

# TAYLORSVILLE EXPRESSWAY

**B R T**  
MASTER PLAN



**DRAFT FINAL 9-18-2015**





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# INTRODUCTION

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## BACKGROUND SETTING AND PURPOSE

Incorporated in 1996, Taylorsville is one of the newest incorporated areas in Utah. More than 60,000 people call Taylorsville home, and thousands more are expected to join their ranks as the area continues to mature. The city is the densest in the State, and is strategically located in the heart of Salt Lake County. Taylorsville has come into its own since incorporation, building upon its agricultural roots and hard work ethic to become one of the most desirable places to live and work along the Wasatch Front. Taylorsville is a forward-thinking community, with a clear vision of where it is headed.



A Greater Cleveland RTA HealthLine BRT vehicle at Public Square in downtown Cleveland, Ohio

In April and September of 2013, an Environmental Study Report and Decision Document was published supporting a proposed Bus Rapid Transit (BRT) project in Taylorsville. Referred to here as the Taylorsville Expressway, the proposed corridor consists of a bus rapid transit (BRT) line that will provide an east-west transit connection between the Redwood Road campus of Salt Lake Community College in Taylorsville and the existing UTA FrontRunner and TRAX station located immediately west of the Intermountain Medical Center in downtown Murray.

A key segment of the route is located within the 4700 South right-of-way, which extends eastward from Redwood Road near the community college to approximately 800 West at the eastern city limit. This 4700 South segment is envisioned to include the BRT line within the center of the 4700 South right-of-way, which currently consists of a center median and two travel lanes in each direction, and wide shoulders on both sides of the street. The center median in the current configuration of 4700 South (a UDOT facility) separates vehicular traffic movement and could be modified to support the implementation of a comprehensive BRT facility.

The vision for the 4700 South Corridor is that it should become a “Complete Street,” where enhancements located within the public right-of-way will have a catalytic effect on the improvement and upgrading of



The Emerald Express BRT – example of existing stations from Eugene, Oregon

adjacent and nearby properties and support a full range of modes including walking and cycling. The project will also encourage and support Transit Oriented Development opportunities around each of the proposed stations, and will include high quality urban amenities and design features such as unified streetscapes, comprehensive gateway and signage, and unified architectural and landscape treatments.

The key to realizing this vision lies in the details, which are illustrated in this Master Plan. It should be stressed that these ideas were developed as part of a participatory planning and design process that brought key stakeholders, neighbors and city leaders together. In other words, the Taylorsville Expressway is well-supported and reflects specific concepts that should be incorporated as part of future design and engineering as the project is readied for construction.

## WHY IS THIS A GREAT PROJECT?

Bus Rapid Transit, in which buses use dedicated lanes and perform like rail lines, can not only spur development, but can do so more efficiently than light rail and streetcars. According to several recent studies, BRT is able to leverage more development investment than light rail or streetcars. This is supported through several high profile examples, including Cleveland’s Healthline, a BRT project completed in 2008 which has generated \$5.8 billion in development — \$114 for each transit dollar invested. Less dramatically, the Blue Line in Portland Oregon has generated nearly \$4 per dollar invested since completion.

Unfortunately, some BRT projects fail to achieve their potential, due in part to being treated primarily as a transportation mode for moving people. However, so many other things can be achieved with a great BRT system when properly designed. For example, BRT allows for more transit riders and can create a more green, sustainable community in the process. Not only can this help riders save precious time and money, but it can also connect more people to much-needed jobs and educational opportunities.

The bottom line is that the proposed Taylorsville Expressway provides a solid transportation option that:

- Is economically feasible;

## The Taylorsville Expressway meets all of the Wasatch Choice 2040 Growth Principles and Objectives, as follows:

1. Provide Public Infrastructure that is Efficient and Adequately Maintained
2. Provide Regional Mobility through a Variety of Interconnected Transportation Choices
3. Integrate Local Land-Use with Regional Transportation Systems
4. Provide Housing for People in all Life Stages and Incomes
5. Ensure Public Health and Safety
6. Enhance the Regional Economy
7. Promote Regional Collaboration
8. Strengthen Sense of Community
9. Protect and Enhance the Environment

# TAYLORSVILLE EXPRESSWAY B R T

- Can reduce pollution and improve regional air quality;
- Provides good economic return for the money invested;
- Encourages community engagement and collaboration with local residents, businesses, schools and other partners; and
- Is a turn-key project and is close to being shovel-ready.

Most importantly, the expressway provides an opportunity to create a great roadway that is more than a successful transit improvement, and possibly a regional and national model of a great street that other cities will want to emulate.

## OVERVIEW OF THE EXPRESSWAY

The Taylorsville Expressway links Salt Lake Community College (SLCC) with the Murray TRAX/Front Runner Station. The Environmental Study Report identified eight stations along the route, five of which are located in Taylorsville. While developing the BRT master plan, two additional stations were proposed, supporting future development along the expressway route.

The proposed BRT line enters Taylorsville from the east along 4800 South, soon after turning north along Sunstone Road/South Atherton Drive before joining 4700 South. At this point the BRT route turns to the west, extending slightly beyond Redwood Road before turning north into the Salt Lake Community College Redwood Campus and the terminus station.

Within the Taylorsville segment, the BRT route passes an extensive area of manufactured homes in the

east, with single-family homes lining 4700 South further to the west. Sorenson Research Park is located on the north side of the expressway toward the eastern edges of the project, encompassing a range of commercial and office-type uses, with similar uses slated to come in the future. Meadow Brook Golf Course is located north of the research park, with the Jordan River Parkway located nearby to the east, providing an important recreational and trail connection.

A few higher-density residences are located immediately west of the research park, providing a transition to the single-family neighborhood beyond and Fore Lakes Golf Course, which is located on the south side of 4700 South closer to Redwood Road. A senior center and small park mark the southeast corner of Redwood Road; with the other corners of Redwood Road containing fast food restaurants, small shops and similar commercial uses. The commercial profile continues south and north of the expressway along Redwood Road, and further west along the BRT corridor. The SLCC campus is located just beyond the northwest corner of the Redwood Road intersection. A power corridor extends between two mobile home parks on the south side of the expressway, bisecting Sorenson Research Park to the north. The corridor includes a trail south of the roadway.

As illustrated in the figure below, the route includes seven proposed BRT stations within the Taylorsville city boundary – one at the SLCC terminus location, one at the southern entrance to the SLCC campus, three along the 4700 roadway segment, and two along Sunstone Road toward the east end of the route. Each of these stations has been carefully sited to provide sufficient access in the hope that they will spur change in the surrounding neighborhoods and encourage growth. This anticipated growth includes the development of new mixed-use housing in the immediate areas around the stations as market conditions dictate, including student housing for Salt Lake Community College.



Proposed BRT route with adjacent land use



Proposed BRT stations and opportunity nodes

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# INTRODUCTION

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## STATION LOCATION OVERVIEW

The following is a brief description of the seven Taylorsville stations and the changes that are anticipated in the surrounding neighborhoods as the project is implemented. Detailed descriptions of the stations are provided later in the plan. The stations are presented consecutively, from west to east.

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### Salt Lake Community College

There are two opportunities to board the bus at the SLCC campus with each station located along a new street that extends from 4700 South just west of Redwood Road into the campus. The station closest to 4700 South will be a minor stop that is coordinated with new student housing or similar uses located near the southern edge of the campus. The main campus station is located near the east center edge of campus, on axis with the east/west running campus mall. Together, it is anticipated that both stations will serve as the catalyst for creating a new “town and gown” district west of Redwood Road, encompassing a unified mix of housing, commercial, and educational buildings, in addition to new civic spaces, plazas and streetscapes.

3



View of the future entrance to the Salt Lake Community College campus and future student housing from 4700 South. The location of a minor BRT station is located just inside the campus to the left.



View of Salt Lake Community College from Redwood Road. The main campus station is envisioned in this area.

### Fore Lakes Station

Implementation of this station hinges on the redevelopment of the existing golf course into a new mixed-use destination, with a primary focus on new housing opportunities. As illustrated in the following photos, Orenco Station - a beautiful, modern neighborhood of the city of Hillsboro, Oregon – serves as a possible model for development in the area. Similar to the Fore Lakes site, Orenco Station was designed as a pedestrian-friendly, mixed-use project, although in conjunction with light rail rather than BRT.



Top Left: Orenco Station mixed-use building and associated streetscape

Top Right: Orenco Station multifamily housing



Left: A typical streetscape includes wide sidewalks, shade trees and opportunities for cafes and similar uses.



View of the existing Fore Lakes Golf Course as viewed from 4700 South.

# TAYLORSVILLE EXPRESSWAY

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## West Atherton Station

This station marks the west end of Sorenson Research Park. Surrounded by a range of residential uses and neighborhoods, the site is not fully developed and provides opportunities to bring new uses, infill select parking lots with new commercial uses such as cafes and restaurants, and develop a robust system of pedestrian and cycling amenities in the process.



View of Sorenson Research Park looking northeast from the intersection of 4700 South and Atherton Drive. West Atherton Station is envisioned to be located in the center of the street where the existing median is located.

## Riverboat Station

This station marks the east end of Sorenson Research Park, facing neighborhoods of manufactured homes to south. It is envisioned that a mid-street station will encourage the complete development of the research park and enhance the surrounding neighborhoods, providing strong connections with the Jordan River Parkway and areas to the east as well. Select parking lots are anticipated to be infilled with new uses at Sorenson Research Park, with similar transitions provided for neighborhoods to the south as part of carefully-considered mixed-use, market and subsidized-housing development. Due to the high-profile location of this station and the important entrance role it provides, the streetscapes, surrounding properties and station itself should include high-quality design including iconic entry landmarks and gateway features.



View of Sorenson Research Park from the intersection of 4700 South and Riverboat Road. Riverboat Station is envisioned to be located in the center of the street where the existing median is located.

## Sunstone Station

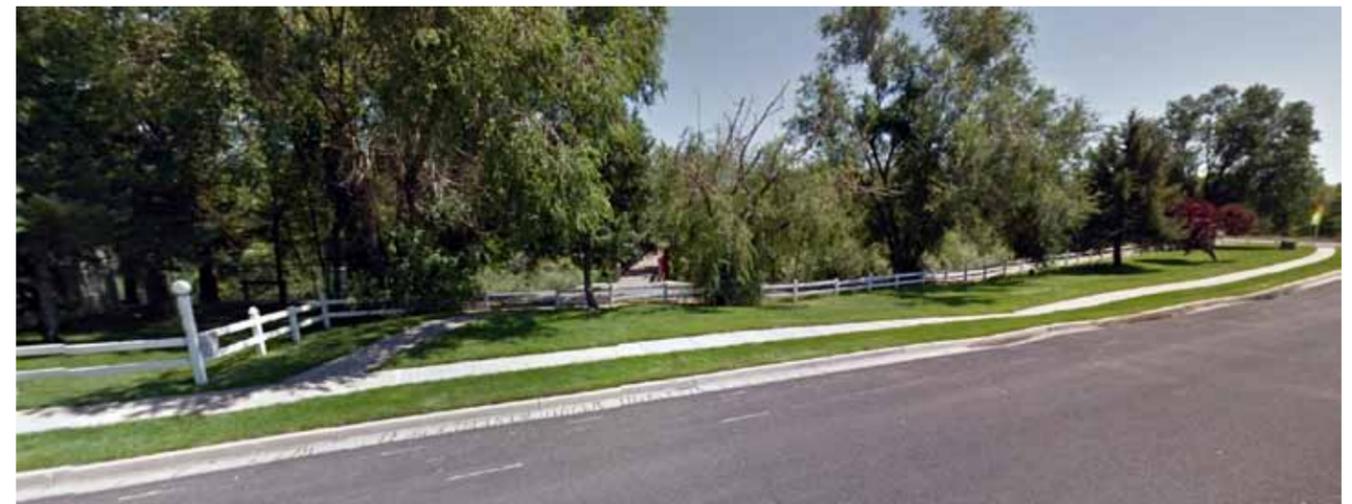
In contrast to the other four stations, this station is located on a pleasant, tree-lined street. Since the right-of-way is quite narrow, the station is likely to be similar to a standard bus stop. It is assumed that the surrounding neighborhoods will remain intact in the early stages, until market changes dictate possible change in the future. If any land use changes take place, they should be carefully considered to ensure that affordable housing options are provided in the area.



View of street edge conditions near the proposed east Sunstone Station.

## Arrowhead Park Station

While not proposed in the Environmental Study Report, a station at Arrowhead park is suggested in this location in order to take advantage of a great location along the edge of a pleasant city park, adjacent to the Jordan River Parkway. This station has excellent potential for creating a strong gateway into Taylorsville for residents and visitors entering the area from the south.



View of Arrowhead Park and the Jordan River Parkway from Sunstone Road. This is the proposed location of the Arrowhead Park side station.

# TRANSPORTATION ANALYSIS & RECOMMENDATIONS

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## **EXISTING AND FUTURE TRANSPORTATION CONDITIONS ANALYSIS**

This section analyzes the opportunities to improve transportation along the proposed Taylorsville Expressway Bus Rapid Transit (BRT) corridor. The focus is to understand how to enable the implementation of the BRT service as well as to identify how all transportation modes can support this transit investment and achieve Taylorsville City's BRT corridor goals. In addition, mitigation of potential negative impacts of BRT are addressed as well as possible opportunities for improvements created by the BRT project.

