the predominantly residential parcels on this corridor, building setbacks and the overall scale of the street is smaller than what is seen along Highland Drive.

Existing Land Use Along 1300 East

23%
COMMERCIAL

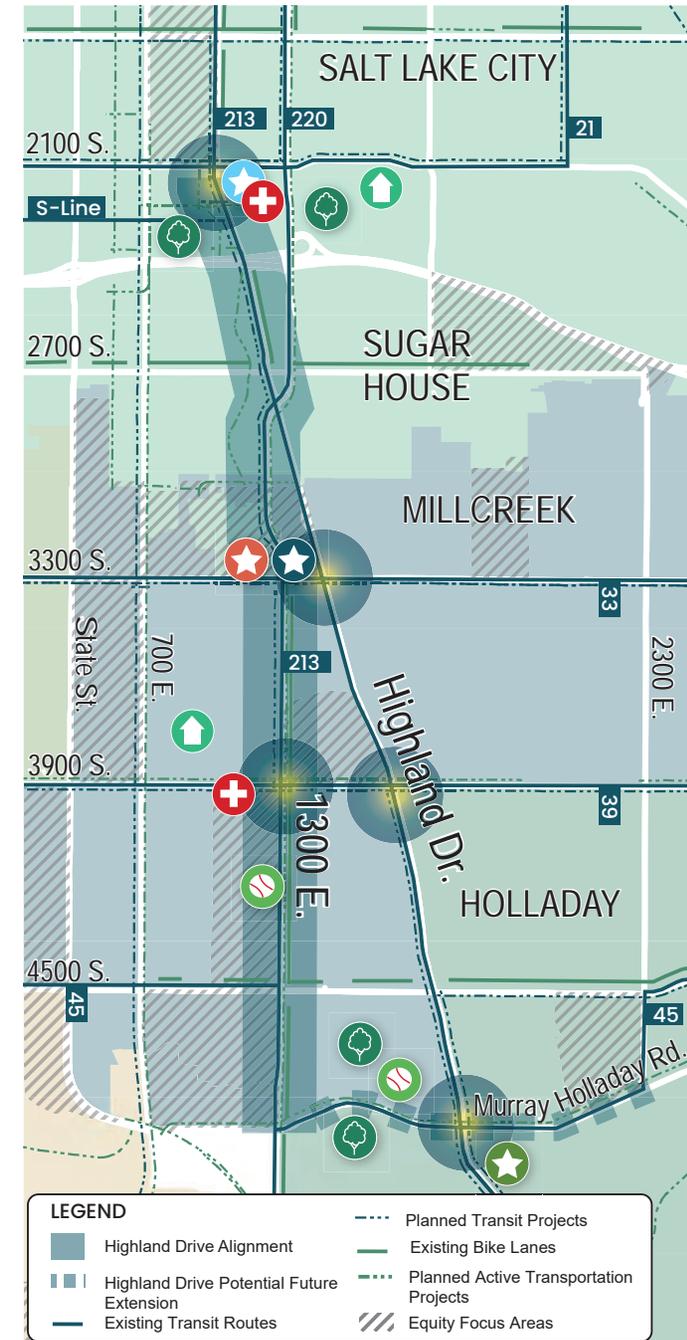
56%
RESIDENTIAL

4
MULTI-FAMILY BUILDINGS

The 1300 East corridor sees slightly lower levels of retail and commercial businesses compared to the alternative on Highland Drive, and best connects to public space and amenities in the northern section of the study corridor. Transit serves the most people at some of the larger intersections on 1300 East, primarily at the 3900 South and 2100 South intersections. 1300 East also crosses six equity focus areas, locations that may include higher rates of transit riders, and includes areas with high percentages of low-income, minority, or zero car households. The following key amenities are highlighted in Figure 7.

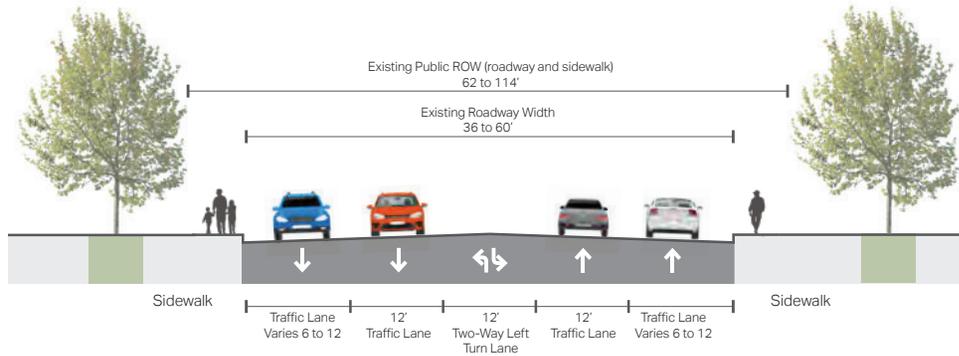


FIGURE 7. 1300 EAST KEY FEATURES



HIGHLAND DRIVE

Highland Drive currently has two lanes of traffic in each direction, with a center turn lane and sidewalks on each side. (Note that this configuration on Highland Drive changed to one lane in each direction and a center turn lane for a portion of the corridor part-way through the alternatives analysis process.) The average roadway width is 60 feet in the southern section of the corridor.



The Highland Drive corridor consists primarily of low- to medium-density development. The corridor hosts primarily commercial properties, with large setbacks and parking lots. After crossing 1300 East to the northern part of Highland Drive, the corridor narrows and becomes more residential with buildings closer to the street and trees lining the curb.