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### **Overview**

The Taylorsville-Murray Bus Rapid Transit project is planned as a 4.5-mile Bus Rapid Transit (BRT) line connecting the Murray Central TRAX/FrontRunner Station with the Redwood campus of Salt Lake Community College, with stops in between serving destinations such as Sorenson Research Park. UTA views the project as a regional mobility improvement – getting people from the trunk of the tree down a major branch. UTA estimates that by 2030 nearly half of all east-west routes in Salt Lake Valley will be highly congested, and hopes that the Taylorsville-Murray BRT will provide viable transportation alternatives.

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UTA and other agencies undertook an Environmental Study Report (ESR) to determine a preferred alternative alignment for BRT. The ESR identified a BRT line running initially through Murray neighborhoods, crossing into Taylorsville over the Jordan River on 4800 South, turning north on Sunstone, then turning again on Atherton, and continuing west on 4500 South (Taylorsville Expressway) through its intersection with Redwood Road, then north to Salt Lake Community College. The ESR recommended eight stations, with four located in Taylorsville – Sunstone Road; Riverboat Road; Atherton Drive; and Salt Lake Community College. A future station may be located at the Fore Lakes Golf Course if that property is redeveloped. Although not specified in the ESR, there is some desire to extend the BRT line in a future phase to the West Valley City center from SLCC, likely along 2700 West.

### **Operations/Design**

The ESR recommends that the service would initially provide 15 minute headways. Of the 4.5 miles, the ESR recommends that 1.4 miles would provide dedicated space for the BRT vehicles. The ESR also recommends BRT vehicles would receive a queue jump at the Redwood Road intersection and would receive signal priority at Riverboat Road, 815 West (Atherton East), and future Fore Lakes station (early green, up to 10 seconds). It also recommends that stations would include machines where passengers could prepay fares to speed up the boarding process.

In addition, the ESR identifies a few other aspects of the potential BRT line such as comfortable stations; increased visibility of transit; convenient user information; and modal integration.

### **Projected Performance**

The ESR projects that the trip from Murray Central Station to SLCC will take approximately 13 minutes, which will cut the time roughly in half from the current transit travel time between those two points. The ESR projects that the Taylorsville-Murray BRT line will have 2,200 riders boarding per weekday on opening day in 2016 (489 boardings per mile); and 4,600 riders by 2040 (1,022 boardings per mile). The ESR anticipates that the person throughput of the BRT route will be 7 percent in 2016 and 10 percent in 2040.

Impacts on traffic operations are projected to be minor – there would be no change in level of service but overall person mobility will improve.

### **Funding Prospects**

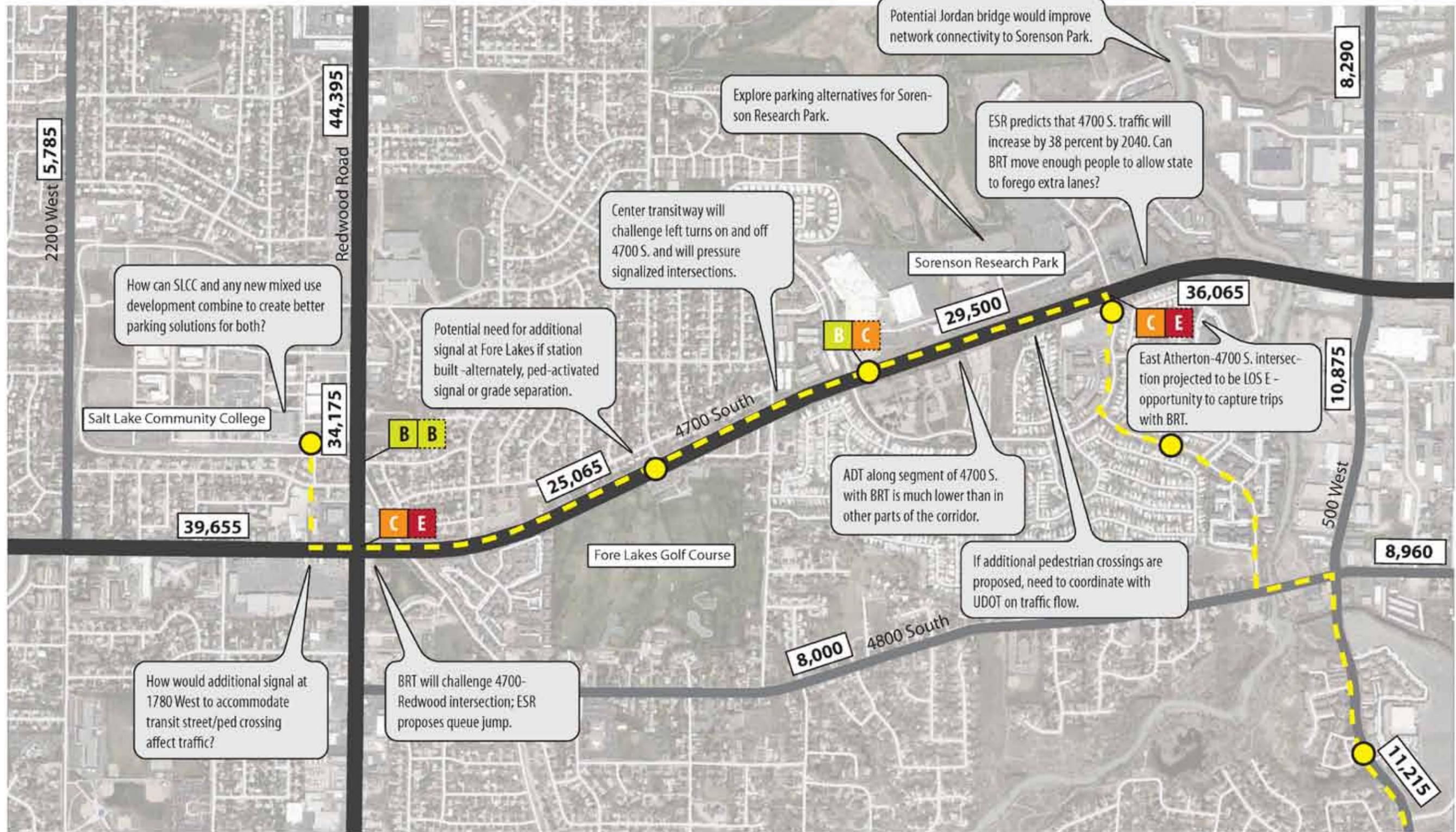
The Taylorsville-Murray BRT is not funded for construction, but there are alternatives for obtaining the funding to build the line, such as further state funding, federal funding (although the project would need a federal-level environmental document. Some preliminary design funds were provided during the 2015 Utah Legislature session for this project.

### **Transportation Network Analysis**

The transportation networks for the four major transportation modes - **vehicles/ transit/ bicycles/ walking** - was explored and analyzed. The following maps summarize the assets, challenges and opportunities along the Taylorsville Expressway for each mode.

# TAYLORSVILLE EXPRESSWAY B R T

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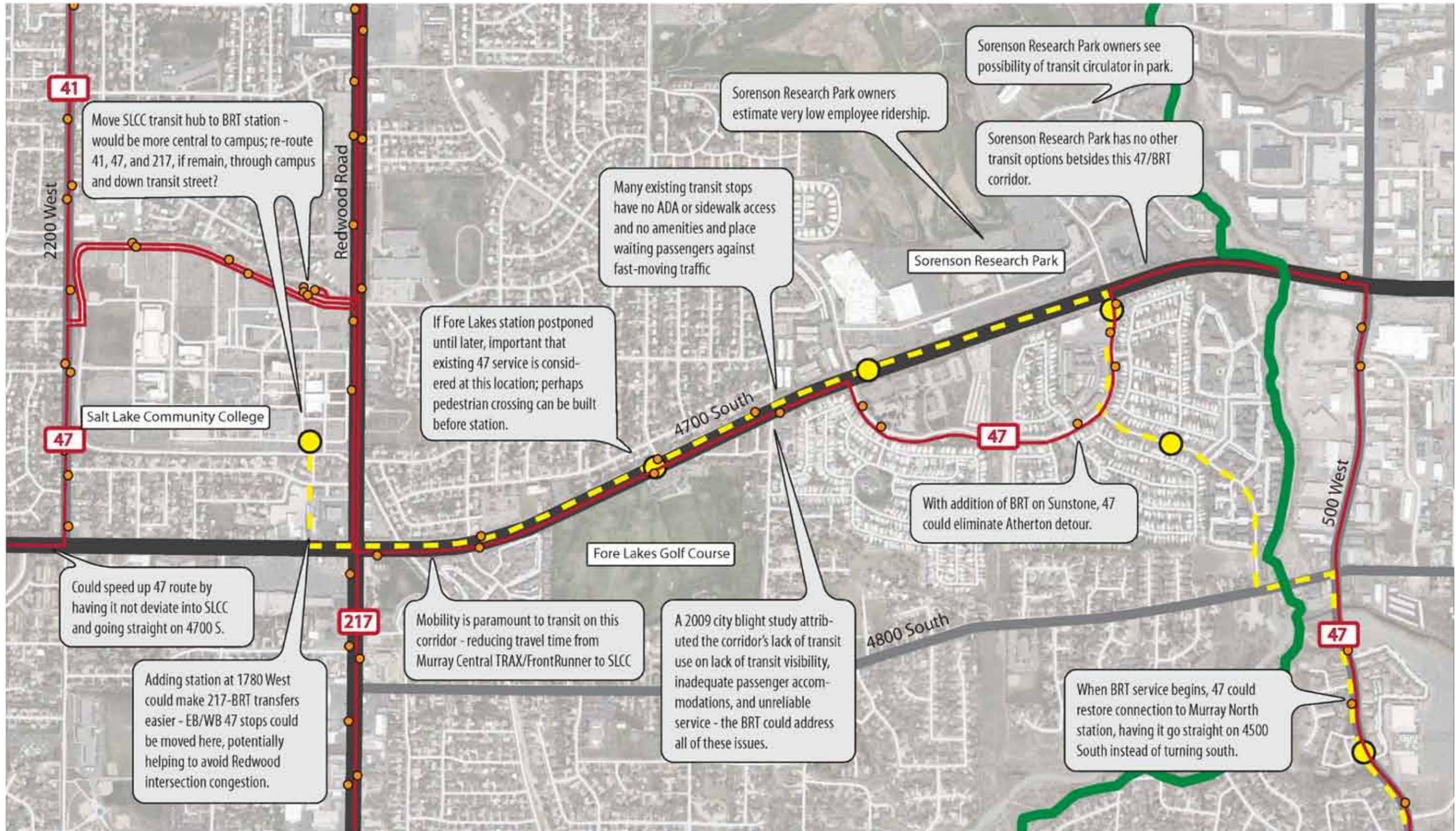


## VEHICLE NETWORK ANALYSIS



# TRANSPORTATION ANALYSIS & RECOMMENDATIONS

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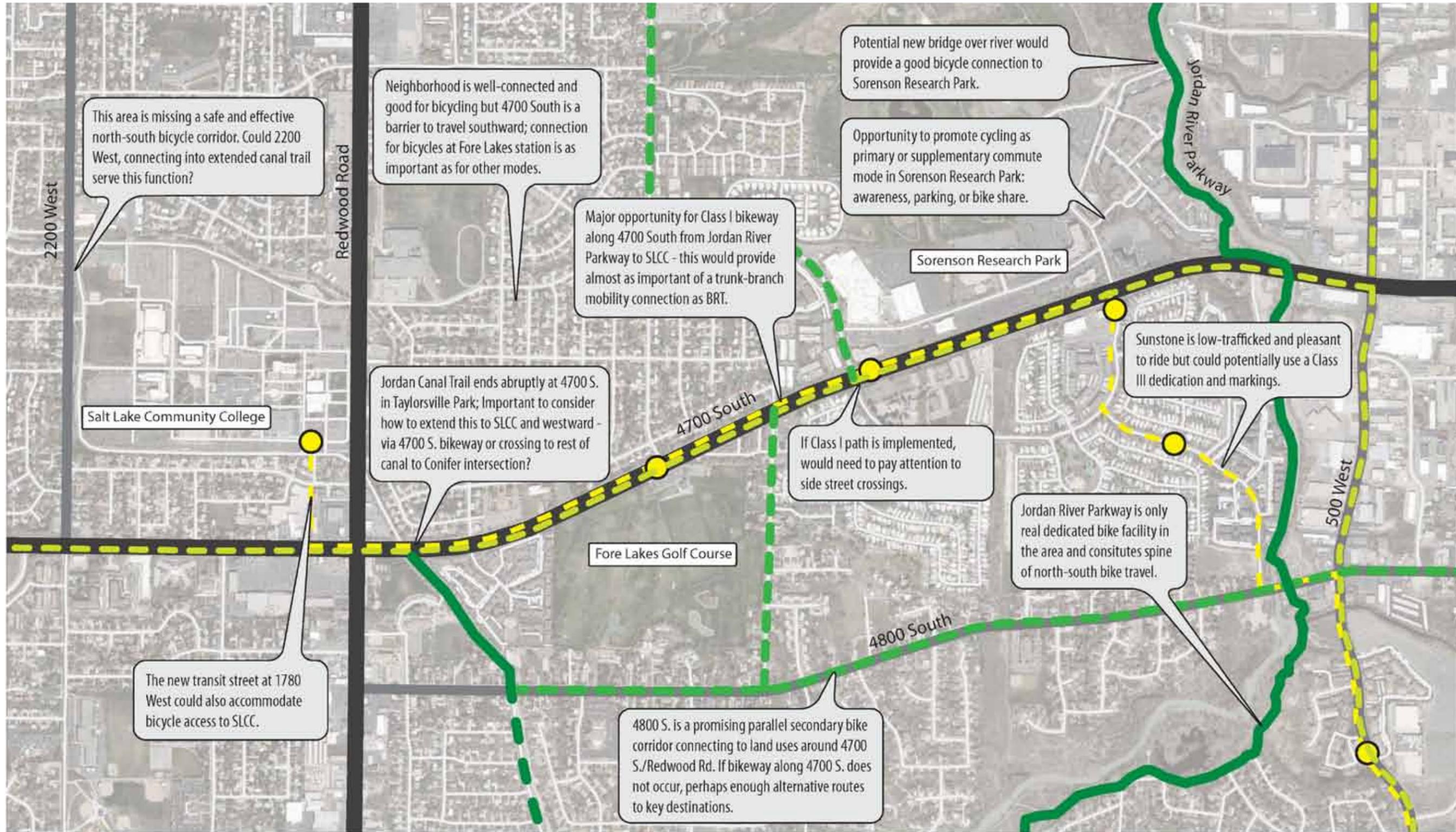
## TRANSIT NETWORK ANALYSIS