Existing Land Use Along Highland Drive

57%
COMMERCIAL

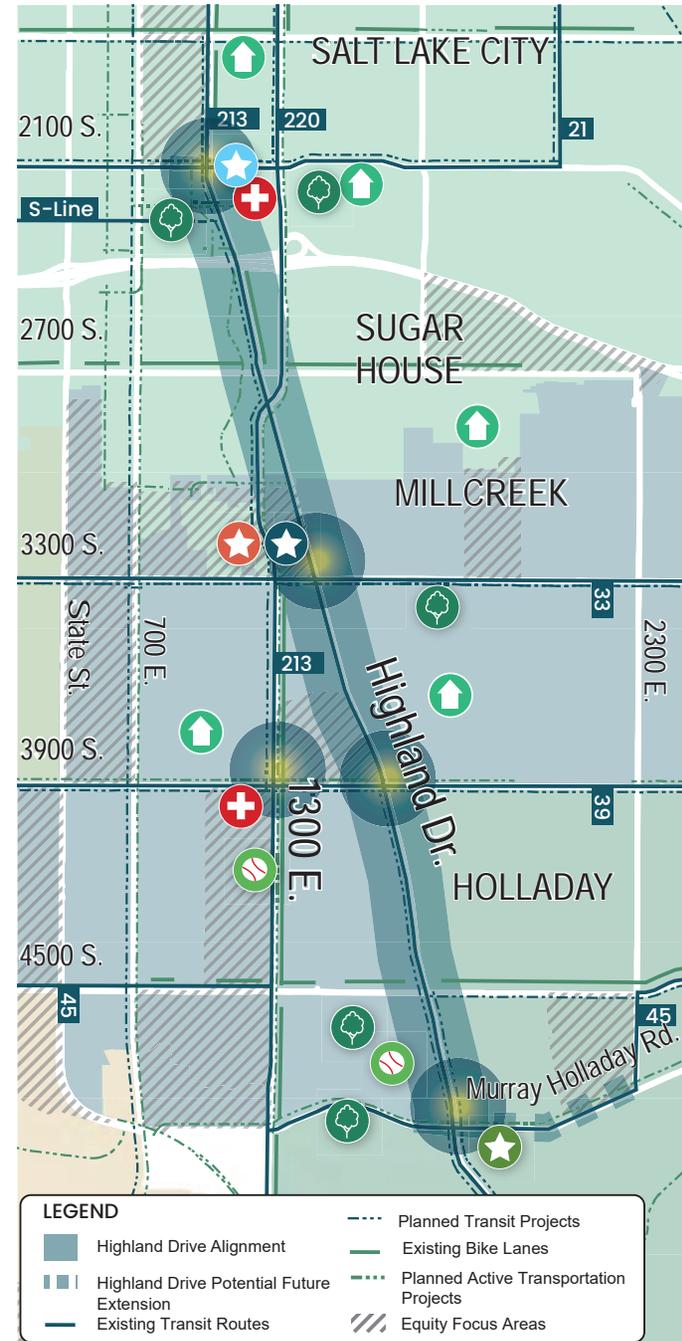
31%
RESIDENTIAL

8
MULTI-FAMILY BUILDINGS

This corridor supports significantly higher levels of retail and commercial business adjacent to the roadway compared to 1300 East, and better access to public space and amenities throughout the corridor. Transit serves the most people at the larger intersections on Highland Drive, primarily at the Murray Holladay Road, 3900 South, 3300 South, and 2100 South intersections. Highland Drive also crosses four equity focus areas (two less than 1300 East). The following key amenities are highlighted in Figure 8.



FIGURE 8. HIGHLAND DRIVE KEY FEATURES



4 Alternatives Development and Screening

SCREENING PROCESS

To better understand the benefits and drawbacks associated with improving transit on either 1300 East or Highland Drive, the alternative roadways and each mode were evaluated with a consistent set of criteria. The criteria included cost range, projected ridership, engineering feasibility, right-of-way, and carbon emissions, and are detailed below.



COST RANGE

Estimated range based on construction costs, including transit construction, road widening where needed, associated right-of-way, and operation costs.



PROJECTED RIDERSHIP

The study projected ridership for 2050 using the STOPS model, which is the model the Federal Transit Administration uses to evaluate and rate projects.



ENGINEERING FEASIBILITY

Access (driveways), utilities, and compatibility with the existing and planned transit system.



RIGHT-OF-WAY

Estimate of approximately how many properties would likely need to be purchased in order to implement each option.



CARBON EMISSIONS

Comparison of carbon emissions savings over 25 years for each option. Reduced air pollution is one component in improving air quality along the Wasatch Front.

These criteria were analyzed for each alignment (1300 East and Highland Drive) and for each mode. Four modes were considered and evaluated: light rail, BRT, streetcar, and enhanced bus. Each mode is described along with the benefits, drawbacks, and cost of implementation. Some of the factors that change from mode

to mode include property acquisition needs, speed and frequency of service, station enhancement opportunities, and opportunity for additional enhancements in the future.



LIGHT RAIL

Light rail is the most intensive transit option, as it includes a full passenger train, and requires its own tracks and separation from vehicle traffic. It also includes larger stations and traffic signal enhancements.



Limited stops help make this transit service more frequent and faster than existing bus service



Enhanced stations



Requires purchase of the largest amount of private property for stations and dedicated rail lane



Dedicated lane for transit enhances service



Highest cost



BUS RAPID TRANSIT (BRT)

This is a bus-based option with a dedicated travel lane that is separate from vehicles, and includes transit signal priority, level boarding, and enhanced stops and stations.



Limited stops help make this transit service more frequent and faster than existing bus service



Enhanced stations



Requires purchase of a moderate amount of private property for stations and dedicated lane



Dedicated bus-only lane improves service



Moderate cost



STREETCAR

The streetcar option uses rail transit vehicles designed for locally focused transportation on a city street. The vehicles are powered by overhead electricity, and the rail vehicles can share a lane with other vehicles.



Limited stops help make this transit service more frequent and faster than existing bus service



Powered by overhead electricity



Enhanced stations



Requires purchase of a small amount of private property for stations



Sharing a lane with cars can slow service



Moderate cost



ENHANCED BUS

This option runs more frequently than existing bus routes, but with a limited number of stops. It is not separated from traffic, but can have some premium enhancements including traffic signal priority and off-board fare collection.



Limited stops help make this transit service more frequent and faster than existing bus service



No purchase of private property



Enhancements can begin now, and expand to more premium transit solutions in the future



Enhanced stations, with further enhancements possible



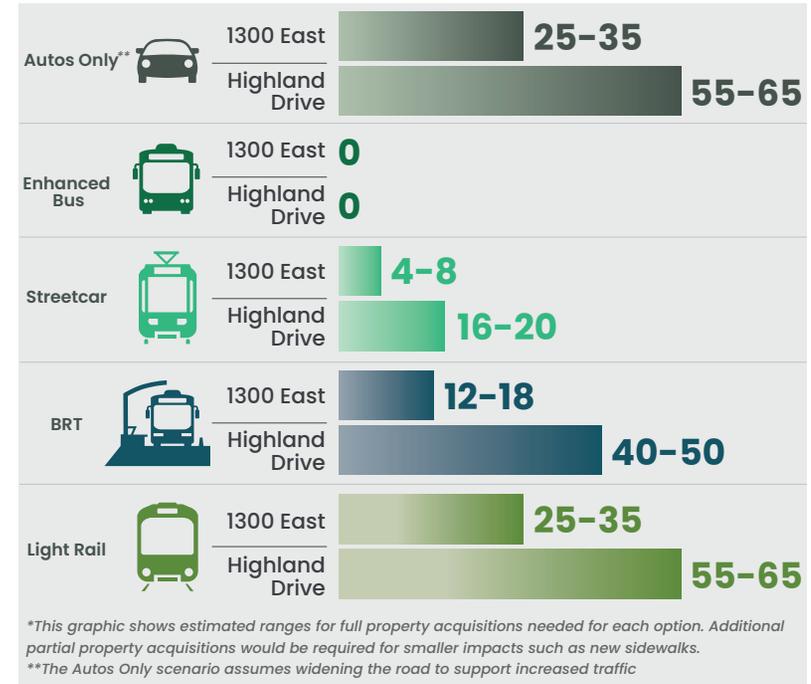
Sharing a lane with cars can slow service



Lowest cost

All four of these modes were analyzed for both corridors against each of the screening criteria to identify the benefits and drawbacks for each alternative. An analysis of property impacts indicated that most of the potential transit options would require more space than is already available along 1300 East and Highland Drive. Figure 9 shows the estimated ranges for full property acquisitions needed for each option. Highland Drive would see larger impacts across the board compared to 1300 East, with light rail having the largest

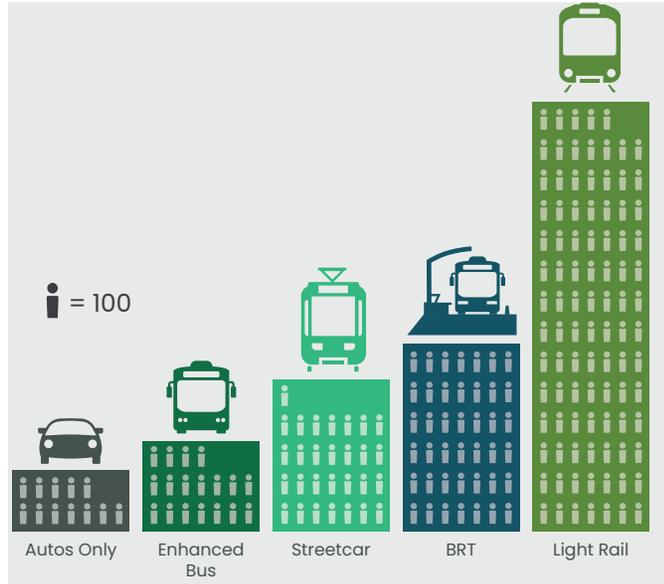
FIGURE 9. ESTIMATED PROPERTY IMPACTS



impacts overall, followed by BRT. This is due to BRT and light rail requiring road widening, which would require extensive right-of-way impacts for long stretches of the roadway. The streetcar option would have a low impact compared to these modes. Enhanced bus would have no impacts, and this mode option fits within the existing footprint, although some easements may be needed for bus stop improvements such as shelters and benches. The impact from streetcar comes from spot widening for larger stations. The BRT and light rail impacts would include long stretches of widening along the larger corridor in addition to the station and transit signal priority needs.

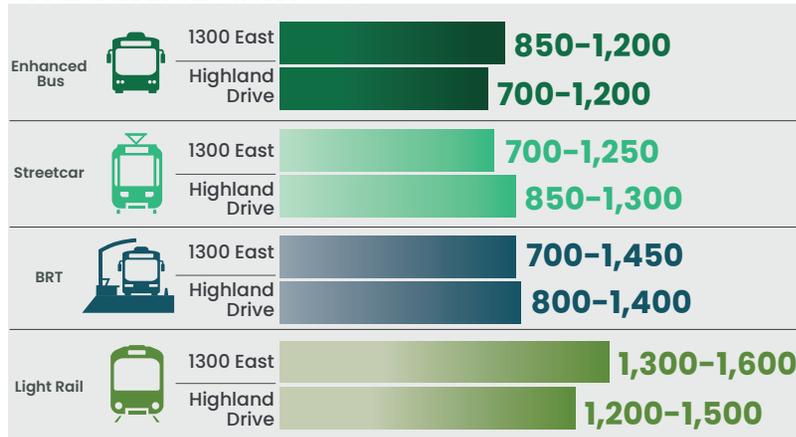
Additional evaluation factors looked at how effectively the alternatives would move people and transit riders by analyzing potential person capacity per lane by mode and ridership projections. The analysis demonstrated that light rail can move the most people, followed by BRT and streetcar, as shown in Figure 10.