# TAYLORSVILLE EXPRESSWAY

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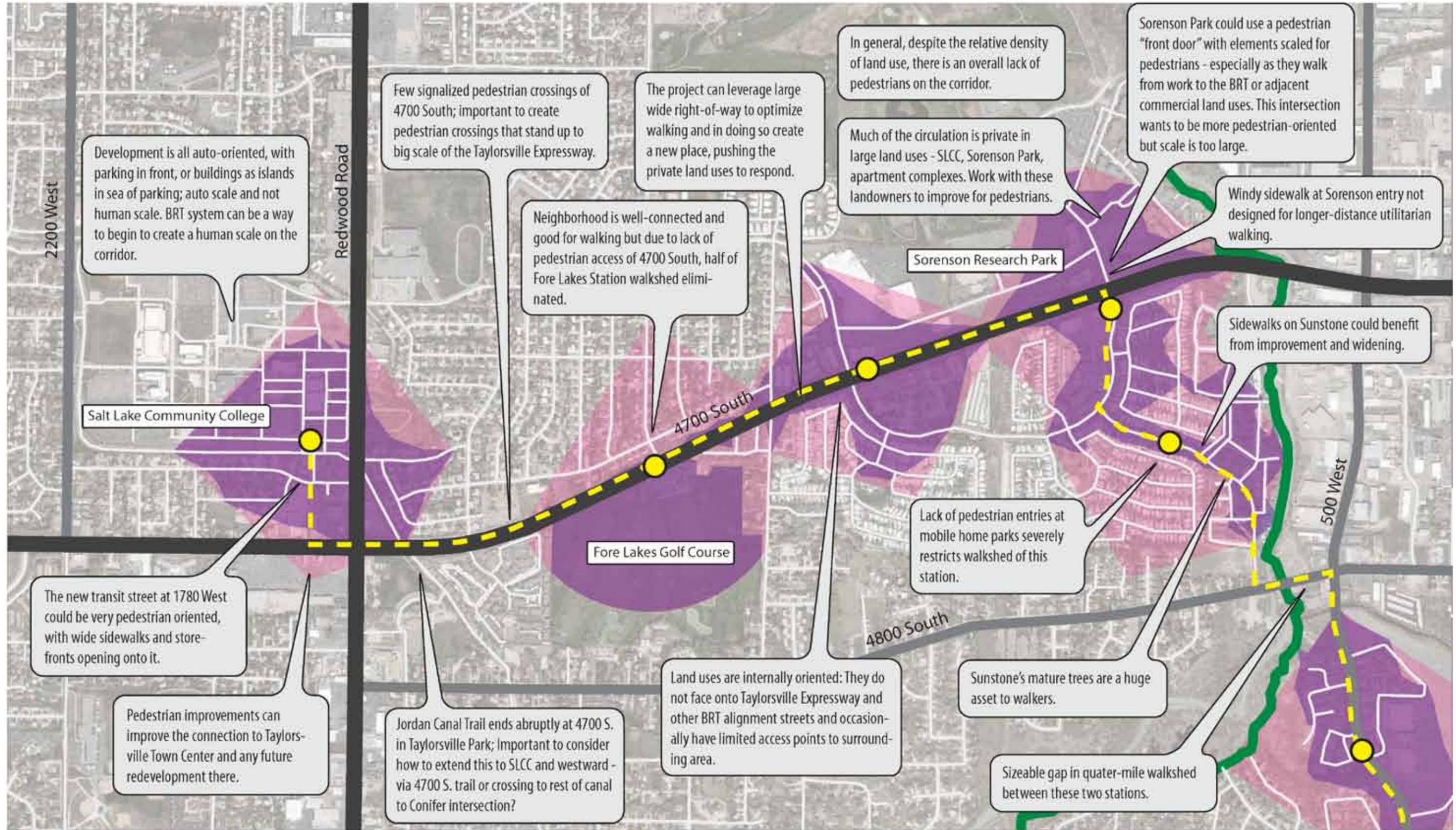


## BIKE NETWORK ANALYSIS

- Future BRT Allignment
- Future BRT Station
- Major Arterial
- Major Collector
- Existing/planned Class I bikeway (path)
- Existing/planned Class II bikeway (dedicated lane)
- Existing/planned Class III bikeway (shared street lane)
- Multi-use path

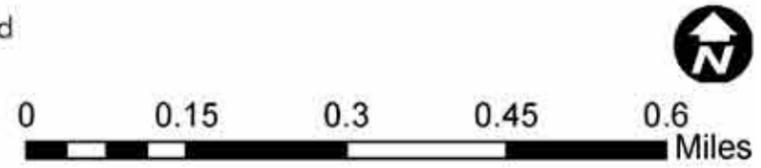
# TRANSPORTATION ANALYSIS & RECOMMENDATIONS

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## PEDESTRIAN NETWORK ANALYSIS

- - - Future BRT Alignment
- Future BRT Station
- Multi-use path
- Major Arterial
- Major Collector
- 1/4 mile potential walkshed
- 1/4 mile actual walkshed



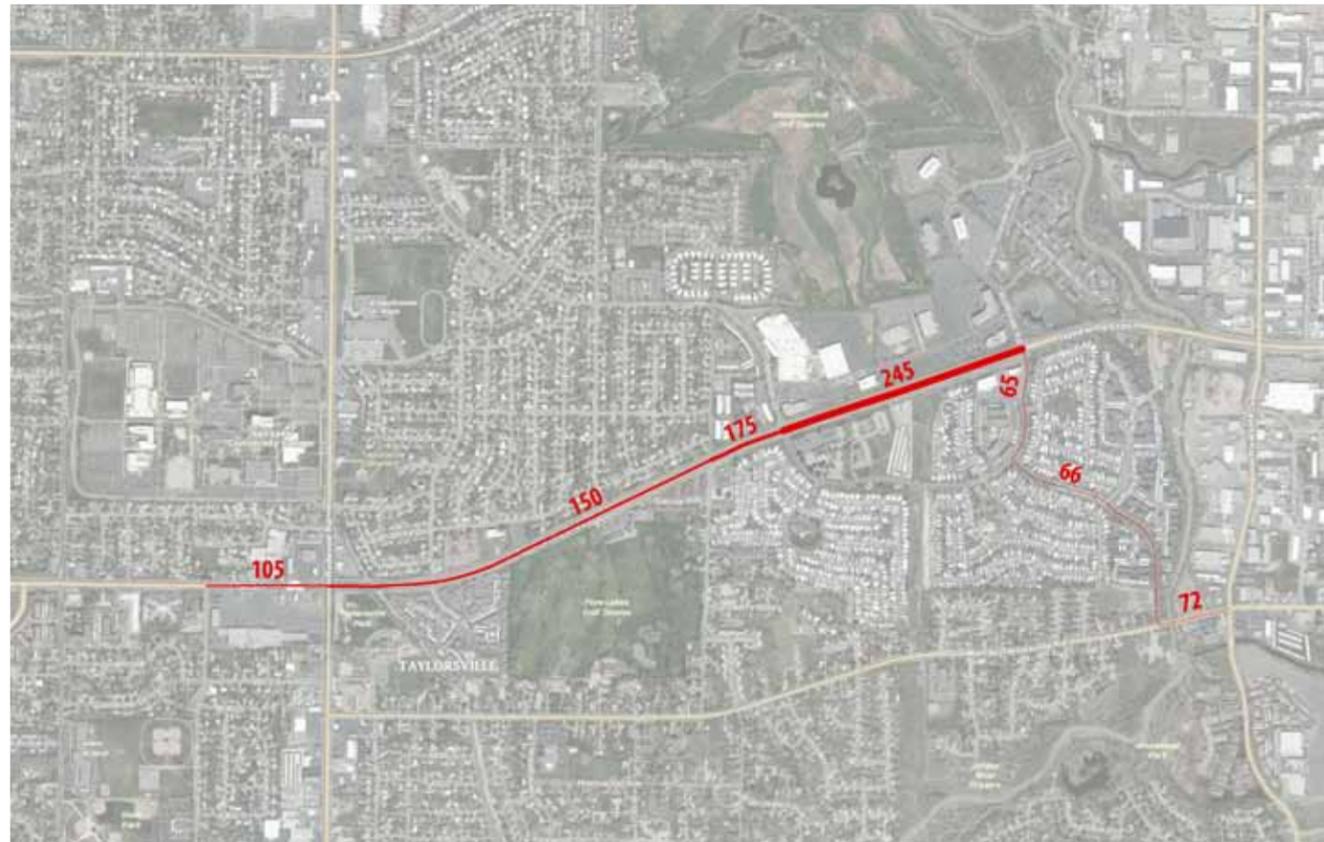
## TAYLORSVILLE EXPRESSWAY FACILITY ANALYSIS

### Overview

While the Taylorsville-Murray Bus Rapid Transit project will run on several streets within Taylorsville, much of the line would run in mixed traffic on local-level streets such as Sunstone Road and Atherton Drive that are not likely to require many changes. Approximately 1.4 miles of the route will run in dedicated lanes on 4500/4700 South (Taylorsville Expressway), which will demand more attention and modifications. In particular, the dedicated lanes on 4500/4700 South will need to be redesigned to accommodate dedicated stations and enhanced intersections treatments. In addition, the wide right-of-way provides excellent potential for being transformed into a superlative place for walking and bicycling environments. As a result, attention has been placed on exploring the potential for transforming the Taylorsville Expressway into a multi-modal corridor.

### Existing and Planned Facility

As illustrated in the accompanying illustration, the Taylorsville Expressway currently has a right-of-way width that varies from 105 feet near Redwood Road to 245 feet at Sorenson Research Park. The existing roadway currently encompasses four travel lanes, two in each direction with a shoulder and a wide grass median, which is occupied by turn lanes at major intersections. There is a sidewalk running along the south side of the street for the entire BRT segment (ending just shy of the Jordan River beyond Riverboat Road),



Varying right-of-way widths along the Taylorsville Expressway

and no sidewalk on the north side for the bulk of this BRT segment. UDOT has expressed plans to add a third lane in each travel direction, and is also exploring intersection improvements at the 4700 South/Redwood Road intersection that will provide additional vehicular capacity.

## TAYLORSVILLE EXPRESSWAY “D” ANALYSIS

### Overview

A high-level analysis was conducted for the Taylorsville Expressway BRT corridor, focusing on how well the project fulfills the six “D’s” - factors that are typically used as metrics for determining the likelihood of success in transit-oriented development:

- **Density:** The concentration of people living, working, attending school, shopping, recreating, or visiting within or otherwise occupying the station area.
- **Diversity:** The degree of variety of activities happening within the station area, especially pertaining to a mix of living, working, going to school, and recreation. High diversities of land uses help make transit and walking feasible transportation options.
- **Design:** The degree to which the environment of the station area appeals to human beings as opposed to motor vehicles. These aspects include a human-scale environment; easy pedestrian access between public streets and private destinations; and a comfortable public realm.
- **Destinations:** The presence of places drawing large amounts of people, especially those attracting people’s free time such as parks, museums, and entertainment centers.
- **Distance:** The degree to which the multi-modal transportation system supports easy, safe access between the station and the destinations/origins around it, and also how destinations outside the station area can be accessed via the transit service.
- **Demographics:** The degree to which the qualities of the people living and working in the station area typically lead them to ride transit.

While these qualities can be fulfilled in different ways, each one is an “ingredient” often found in successful transit-supportive areas. As described below, the following conclusions emerge from this analysis:

- In general, the **density** is in place: Taylorsville is the densest city in Salt Lake Valley, and much of the housing along the planned BRT corridor is multifamily or mobile-home. Sorenson Research Park is a relatively dense employment center and SLCC contains a large concentration of students. In order to get an overall density metric, the team measured overall “human intensity” for each traffic zone in the corridor. Human intensity is total estimated residents, employees, students, and daily visitors in a given area divided by acres of the given area. The human intensities ranged from 9 people per acre (neighborhood north of Fore Lakes) to about 27 people per acre (Sorenson Research Park). The two densest areas, SLCC and Sorenson Research Park, will likely drive this transit corridor. Each of these areas shows some opportunity to increase density, especially SLCC and Fore Lakes, if it is redeveloped.
- The **diversity** of the area is challenged by coarse, single land uses. While the major land uses such as SLCC and Sorenson Research Park are dense they are also isolated from the other land uses around them. Neither has many complementary land uses such as retail. The high-density residential

# TRANSPORTATION ANALYSIS & RECOMMENDATIONS

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land uses are also isolated from complementary land uses. The SLCC station area shows major opportunity to mix in land use that will complement the college and connect it to the rest of the Taylorsville community.