FIGURE 10. PERSON CAPACITY PER LANE BY MODE



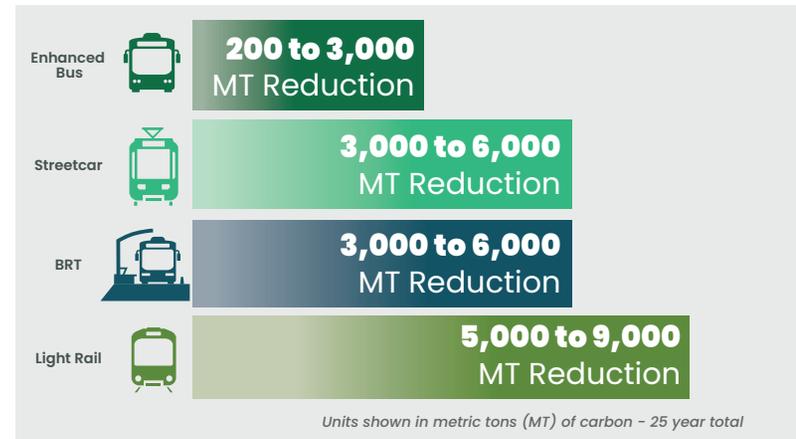
Ridership projections along the corridor echo the throughput ability to some extent. Figure 11 shows that in 2050 light rail would bring in the most riders on either 1300 East or Highland Drive, while streetcar would serve the fewest on 1300 East, and enhanced bus would serve the fewest on Highland Drive. For the low-end ridership estimates, the project was assumed to operate on top of existing transit with more stops. For the low-end estimates the streetcar, BRT, and the enhanced bus were assumed to extend north along the potential S-Line extension with fewer transfers.

FIGURE 11. RIDERSHIP PROJECTIONS



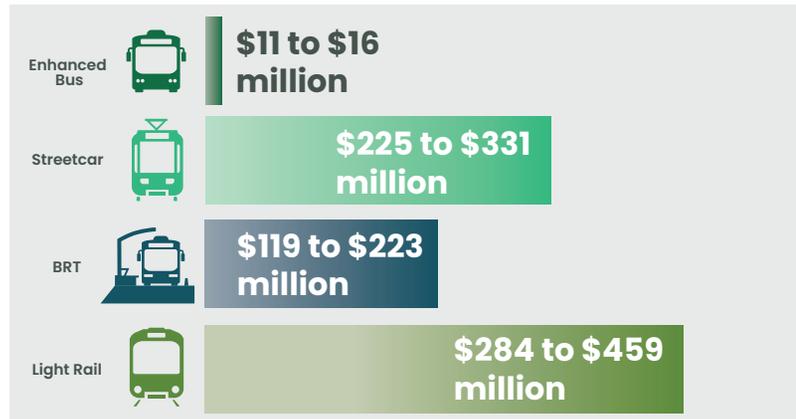
Greenhouse gases were also evaluated to identify the effects on air quality each mode would have in 2050. The alternatives would produce the same results regardless of alignment, so only the mode options were analyzed for this evaluation factor. Light rail would reduce carbon emissions at the highest rate, while streetcar and BRT would reduce carbon emissions at a slightly lower rate, and enhanced bus, if using the current fleet make up, would emit the most carbon of the alternatives. See Figure 12.

FIGURE 12. REDUCTION OF GREENHOUSE GASES



The final evaluation component for this study was implementation and operational costs for each mode. The study team gathered past project costs and future construction costs to come up with an estimated range that considers transit construction, road widening where needed, associated right-of-way costs, and operation costs for each option, as shown in Figure 13.

FIGURE 13. COST RANGES BY MODE



OVERALL SCREENING RESULTS

When comparing criteria across all four modes:

- Enhanced bus would be the cheapest and easiest mode to implement, but lacks in ridership and carbon emissions reduction potential compared to other modes (see Figure 14).
- The other modes increase in cost and complexity significantly compared to the enhanced bus, with light rail being the most expensive and complex, streetcar being the next most expensive and complex, and BRT following as the third most expensive and complex.
- Light rail and BRT have the most significant right-of-way and property implications, while streetcar and enhanced bus have lowest right-of-way impacts
- As cost and complexity increase, so do positive factors such as ridership and carbon emissions reductions.

When comparing criteria across the two corridors:

- Highland Drive and 1300 East see similar results, although costs on Highland Drive are typically higher, as are the estimated number of property acquisitions (total take counts).
- Ridership projections on Highland Drive and 1300 East vary by mode, with Highland Drive seeing higher ridership potential with the light rail and BRT options, and 1300 East seeing higher ridership potential with the streetcar and enhanced bus mode alternatives.

FIGURE 14. OVERALL SCREENING RESULTS

		STREETCAR		LIGHT RAIL		BUS RAPID TRANSIT		ENHANCED BUS	
		1300 E	Highland	1300 E	Highland	1300 E	Highland	1300 E	Highland
	Low	\$225 M	\$236 M	\$284 M	\$328 M	\$119 M	\$159 M	\$11 M	\$11 M
	High	\$315 M	\$331 M	\$397 M	\$459 M	\$167 M	\$223 M	\$16 M	\$16 M
	2050 Avg. Weekday	700 - 1,250	850 - 1,300	1,300 - 1,600	1,200 - 1,500	700 - 1,450	800 - 1,400	850 - 1,200	700 - 1,200
	Access	Simple	Simple	Complex	Complex	Medium	Medium	Simple	Simple
	Utilities	Complex	Complex	Complex	Complex	Medium	Medium	Simple	Simple
	System Compatibility	Simple	Simple	Complex	Complex	Simple	Simple	Simple	Simple
	Residential Area (SF)	59,000	49,000	130,000	100,000	67,000	64,000	6,000	500
	Commercial Area (SF)	141,000	204,000	112,000	247,000	82,000	152,000	6,000	13,000
	Total Take Count	4 - 8	16 - 20	25 - 35	55 - 65	12 - 18	40 - 50	0	0
	25-Year Reduction (MT)	3,000 - 6,000		5,000 - 9,000		3,000 - 6,000		200 - 3,000	

5 Locally Preferred Alternative

LOCALLY PREFERRED ALTERNATIVE

Based on screening results and public and steering/stakeholder committee input, the locally preferred alternative recommended through this study is **enhanced bus with a long-term transition to streetcar on Highland Drive**. See Figure 15.

Highland Drive was selected as the preferred route based on high ridership, simpler engineering feasibility, and stakeholder and public preference. The Highland Drive corridor has significant commercial storefronts, high-density housing, existing right-of-way, and facilities to support current traffic volumes and future transit integration. A new transit solution connecting partner cities on Highland Drive will provide more accessible and sustainable transportation options for all users in the future with less impact than would be needed on 1300 East.

The screening criteria showed that streetcar and enhanced bus performed better than the other modes. Streetcar produces low carbon emissions, has the capacity for high ridership, fewer right-of-way impacts, and simpler engineering than light rail. Streetcar is the second most expensive of all modes.

Enhanced bus was the secondary favored mode based on the screening criteria. Enhanced bus reduces carbon emissions the least, has high ridership potential, shows the lowest right-of-way impacts with no property acquisitions, has the simplest engineering feasibility, and is least expensive.

Through the two phases of public involvement for the alternatives analysis, the majority of the community and steering and stakeholder committees indicated streetcar as the preferred mode and Highland Drive as the preferred route. Although this study indicates that the end-goal should be streetcar, it is important that transit begins serving this area as soon as possible due to the high levels of growth, current congestion, and projected congestion increase if nothing is done.

The best way to accomplish this is to begin with enhanced bus, and preserves space for the more intensive improvements needed for streetcar. A low-cost enhanced bus could accommodate today's transit demand while building ridership for a future streetcar as growth continues in the study area and greater capacity is needed.

FIGURE 15. LOCALLY PREFERRED ALTERNATIVE



The corridor presents a growing trend of urban communities that exhibit a wide range of housing options, ample green space, and building marketplaces which can serve the present and future needs of a community. It is in this vision that Millcreek is developing a mixed-use City Center. Holladay is working through the approval process of a mixed-use redevelopment of the Cottonwood Mall. With direct access to these highly adaptive and dense urban space investments, Highland Drive is well situated to benefit from upcoming market growth and aligns with the public input.

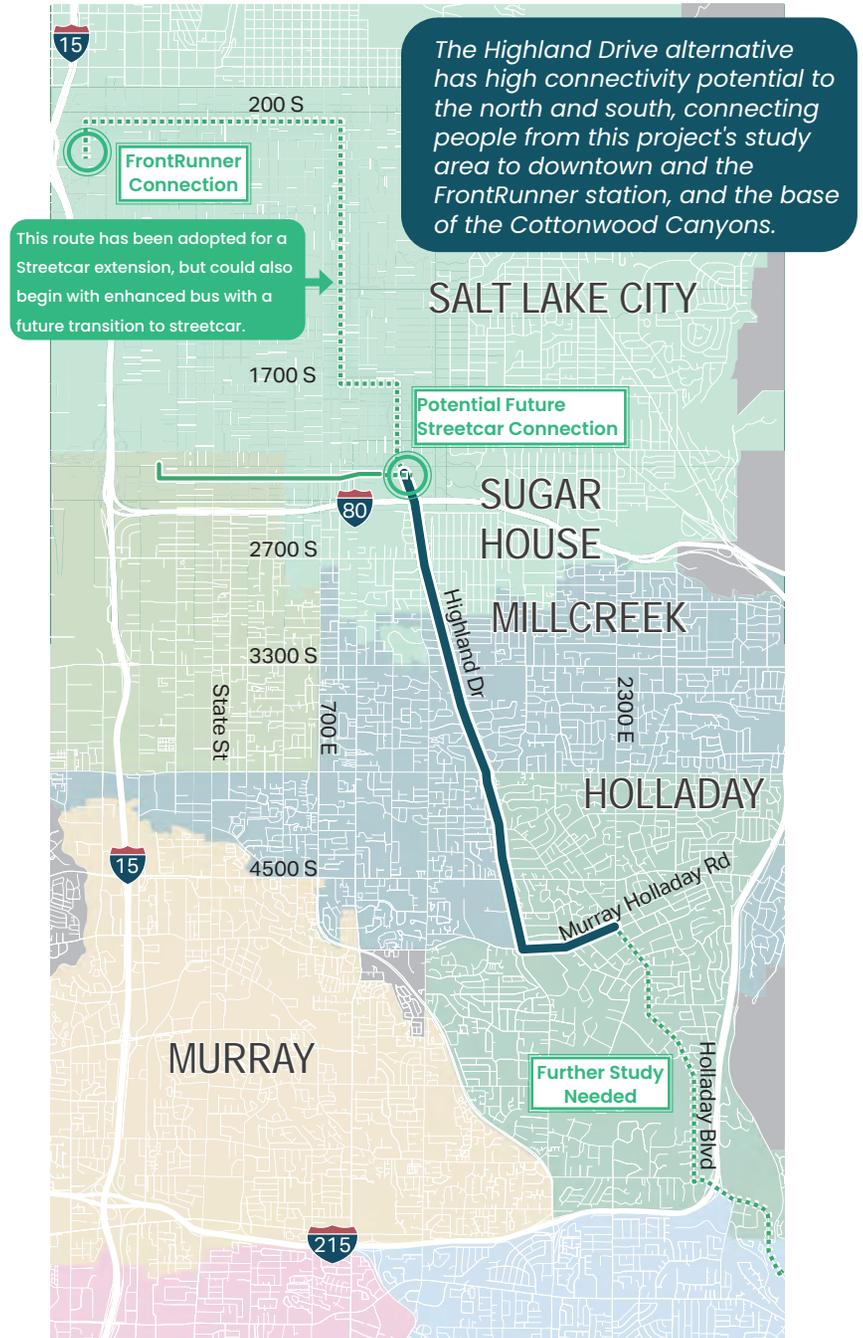
As the Salt Lake Region's population continues to grow, the economic activity and opportunities will rise to meet the needs for shopping, recreation, dining, and business. The Highland Drive corridor supports significantly higher levels of retail and commercial business adjacent to the roadway as compared to the alternative on 1300 East.

TRANSIT CONNECTIVITY TO DOWNTOWN

The Local Link transit solution is an important part of a larger transit network that will connect the communities of the Sugar House Business District and greater Millcreek to downtown Salt Lake City. The locally preferred alternative would provide enhanced bus service along Highland Drive into the heart of the Sugar House Business District. A connection of transit from the Sugar House Business District to downtown Salt Lake City is planned with the future extension of the S-Line streetcar from the Sugar House Business District to downtown Salt Lake City. It is assumed that transit ridership would increase with the downtown connection, due to connecting the corridor to areas with higher density and stronger transit demand, but this connection was not part of the Local Link Alternatives Analysis. The shorter alignment studied for this project (the dark blue alignment in Figure 16), with enhanced bus would be supported by the ridership projections from this study.