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- Human-oriented public space **design** is nonexistent – this is probably the corridor’s largest weakness. There are a few large problems. First, the major land uses – SLCC, Sorenson Research Park, mobile home parks, multifamily housing, Taylorsville Town Center, and even to some degree Taylorsville Park – are focused internally, meaning that they are meant to be accessed by auto and experienced internally and thus disconnected from adjacent land uses. Second, the large, busy streets are not designed for pedestrians. Second, the corridor’s design shows very little value and economy of space. Very little public space seems designed with care to the scale of people; there is too much space. However, the BRT project could bring this human-scaled design to every station area.
- In some sense there are major **destinations** along the corridor – SLCC and Sorenson Research Park draw several thousand workers/students each day. However neither of these presents a place people come to for fun. SLCC represents a major opportunity to create cultural attractions, and its potential connection to a redeveloped Taylorsville Town Center could help create an entertainment destination in Taylorsville. Taylorsville Park is another important destination and could be leveraged to create a larger citywide destination.
- The BRT project can greatly improve the **distance** aspect, as can this plan’s recommendations for multi-modal station access. Currently, large busy streets and disconnected street networks make access difficult.
- Because of the student population of SLCC and the proximity of Sorenson Research Park’s concentration of employees to the planned BRT stations, the **demographics** are good for transit in this project.

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## TRANSPORTATION RECOMMENDATIONS

Transportation recommendations for the Taylorsville Expressway encompass three components, as follows:

- Recommended **refinements to the networks** for the four major modes – vehicle, transit, bicycle, and pedestrian;
- **Priorities for the BRT project** itself, including alignment, roadway improvements, operations, and stations; and
- **Concept designs for 4700 South**, which constitutes the dedicated lane portion of the BRT project.

### Network Refinements

Based on the analysis conducted on the transportation networks, we propose the following recommendations are proposed to support the BRT project and enhance community development surrounding it:

#### 1 - The Vehicle Network

The vehicle network recommendations **focus on minimizing the conflicts between vehicle mobility/access on Taylorsville Expressway and the BRT project**. Most of the conflicts occur at the major intersections, specifically at Redwood Road and Riverboat Road. Both of these intersections are projected to go from level of service C to level of service E by 2040, without the Environmental Study Report’s preferred alternative.

One important recommendation is to limit expansion of auto lanes on Taylorsville Expressway. In Phase III (2031-2040) of the Statewide Transportation Plan, 4700 South is planned to be widened from two to three lanes each way, from I-15 to Redwood Road. However, in the interest of supporting BRT investment, conserving space for other modes, and to promote community building along the corridor, it is recommended that the City of Taylorsville and UDOT work together to identify alternative options that will move more people along the corridor more efficiently. One of the most obvious methods is the **implementation of BRT service**, which will make transit faster, more convenient, more aesthetic, safer, and more visible. **Improving bicycle and pedestrian transportation** along the corridor will also reduce the need to use the Expressway for shorter trips, thereby reducing the need for lane expansion. **Access management improvements** created by restricting left turns on and off the Expressway will also make traffic run more smoothly and safely.

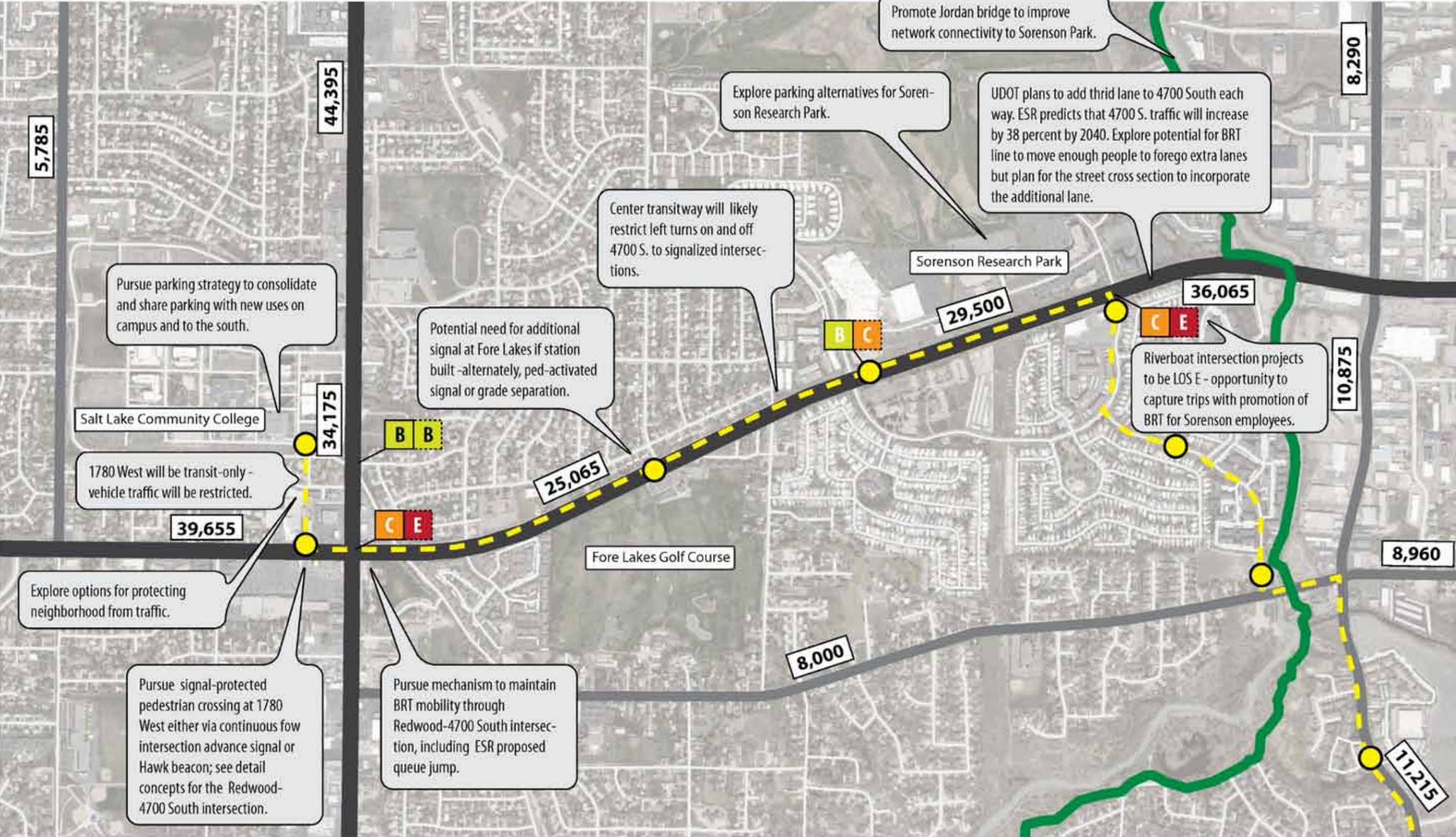
Another important consideration of the vehicle network is parking, specifically at the two largest prospective BRT trip generators - SLCC and Sorenson Research Park. Parking is a key part of making transit work – both to price it effectively so that transit can compete with private automobiles, and to reduce the footprint of parking on valuable land around stations. While both SLCC and Sorenson need to maintain an adequate supply of parking, the City should work with each entity to ensure that the parking strategy complements the success of BRT.

Conversations with SLCC indicate that some of the parking areas in the southeast corner of the campus could be developed without hurting the parking supply. Other elements of a parking strategy could include **shared parking** among different users; exploration of construction of **structured parking**; **pricing** of parking; and **land exchanges** to free land near stations for development. Also, in each of these locations, parking should be part of an overall travel demand management (TDM) strategy to reduce single-occupant vehicle trips.

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## VEHICLE NETWORK RECOMMENDATIONS

- Future BRT Alignment
- Future BRT Station
- Multiuse path
- Major Arterial
- Major Collector
- 39,655 2013 AADT
- C E Existing/projected LOS

# TRANSPORTATION ANALYSIS & RECOMMENDATIONS

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## 2 - The Transit Network

Transit network recommendations focus on refining transit services to support BRT service and associated community-building activities taking place around it. These refinements primarily involve UTA bus routes, but also include SLCC shuttles and potential future public or private services. For recommendations related specifically to the BRT service and capital improvements, see the Bus Rapid Transit line recommendations section.

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Transit network recommendations focus on two major themes. The first is to **adjust UTA bus routes** to efficiently rearrange service with the addition of BRT. The most important of these adjustments is the rerouting of the 47 route directly along 4700 South, eliminating detours on the Atherton loop and through Salt Lake Community College, and taking a more direct route to 4500 South without utilizing Sunstone Road and Atherton Drive. This would allow passengers wishing to access points west of Redwood Road/SLCC to do so more quickly.

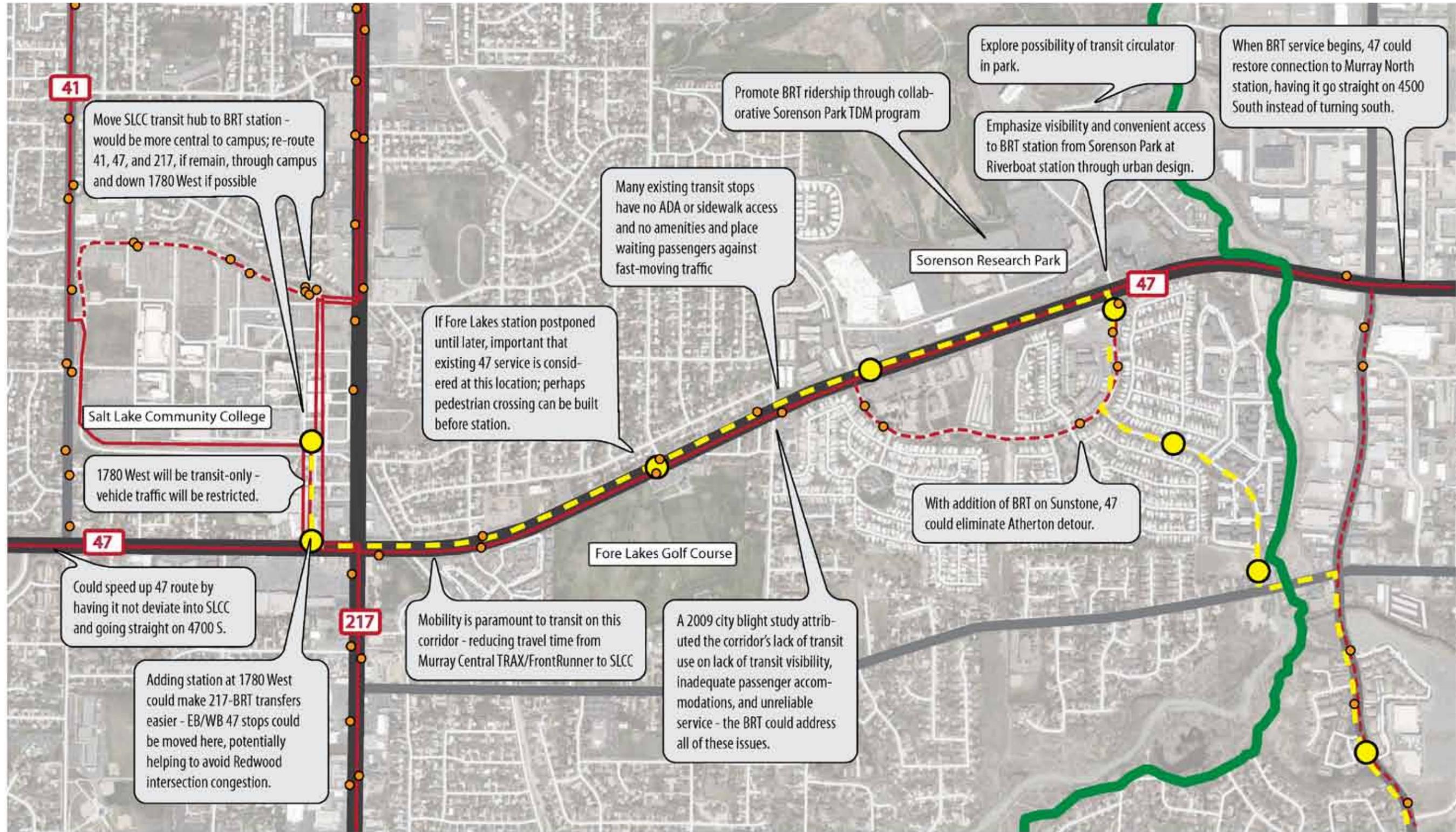
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The second theme is to **change the location of the SLCC transit hub** to the proposed location of the terminal BRT station. It is recommended that two of the three UTA bus routes coming through this area (#41 and #217) would be re-routed through this new hub (the third, the 47, would not detour into the campus; passengers transferring to BRT could do so at the proposed station at 1780 West and 4700 South. The SLCC inter-campus shuttle (B-line) would also likely come through this hub.

It is also recommended that additional research be undertaken to determine how shuttle systems throughout Sorenson Research Park and SLCC can help support BRT service. A final recommendation is that as part of the 4700 South corridor improvements, the UTA bus stops be improved to achieve the same transit visibility, access, and safety goals being sought as part of implementing BRT service. Much of the access envisioned will be accomplished by the bicycle and pedestrian recommendations presented in the following sections.