Until funding can be secured for future phases of the S-Line streetcar, advancing enhanced bus from the Local Link locally preferred alternative along the future S-Line alignment into downtown could be a viable option in connecting these important communities through transit.

FIGURE 16. FUTURE DOWNTOWN TRANSIT CONNECTIVITY



6 Public Involvement

Public involvement for the Local Link project was conducted for both the circulation study and alternatives analysis.

The circulation study public outreach efforts were conducted to get a greater look into the existing conditions of the Sugar House Business District. Existing conditions focused on learning from locals about where and why they travel around the study area, which was crucial information for the transit alternatives analysis.

Public involvement efforts for the alternatives analysis included opportunities to review and evaluate the importance of recommended modes and routes for Highland Drive and 1300 East. The project story map was available to the public and updated over the course of the study, and two surveys were conducted.

During the first survey, information regarding the project was delivered through the project and partner websites, email blasts, Facebook live events, social media posts from the cities, community council meetings in Millcreek and Sugar House, stickers on trails, and stakeholder content packages. Email blasts were sent out three times during the initial transit study survey.

The second round of public input opportunities involved more city council meetings, reminder email blasts and social media posts, under-served population outreach, decals on routes, and the social event "Yappy Hour." Yappy Hour was an event for dogs and their owners to enjoy live music, food, and beverages. During the event, the Local Link project team hosted a tent discussing the project details to the public, passing out surveys, and answering community questions.

The steering and stakeholder committees had separate opportunities to express preferences for the preferred route, transit mode, support for the Holladay extension, and screening criteria. The committees indicated notable support for Highland Drive as the preferred route with an extension to reach Holladay Village.

Public sentiment gathered during the public comment period favored streetcar followed by enhanced bus for mode and Highland Drive for the preferred route, with support for extending the route to reach Holladay Village. Public survey results also indicated ridership as the most important screening criterion followed by cost and air quality.

**The public preferred
the streetcar option on
Highland Drive.**



TIMELINE AND METHODS

During September and October of 2020, initial surveys for the alternatives analysis were sent out to the project area community by social media posts, live website meetings, email blasts, mail, stakeholder content packages, and meetings with Sugar House community council. The comment period for the transit alternatives lasted from March through April 2021.

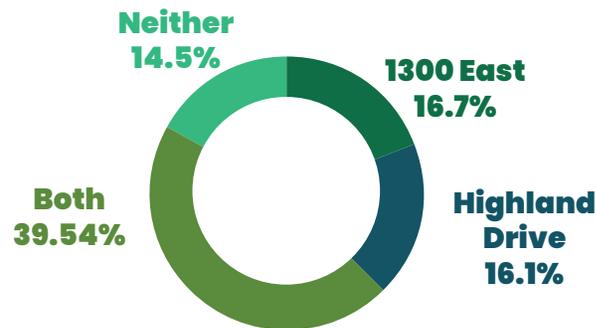


RESULTS FROM THE FIRST PUBLIC SURVEY

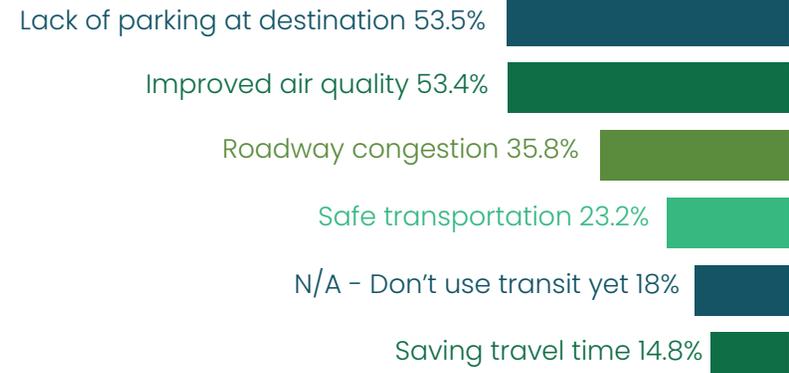
The public provided input on public transportation through two surveys conducted in **fall 2020** and the project alternatives in **spring 2021**. During the first survey, more than **600 public survey responses** were submitted with details regarding transit use, preferences, and important destinations within the study area. The majority of the population preferred to see both 1300 East and Highland Drive have transit improvements with the top destination for future travel as the Sugar House Business District. The top motivators for the public using transit instead of driving were lack of parking, improved air quality, and roadway congestion. The transit features were ranked from highest to lowest importance, with frequency as number one, which supports an enhanced bus system.



TRANSIT IMPROVEMENTS ARE PREFERRED ON BOTH 1300 EAST & HIGHLAND DRIVE



MOTIVATORS FOR USING TRANSIT INSTEAD OF DRIVING



TOP DESTINATIONS TO VISIT VIA TRANSPORTATION



MOST IMPORTANT FEATURES OF TRANSIT

- 1 Frequency
- 2 Access to Station
- 3 Reliability

RESULTS FROM THE SECOND PUBLIC SURVEY

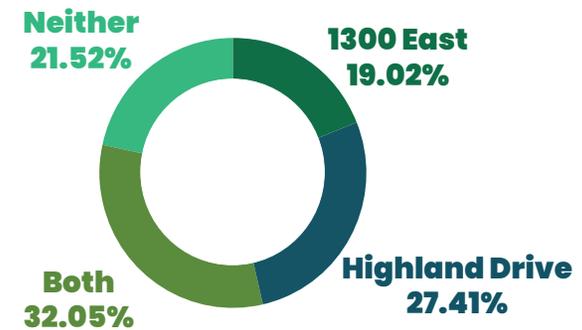
With more than **1,200 public survey responses**, the majority of the results were in favor of streetcar followed by BRT for mode and Highland Drive for the preferred route. The majority of the results also supported the extended route reaching Holladay Village.

The Yappy Hour event took place in July 2021, which provided an extra opportunity to show the project and meet with the community. The project team put together posters that show the differences between modes and visuals of the modes on streets similar to Highland Drive. Comment cards were available for the public to provide comments and questions.



Local Link project team members discussing the project priorities, goals, and future timeline with the local community.

BOTH 1300 EAST AND HIGHLAND DRIVE WERE PREFERRED FOR TRANSIT IMPROVEMENTS



STREETCAR WAS THE CLEAR PREFERRED MODE



WHEN ASKED WHICH SCREENING CRITERION WAS MOST IMPORTANT, THE COMMUNITY SAID RIDERSHIP



7 | Next Steps

NEXT STEPS

The locally preferred alternative was presented to the project partner city councils in early 2022.

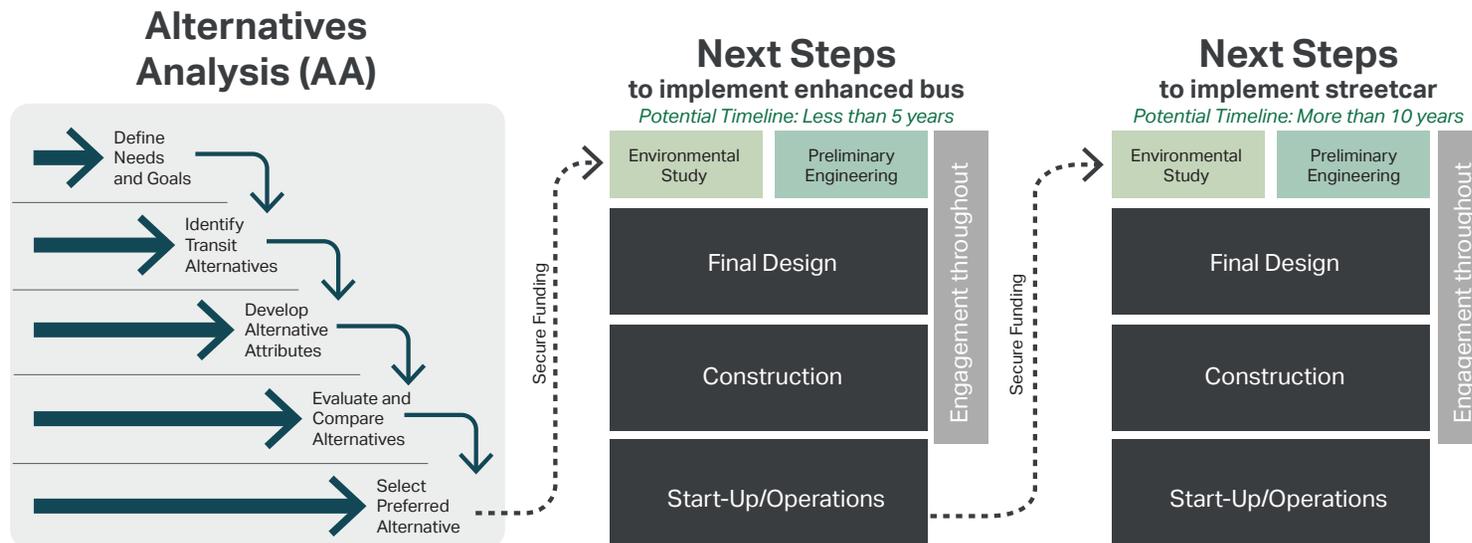
UTA will determine if an environmental study is needed for enhanced bus, and will determine the level of environmental document if one is needed. After this, funding will need to be identified for this project, which will lay the foundation for the environmental study and preliminary engineering. A key aspect of all these future phases will be a continuation of the public outreach that began during this study that will continue through construction.

Enhanced bus operations could be implemented in less than five years. Salt Lake City and Millcreek have active multimodal projects underway to improve bus stops along Highland Drive from Sugar House Business District to 3300 South. Enhanced bus service could be implemented once funding was prioritized for the increase in service along the locally preferred alternative and enhancements to bus stops from 3300 South to Holladay could be advanced as funding is available.

This process will repeat for the next phase of improvements to implement the streetcar alternative. While the steps are similar, the timeline to implement streetcar will be longer as the investment needed to construct and operate the streetcar alternative is substantially more. It is likely that a combination of local, state, and federal funding would be needed in order to fund the streetcar project. The Federal Transit Authority's Capital Investment Grants (CIG) program is a primary funding source for projects like the streetcar, but is competitive across transit projects for the entire country. Each project is given a rating based on numerous criteria including future project cost and ridership.

It is unlikely that the locally preferred alternative with streetcar would qualify for CIG federal funds based on current cost and ridership projections. Over time as land use continues to increase in density within Holladay, Millcreek, and the Sugar House Business District, and transit connections are strengthened with the implementation of enhanced bus, ridership is expected to increase and the pursuit of CIG funds for streetcar may become a viable option.

FIGURE 17. NEXT STEPS



FUNDING

Like most transit projects, there is a combination of several funding sources which could pay for the development, construction, and operation of a project. The following funding sources have been identified as possible options for the locally preferred alternative:

Local Funding: 4th quarter sales tax funds can be used for prioritized transit projects by local municipalities

State Funding: Transit Transportation Investment Fund is a state funding source that can be used to fund capital transit projects as well as active transportation projects with a direct connection to a transit station. Projects are prioritized by the Utah Transportation Commission with UDOT, and the state's Metropolitan Planning Organizations (MPOs).