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## TRANSIT NETWORK RECOMMENDATIONS

- - - Future BRT Alignment
- Future BRT Station
- Multiuse Path
- Major Arterial
- Major Collector
- 15-minute freq. bus line
- Bus Stop
- 41 Bus Route Number

# TRANSPORTATION ANALYSIS & RECOMMENDATIONS

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## 3 - The Bicycle Network

Improving the Taylorsville Expressway corridor for transit also presents major opportunities for the enhancement of bicycle transportation. As already established, the 4700 South right-of-way is sufficiently wide to allow a fully-separated Class I bike path running from the “trunk” of the Jordan River Parkway west along Taylorsville Expressway to Salt Lake Community College and other destinations near Redwood Road. A bike facility of this type can fulfill the same “trunk-branch” function as transit service, with the removal of driveways and a limited number of street crossings also contributes to the viability of this idea (for specific Taylorsville Expressway bike facility concepts, see the Taylorsville Expressway street design section.)

While most of the Expressway segment of the BRT corridor allows for a separated bike path, the segment around Redwood Road presents a challenge for connecting Taylorsville Expressway cyclists to Salt Lake Community College and areas further to the west. In such locations, the right-of-way narrows, and demands on the intersection by vehicles and BRT create a challenge for the inclusion of adequate bike facilities through the intersection. In such areas, it is recommended that the bike route deviate from 4700 South at the Jordan Canal, following the canal to Redwood Road, where it can cross at the signalized intersection, following a clear route to the community college campus and areas beyond. The full effectiveness of this route depends on the ability of cyclists to cross 4700 South at the canal, which can be achieved utilizing some concepts presented later in this section.

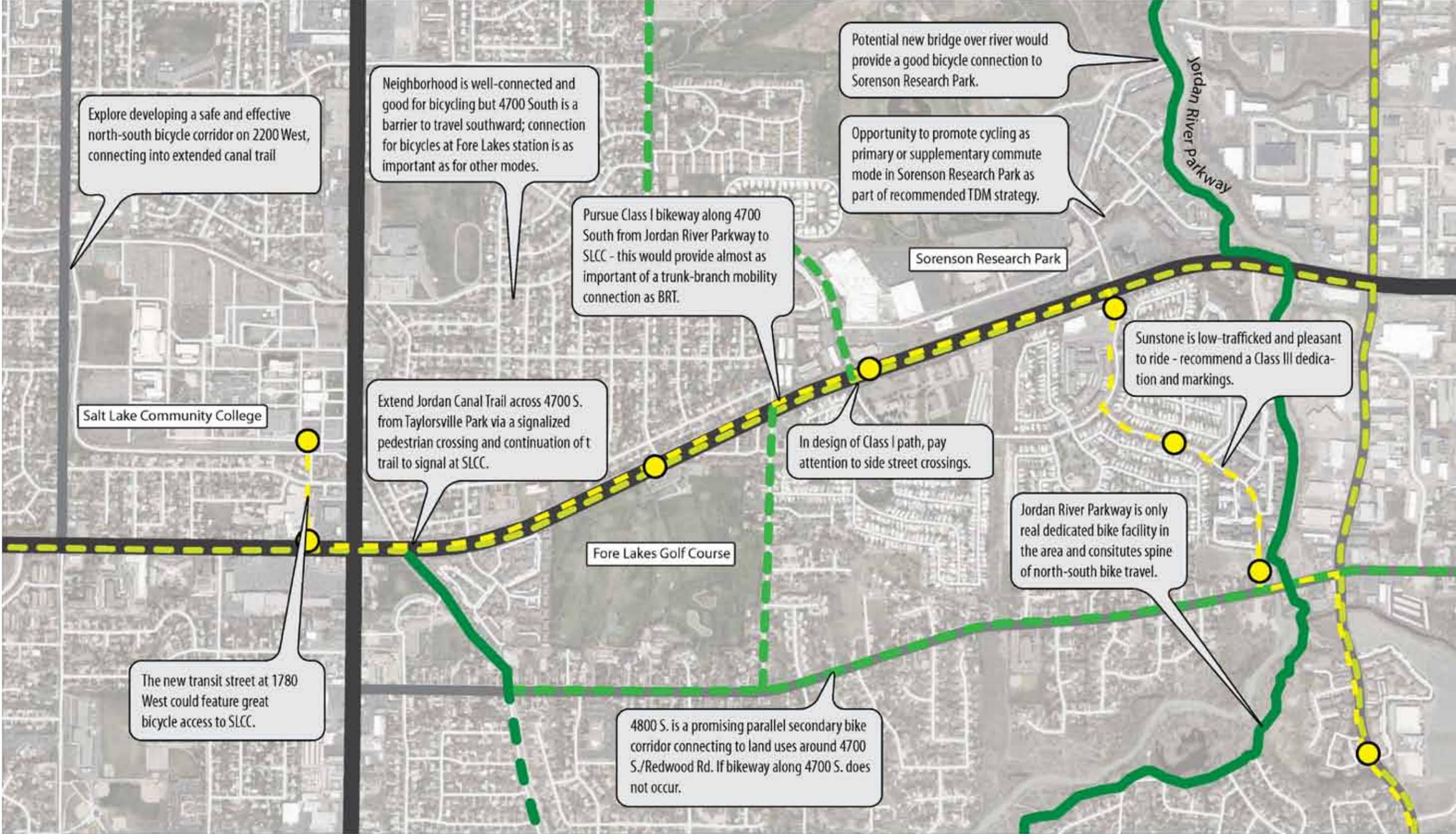
In addition to the recommendation for a bike facility along Taylorsville Expressway, it is also recommended that bike routes to BRT stations be improved, specifically implementing the bike lanes on Atherton Drive (west) and designating Sunstone Road/Atherton Drive (east) as a Class III bike route. Another key concept involves the establishment of a bike facility at approximately 2200 West, providing a direct access to the SLCC station. The final “tie in” to the general corridor network is a proposed 4800 South bike lane, which can serve as an alternative to Taylorsville Expressway, utilizing the Jordan Canal trail to access SLCC. Since this trail must also safely cross 4700 South, the development of a developed into a sub-surface at the canal is supported for this alternative as well.

Finally, bicycling can be a key part of Travel Demand Management (TDM) programs for major trip generators such as SLCC and Sorenson Research Park. Whether privately owned or as part of a bike share program, cycles can help solve the “last mile” problem for getting travelers from stations to their place of work and study.

# TAYLORSVILLE EXPRESSWAY

**B R T**

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## BIKE NETWORK RECOMMENDATIONS

- Future BRT Allignment
- Major Arterial
- Existing/planned Class I bikeway (path)
- Future BRT Station
- Major Collector
- Existing/planned Class II bikeway (dedicated lane)
- Existing/planned Class III bikeway (shared street lane)
- Multi-use path

# TRANSPORTATION ANALYSIS & RECOMMENDATIONS

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## 4 - The Pedestrian Network

Improvement of pedestrian conditions around the planned BRT line is the most fundamental and important part of supporting the planned Taylorsville Expressway transit investment. While the City should seek to improve both pedestrian connectivity and the pedestrian environment within a half-mile of planned stations, this plan prioritizes the two most likely trip generators - SLCC and Sorenson Research Park stations. In each of these areas, investments that improve of the pedestrian network will be the foundation of high ridership and future transit-oriented development.

For the SLCC area, the establishment of a pedestrian-oriented roadway parallel to Redwood Road is proposed. This axial roadway will run from the heart of the SLCC campus and the proposed terminal BRT station south along a transit and pedestrian-oriented new street on 1780 West, which will be redeveloped with a mix of student housing, student-oriented retail, SLCC activities, and cultural uses. The pedestrian axis should also cross Redwood Road southward toward the Taylorsville Town Center, shopping center, although additional study will be required to determine the practicality of this concept. The result of these enhancements will be a pedestrian and transit-oriented corridor that joins SLCC with the surrounding community, utilizing a mix of complementary uses that are currently missing from the SLCC campus and the establishment of high quality public spaces and amenities (Details for these concepts are provided later in this plan.)

In comparison to the SLCC area, Sorenson Research Park should be transformed at the Taylorsville Expressway-Riverboat intersection into a pedestrian “front door” for the business park. The planned station for this intersection will be one of the centerpieces of this transformation, and will make crossing the Expressway on foot or by bicycle safer and less daunting. The large parking lots that line the frontage of the research park are envisioned to be filled in with small buildings, creating a more cohesive pattern of development better use of available land, and an improved mix of complementary land uses to the office park. Together, these enhancements will help provide a more human scale to the intersection, which will be further enhanced through the development of a small plaza where BRT riders can filter onto the site, and food trucks, coffee carts and other temporal events can help liven the area (additional details for these ideas are provided later in the plan.)

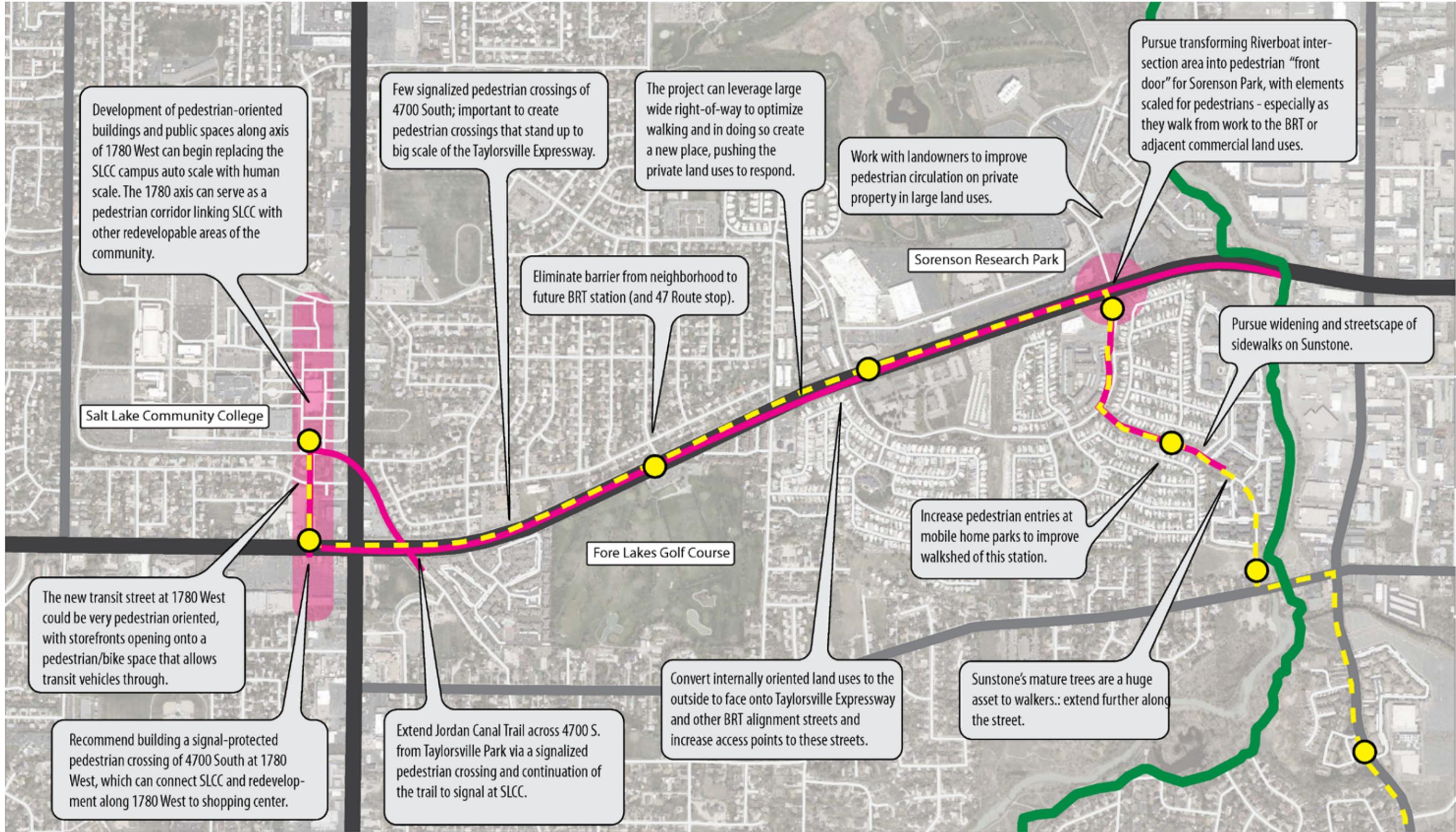
Similar to the treatment envisioned for bicycles, the BRT project presents an opportunity to create a separated pedestrian facility along Taylorsville Expressway. This could be a multi-use path shared with cyclists, or a stand-alone pedestrian path. Depending on the pattern of land uses and development that takes place, the pedestrian realm can interface with the adjacent properties in a multitude of engaging ways, helping to enliven the “front door” of new development and form a more pedestrian-friendly place in the process. A few of the potential improvements that are possible are options are detailed in the concept drawings located later in the plan.

Finally, it is important that the City consider small changes that will open up existing and future neighborhoods to easy walking to future BRT stations. One key example is near the future Fore Lakes Station, where access to Taylorsville Expressway is currently blocked from the neighborhood to the north at 1300 West, which is the most direct access point to the future BRT station (and current UTA bus stop). Opening this access point to pedestrians in a visible, attractive, safe way would drastically improve access to the BRT service (see details later in this plan that illustrate creative ideas for making this a reality).

# TAYLORSVILLE EXPRESSWAY

**B R T**

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## PEDESTRIAN NETWORK RECOMMENDATIONS

- Future BRT Alignment
- Future BRT Station
- Major Arterial
- Major Collector
- Pedestrian focus area
- Recommended pedestrian improvement
- Multi-use path

# TRANSPORTATION ANALYSIS & RECOMMENDATIONS

1

## Bus Rapid Transit Line Recommendations

The Environmental Study Report (ESR) identified several aspects of a preferred alternative for the Taylorsville-Murray BRT line, including alignment, station locations, operational features, and the way the transit will run within the street. In this section, we recommend additional features and refinements to the ESR's recommendations that will achieve the City's goals in addition to UTA's and other agencies goals for the service. This is important in part because, while BRT is less expensive than rail projects and can be scaled up or down depending on the budget or needs of the project, the ability to add or subtract components is also a disadvantage because the components can be "value engineered" as the project moves from planning to engineering to construction.

2

The following recommendations are meant to establish the City's priorities as BRT features are being designed and refined. While UTA's priority, as expressed in the ESR, is speed and reliability, Taylorsville's interest in the BRT project includes the desire for great community design, creative place-making, redevelopment and improving active transportation options. In order to balance these divergent goals, the following refinements should be added to the recommendations contained in the ESR.

3

### ESR Preferred Alternative Refinements

- **Additional station at 1780 West and 4700 South pending land use and street changes**  
Explore the possibility of locating a BRT station on 1780 West, west of Redwood Road. The provision of an additional station at this location depends on both the creation of 1780 West as a transit/pedestrian street connecting SLCC with Redwood Road and the redevelopment of properties along 1780 West into pedestrian-oriented uses that complement SLCC uses. Envisioned examples include student housing, class space and retail. If these changes occur, a station serving the new development would be warranted. The station would also greatly benefit from a direct pedestrian crossing of 4700 South which requires additional study.
- **Locate Atherton East Station to the 4700 South median on the west side of intersection**  
The ESR preferred alternative places a station on Atherton Drive south of Taylorsville Expressway and Riverboat Road. While this location simplifies the integration of a station into the Atherton/Riverboat-Taylorsville Expressway intersection, it does not serve Sorenson Research Park as well as it could in the middle of Taylorsville Expressway. Placing the station in the median of 4700 South would make the station more convenient for many Sorenson employees while making it easier to cross this busy street.
- **Termination of the BRT line at SLCC**  
It is still unclear how the BRT vehicles will commence a return to Murray Central Station from the SLCC station. The ESR recommends that the BRT vehicles return to 4700 South via Redwood Road. However, with our recommendation to add the station at 1780 West/4700 South, returning to 4700 South via 1780 West could also be advantageous. It remains to be seen whether the pedestrian signal that is recommended here could also accommodate left-turning BRT vehicles, although additional study should be undertaken to help determine the possibility.
- **Transition of BRT vehicles from center lanes to position to turn right at 1780 West**  
The ESR recommends a queue jump at the Redwood Road intersection for westbound BRT vehicles to allow BRT vehicles to advance ahead of traffic and make the transition out of the dedicated center

lanes into mainstream traffic lanes and into a position to make a right turn onto 1780 West. The queue jump will also allow BRT vehicles to bypass congestion at that busy intersection. Alternative intersection treatments are proposed, including modified Continuous Flow Intersection and a Hawk Beacon pedestrian signal, which likely complicate this queue jump concept. It is recommended that exploration continues, so BRT vehicles can make the transition out of the center lanes and bypass congestion while still allowing for pedestrian crossing at 1780 West and the Jordan Canal.

### Additional City Priorities

- **Pedestrian crossings at 1780 West and the Jordan Canal**  
A key part of the transportation/land use/urban design concept is the ability for pedestrians to cross 4700 South at 1780 West and at the Jordan Canal, linking SLCC with the Taylorsville Town Center development, and fortifying the proposed pedestrian axis along 1780 West. These pedestrian crossings will be a challenge to implement because they are so close to the Redwood Road signal, although preliminary investigation revealed some potential solutions.
- **City priorities on station design**  
The BRT stations are a crucial aspect of accomplishing the City's BRT-related goals. They are the places where Taylorsville can most effectively achieve its community identity, placemaking/urban design, and pedestrian/bike goals. We recommend the stations have the following key components:
  - » Community identifiers/branding
  - » Distinctive shelters
  - » Highly visible crosswalks to stations
  - » Pedestrian refuge at center stations
  - » Street furniture such as seating
  - » Pedestrian-scale lighting
  - » Real-time bus information
  - » Landscaping

Many of these aspects are rendered in the station concepts in the accompanying section.

The following diagram summarizes our recommended additions, refinements, and considerations for the BRT line.

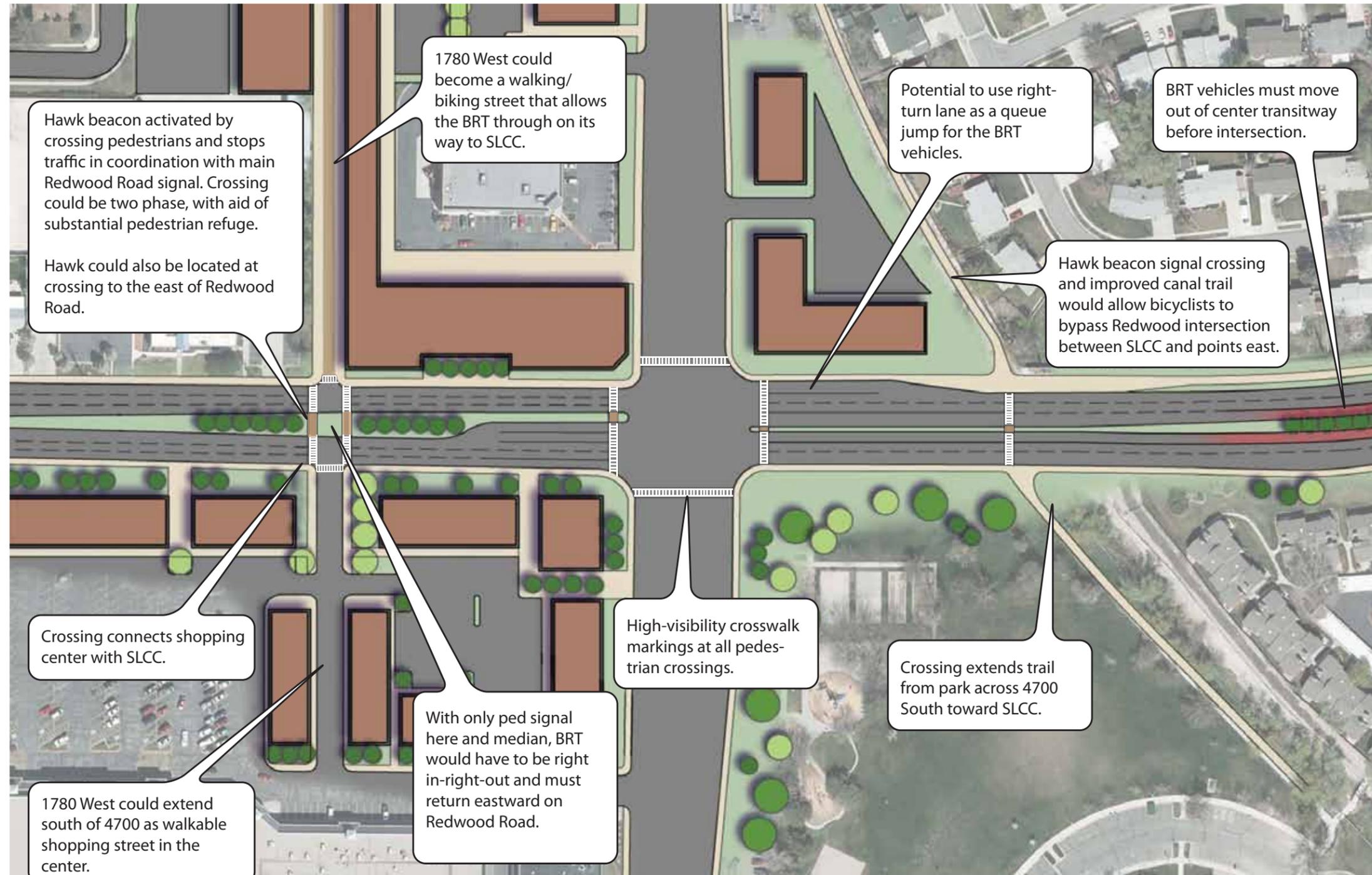


## PLANNED BRT LINE ANALYSIS & RECOMMENDATIONS

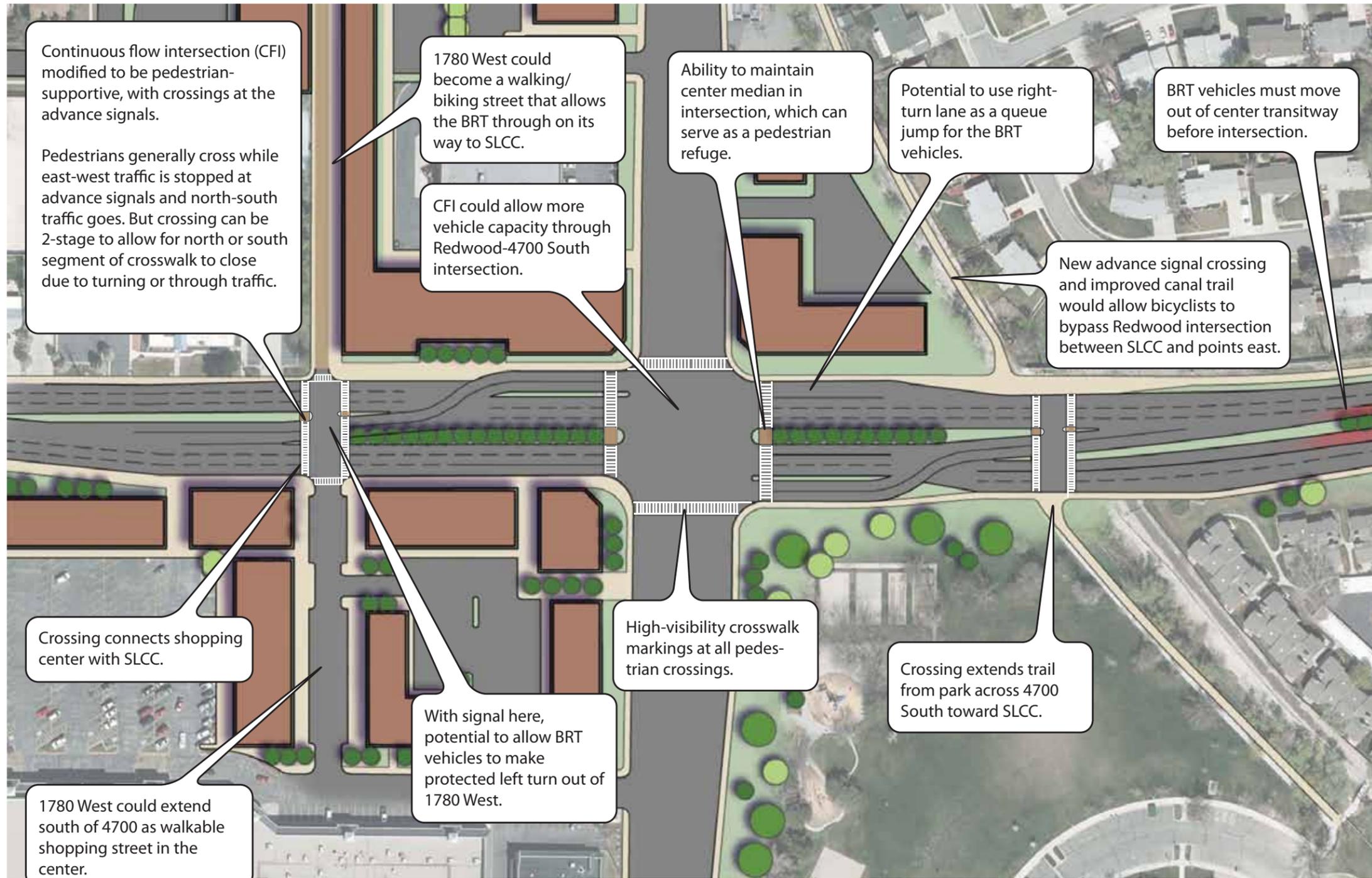
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## ALTERNATIVE INTERSECTION TREATMENTS: 4700 SOUTH & REDWOOD ROAD

### Hawk Beacon Crosswalks



## Continuous Flow Intersection



# TRANSPORTATION ANALYSIS & RECOMMENDATIONS

1

## Taylorsville Expressway Street Design

The Taylorsville-Murray BRT ESR recommends a center-running transitway for the segment on Taylorsville Expressway between Riverboat Road and Redwood Road. The addition of this transitway means that the street must be reconfigured. This reconfiguration opens up possibilities for improving the Expressway in additional ways.

2

While it is recognized that Taylorsville Expressway is a state-controlled facility, Taylorsville City should continue to work with UDOT to explore the concepts and considerations which follow.