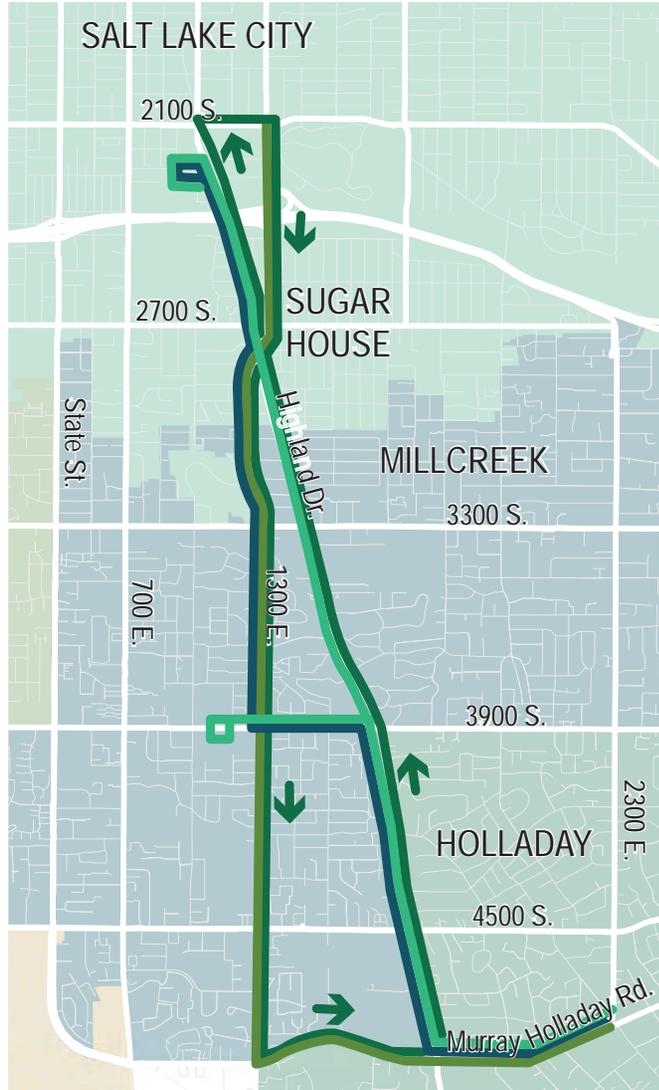
Federal Funding: RAISE Grants are the most likely candidate for mid-sized (\$50-100M) projects which incorporate multiple modes. The Capital Investment Grant Program is a discretionary grant program which funds transit capital improvements including streetcars. The CIG program for this project could fall under the New Starts or Core Capacity programs. New Starts includes new or extension of existing corridor-based project and Core Capacity includes capacity improvement projects (increasing capacity by at least 10%) on an existing transit line. There is also an Expedited Project Delivery program which includes projects from the New Starts and Core Capacity program that utilize public-private partnerships, are maintained by employees of an existing public transportation provider, and have a federal share not exceeding 25 percent of the project cost.

APPENDIX A

Eliminated Alternatives

Eliminated Alternatives

FIGURE A1. ELIMINATED ALTERNATIVES



Alternative Description	Justification for Elimination
<p>1300 East: From Wilmington Avenue in Sugar House over I-80 to Murray Holladay Road.</p>	<p>Removed due to the potential constraints of crossing UDOT’s I-80/1300 East overpass.</p> <p>Terminus along 1300 East would be outside of the core Sugar House Business District and future planned transit connections from Sugar House to downtown.</p>
<p>A loop on Highland Drive to the north and turning around at 2100 South to go south on 1300 East.</p>	<p>Removed due to likely transit user confusion and potential out-of-direction travel with ‘loop’ routing.</p>
<p>Switching over from Highland Drive on the south, to 1300 East in the middle via 3900 South and back over to Highland Drive at 2700 South.</p>	<p>Removed due to likely transit user confusion and anticipated additional travel time with the out-of-direction travel between Highland Drive and 1300 East.</p>
<p>Only using Highland Drive, and adding a stop to the west at St. Mark’s Hospital off 3900 South.</p>	<p>Removed due to anticipated additional travel time and out-of-direction routing to accommodate a new stop at St. Mark’s Hospital.</p>

Exhibit 3: Local Link Ordinance

SALT LAKE CITY ORDINANCE
NO. ___ OF 2022

(Ordinance adopting the 2020 Local Link Circulation Plan)

WHEREAS, on November 12, 2013, the Salt Lake City Council passed Ordinance No. 63 of 2013 adopting the Circulation and Streetscape Amenities Plan for the Sugar House Business District (the “2013 Circulation Plan”) as an addendum to the Sugar House Master Plan; and

WHEREAS, in 2020, Salt Lake City, South Salt Lake, Millcreek, and Holladay collaborated on the Local Link Circulation Study to evaluate and accommodate transportation options and identify gaps and barriers that make it difficult for people to efficiently travel through and around the Sugar House Business District; and

WHEREAS, the Local Link Circulation Study produced a set of final program and policy recommendations based on the gaps and barriers identified in the study area (the “2020 Local Link Circulation Plan”); and

WHEREAS, the Salt Lake City Planning Commission held a public hearing on July 27, 2022 to consider recommending adoption of the 2020 Local Link Circulation Plan as an addendum to the 2013 Circulation Plan; and

WHEREAS, at its July 27, 2022 meeting, the Salt Lake City Planning Commission voted in favor of recommending to the Salt Lake City Council that the City Council adopt the 2020 Local Link Circulation Plan as an addendum to the 2013 Circulation Plan; and

WHEREAS, after holding a public hearing on this matter, the City Council has determined that adopting this ordinance is in the City’s best interests.

NOW, THEREFORE, be it ordained by the City Council of Salt Lake City, Utah:

1. Adopting the 2020 Local Link Circulation Plan as an Addendum to the Circulation and Streetscape Amenities Plan for the Sugar House Business District. The 2020 Local Link Circulation Plan is hereby adopted as an addendum to the Circulation and Streetscape Amenities Plan for the Sugar House Business District, which itself is an addendum to the Sugar House Master Plan.
2. Jurisdiction. The 2020 Local Link Circulation Plan shall apply within the City’s municipal boundaries as identified in the 2020 Local Link Circulation Plan attached hereto as Exhibit “A.”
3. Effective Date. This ordinance shall take effect immediately after it has been published in accordance with Utah Code 10-3-711 and recorded in accordance with Utah Code 10-3-713.

Passed by the City Council of Salt Lake City, Utah, this _____ day of _____, 2022.

SALT LAKE CITY COUNCIL

By: _____
Dan Dugan, Chair, Salt Lake City Council

ATTEST AND COUNTERSIGN:

CITY RECORDER

Transmitted to Mayor on _____.

Mayor's Action: _____ Approved. _____ Vetoed.

MAYOR

CITY RECORDER
(SEAL)

Bill No. _____ of 2022
Published: _____.

APPROVED AS TO FORM
Salt Lake City Attorney's Office
Date: September 22, 2022
Sara Montoya

Sara Montoya, Senior City Attorney