3

### Design Considerations

- **Transitway**  
The addition of a dedicated bus lane in each direction in addition to stations in the center of the roadway is the most fundamental design concept to be implemented.
- **Present and future vehicle needs**  
Maintaining the status quo of traffic flow while improving safety with access management improvements and creative solutions at intersections were considered. It was also acknowledged that the new roadway design would need to conform to UDOT standards for lane widths and access management. The cross section of the street was also considered, and how it could remain flexible for the addition of an additional travel lane in each direction.
- **Pedestrian and bicycle facilities**  
The need for robust pedestrian and bike facilities along Taylorsville Expressway is documented in the preceding Networks section. The land use pattern indicates the primary need for bicyclists and pedestrians along this street is a through-route. One major variable was whether to include a mixed path for pedestrians and cyclists or to utilize separate paths.
- **Variable right-of-way**  
One of the major factors in the development of concepts was the variable right-of-way along Taylorsville Expressway. While the right of way varies from 105 feet in the west end of the corridor to 245 feet on the east end. Generally, there is a high amount of space to work with for incorporating transit, bicycle, and pedestrian improvements.
- **Adjacent property interface**  
The design of the Expressway must take into account how adjacent land uses relate to it. Currently, most land uses “back” onto the Expressway. In the future it is envisioned that redevelopment may “front” onto the Expressway, which creates opportunities for the pedestrian realm as well as vehicle access management and conflicts with bicyclists.
- **Corridor character**  
Finally, the new Expressway design will have great influence on the character of the corridor. Different alternatives could be implemented that either preserve the suburban character, create a more park-like character, or provide a more walkable urban character. These options could be implemented in different configurations depending on the character and unique opportunities of the different segments.

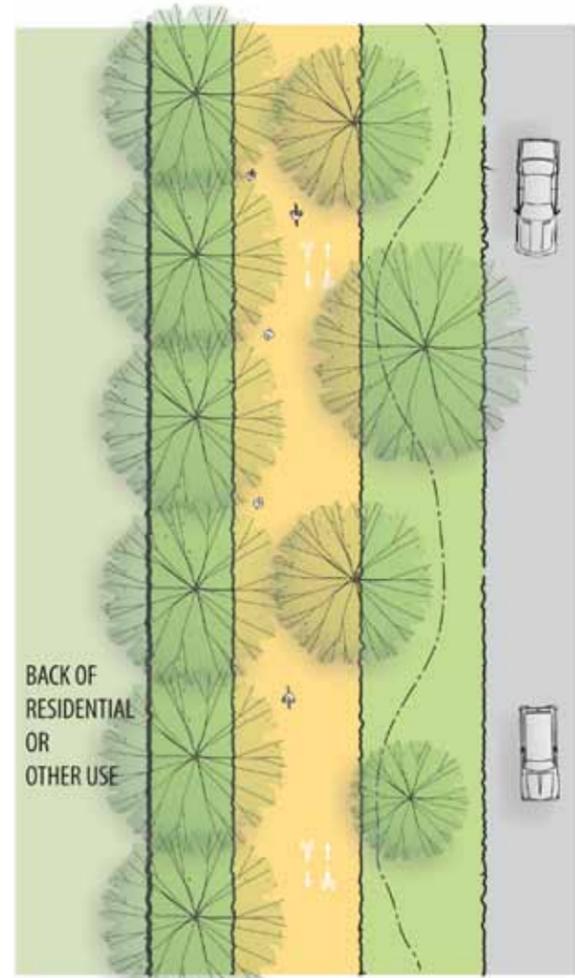
## Taylorsville Expressway Concepts

The placement of the transitway within the Taylorsville Expressway appears to be relatively straightforward. The two BRT lanes would be approximately 26 feet wide, and placed between the four travel lanes, which would “bow out” to accommodate the stations, similar to a light rail center transitway configuration.

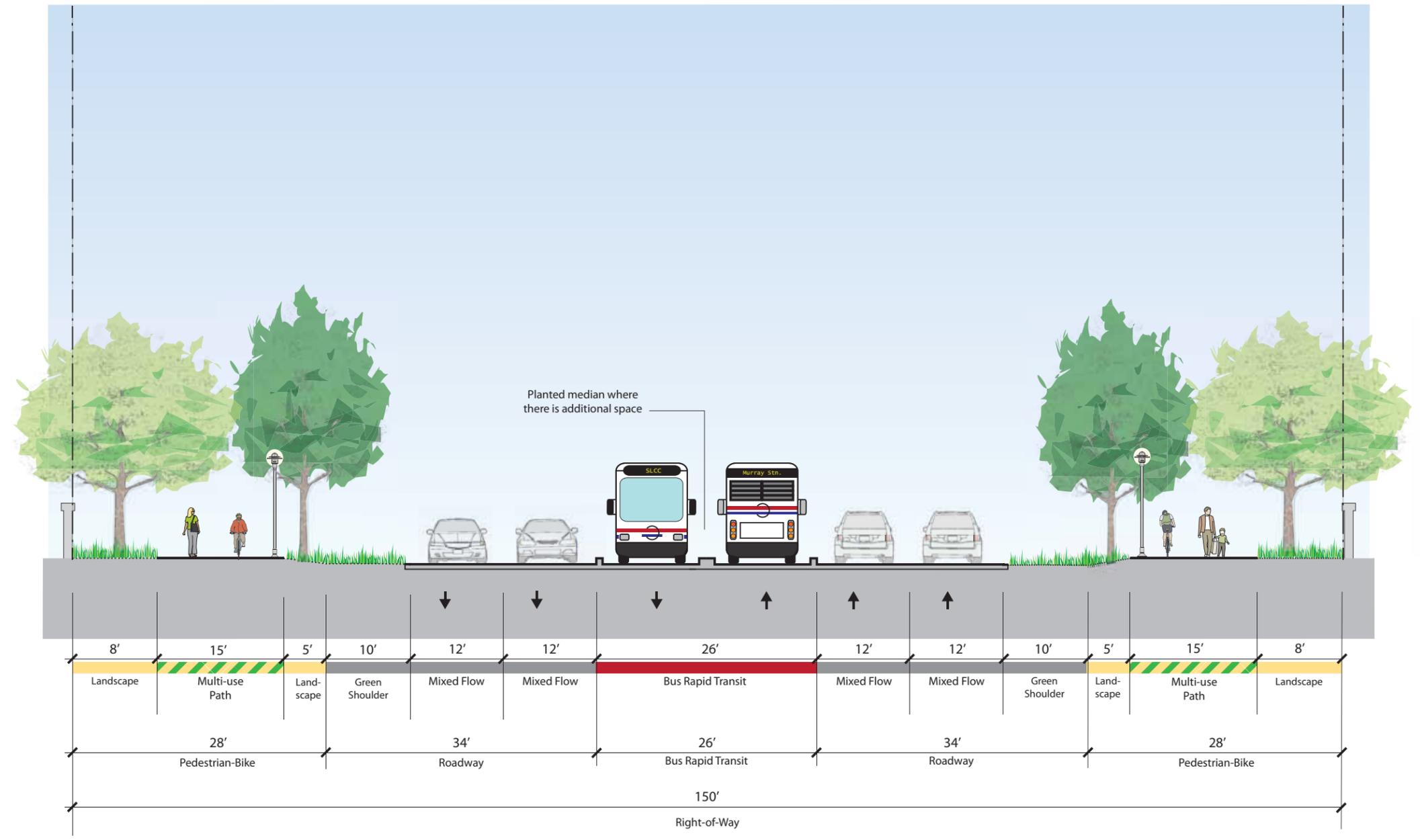
The alternatives hinge on how the pedestrian and bicycle facilities are integrated into the street design, and also how Taylorsville Expressway interfaces with adjacent land uses. A 150-foot right-of-way was used as a baseline for the right-of-way width, assuming that the stretch of Taylorsville Expressway near Redwood Road would receive a different treatment, and, as the right-of-way increased, the variable elements of the cross section – especially the buffers between pedestrians, cyclists and moving traffic, as well as a planted median, would increase.

### Preferred Alternative

The preferred concept for Taylorsville Expressway is to combine Alternatives 1 (multi-use path) and 2 (sidewalk and bike path), as they make particular sense within the given right-of-way and with adjacent existing and future land uses. The following section illustrates how these ideas might be combined.



PLAN VIEW



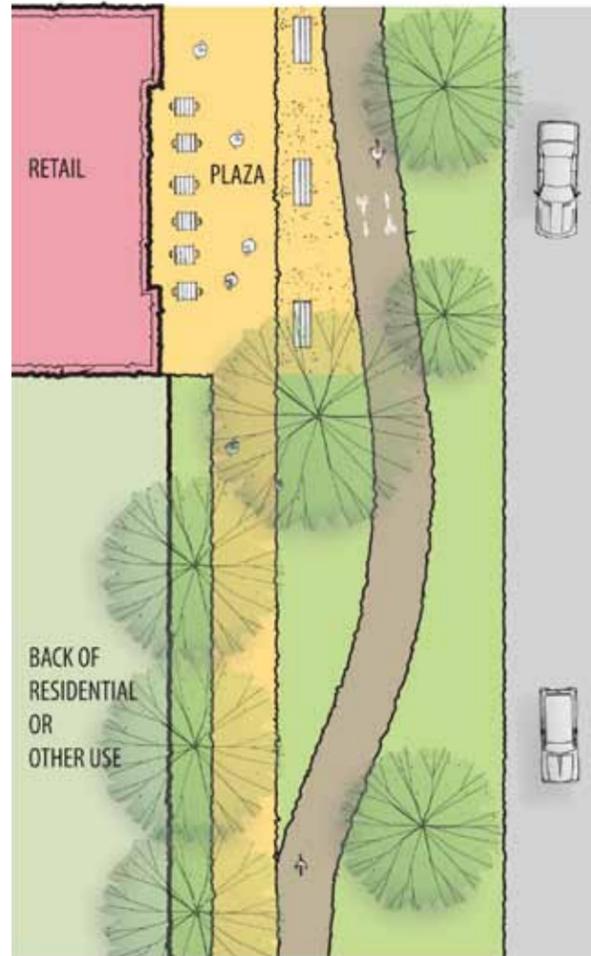
SECTION

## Alternative 1: MULTI-USE PATH

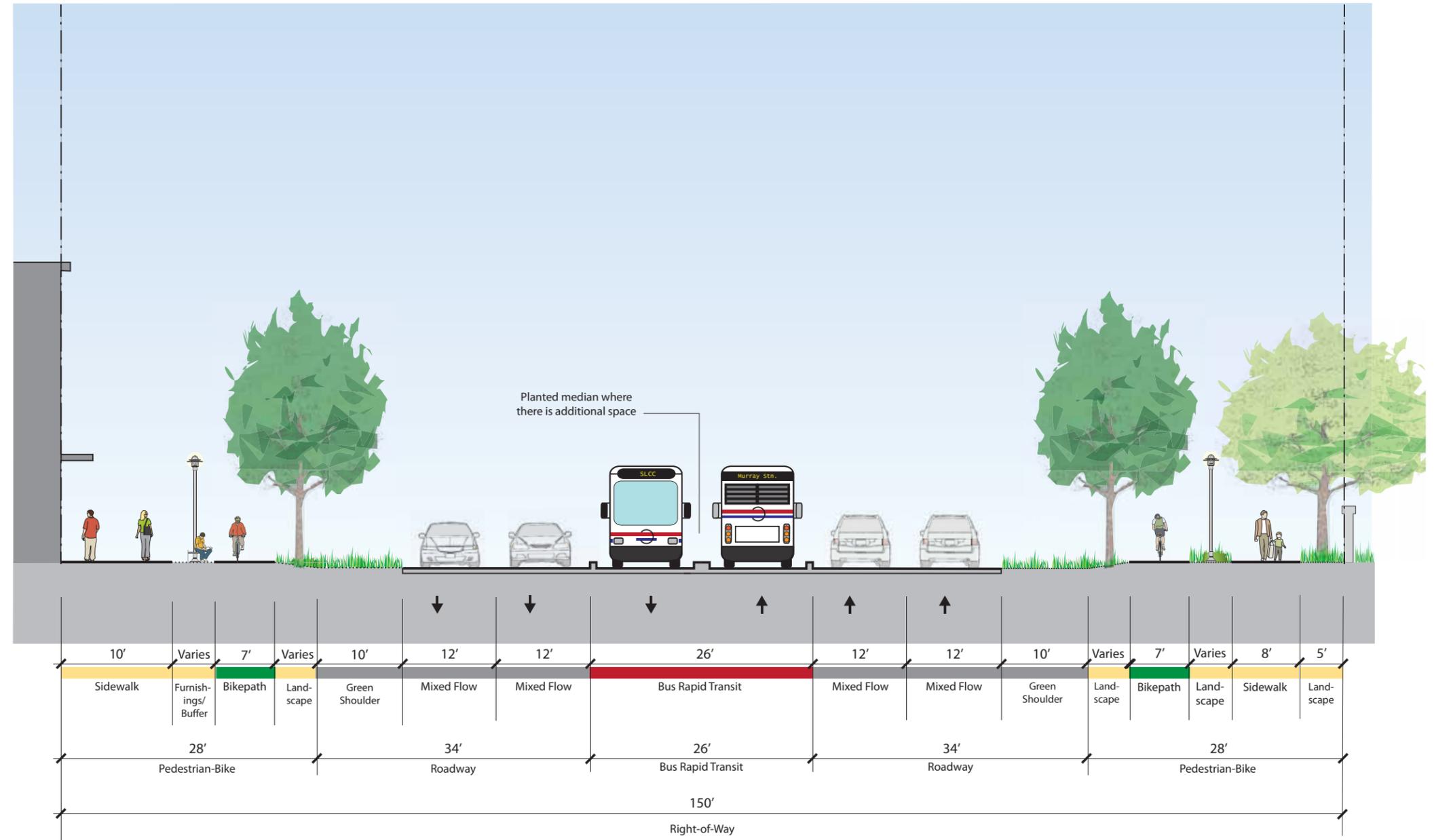
Alternative 1 combines pedestrians and cyclists into a multi-use path that will be “in its own world” – a greenway planted with trees on both sides. A substantial buffer would lie between the multi-use path and moving traffic. In general, this concept works best with land uses backing onto the Expressway. This concept proposes a “green” shoulder at the side of the road – a 10-foot strip that is both reinforced for heavy traffic to pull off, but also planted.

# TRANSPORTATION ANALYSIS & RECOMMENDATIONS

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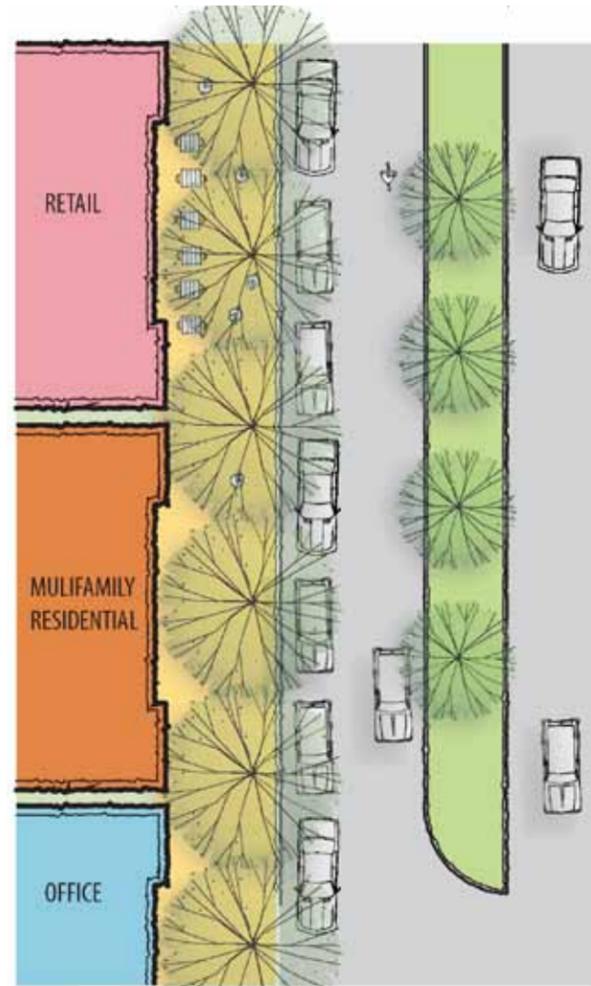
PLAN VIEW



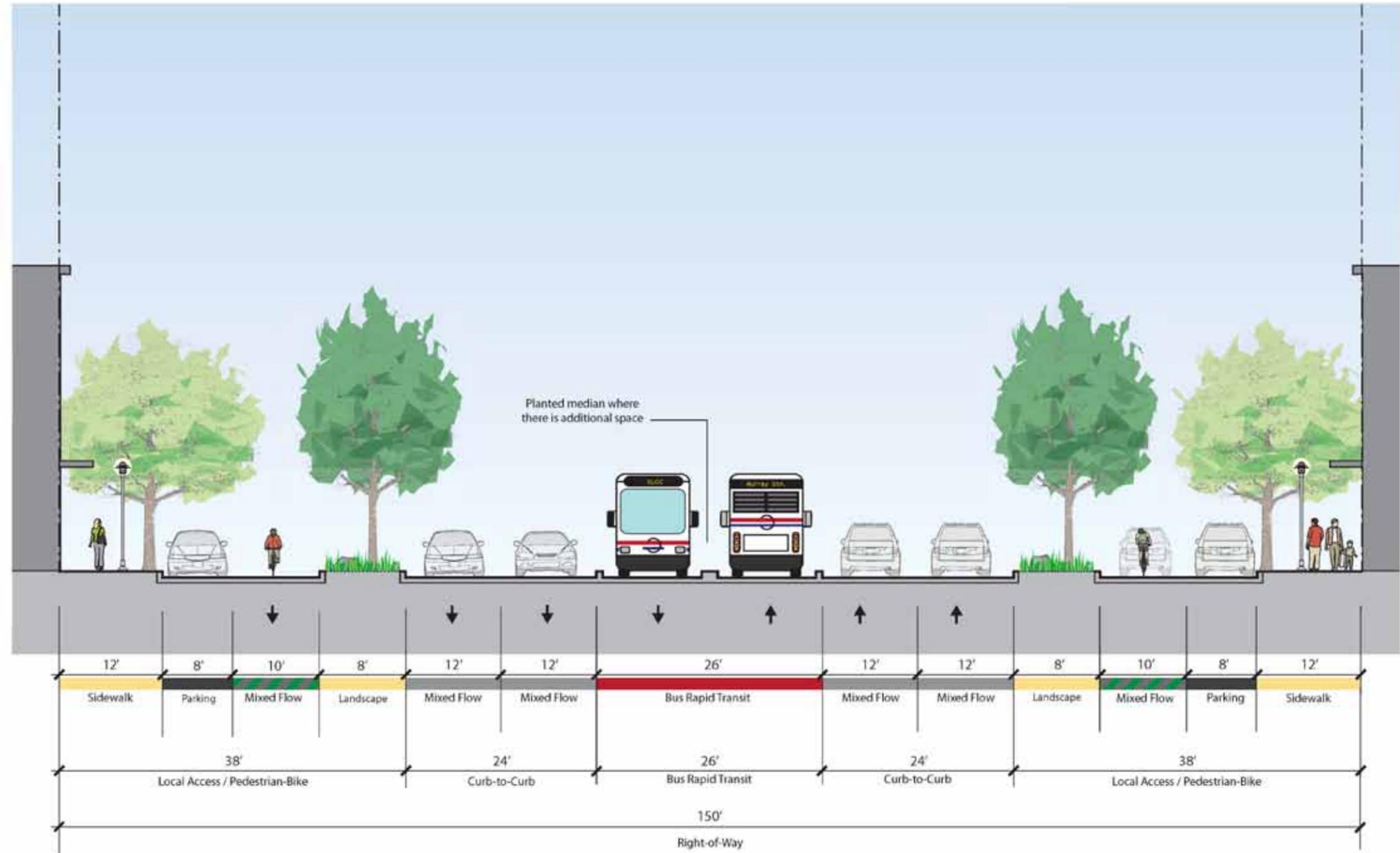
SECTION

## Alternative 2: SIDEWALK AND BIKE PATH

Alternative 2 separates the pedestrians and cyclists into a sidewalk and a bike path respectively, but varies the design of each, and the position of the bike path within the cross section. The result is the creation of possibilities for curved planted areas and plazas. This concept, especially, capitalizes on the variability of the right of way, and includes the flexibility for the pedestrian realm to interface with adjacent land uses and to stay separate as in Alternative 1. This concept also proposes a “green” shoulder at the side of the road – a 10-foot strip that is both reinforced for heavy traffic to pull off, but also planted.



PLAN VIEW



SECTION

## Alternative 3: **LOCAL ACCESS LANE**

Alternative 3 includes a third “local access” lane in one or both directions, which would accommodate local traffic and on-street parking. This option assumes a high degree of interaction between adjacent properties and the street, which would mean a high degree of redevelopment. Ultimately this concept was not carried forward.

# URBAN DESIGN ANALYSIS, PRINCIPLES & RECOMMENDATIONS

1

In order for the Taylorsville Expressway to become a model for future transit investments along the Wasatch Front and beyond, emphasis should be placed on the comprehensive design of the corridor, and in particular the stations and areas that surround them. This approach will not only create a strong image and help establish a brand for the expressway, but can spur transit-oriented development investment dollars around the stations and beyond.

2

A pedestrian-friendly approach lies at the core of this approach, encouraging walking and biking in conjunction with BRT and vehicular travel as part of a “complete corridor” concept. Other principles that are supported include:

3

- encouragement of mixed-density/mixed use development throughout the corridor;
- modeling economic development around transit;
- transforming the community as a whole by extending the reach of pedestrian and transit friendly transformations; and
- ensuring that transit improvements work in harmony with vehicular and other transportation needs.

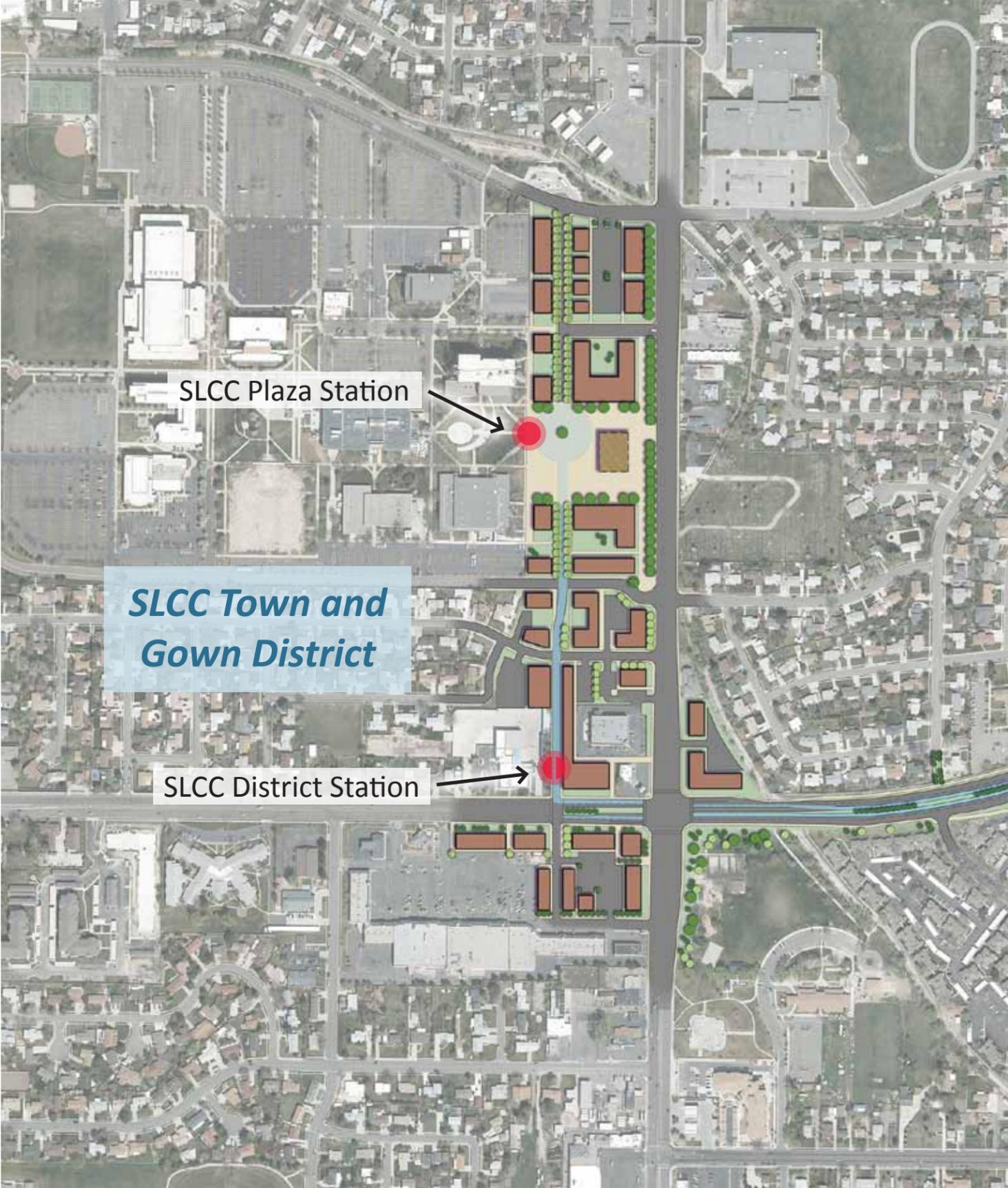
This unified design approach not only distinguishes the expressway from other roadways in the region, it also allows the unique qualities of nearby neighborhoods and destinations along the route to be expressed. In order for this transformation to be achieved, it is essential that high quality materials, a system of unified furnishings and streetscape treatments, and a coordinated design approach be implemented. Holistic architectural treatments and the broad distribution of public art are also suggested, which will help unify the built environment while introducing a sense of surprise and mystery, and even acknowledging the special heritage of the area lining the BRT route.

## TAYLORSVILLE EXPRESSWAY - URBAN DESIGN STRUCTURE PLAN

As illustrated in the accompanying Urban Design Structure Plan, a coordinated design treatment is envisioned along the length of the route, from the east city limit to the end station on the Salt Lake Community College campus. The intent is to create a seamless and unified BRT experience east to west, with slight variations at each station that salute the unique qualities of the adjacent neighborhoods and districts.

The Structure Plan also addresses opportunities along the route, including variations that respond to the changing conditions and corridor widths. The result is a unified and systematic corridor treatment, where surrounding land uses are incorporated within a framework of change. This approach supports the transformation of Redwood Road into a Transit-Oriented Development Place, for example, converting the under-realized eastern edge of Salt Lake Community College into a “Town & Gown” district with two BRT stations, student housing and a mix of commercial and campus uses.

-  Destination Station
-  Center Station
-  Side Station
-  Future Center Station





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# URBAN DESIGN ANALYSIS, PRINCIPLES & RECOMMENDATIONS

1

## STATION LOCATION AND DESIGN

The following is a description of each station and the surrounding environs, from east to west.

2

### Arrowhead Park Station & Sunstone Station

The Taylorsville Expressway begins near 4800 South and the Jordan River, where Arrowhead Park Station and Sunstone Stations are sited. These side stations are relatively simple and small, providing a place to sit and wait for BRT buses beneath a protective canopy structure that is aligned in form and appearance with the larger center stations located elsewhere along the route. Since there is little space to expand the right-of-way along Sunstone Road where the stations are proposed, the stations have been designed to fit within the existing sidewalk zone, preserving the attractive, tree-lined streetscape which currently exists.

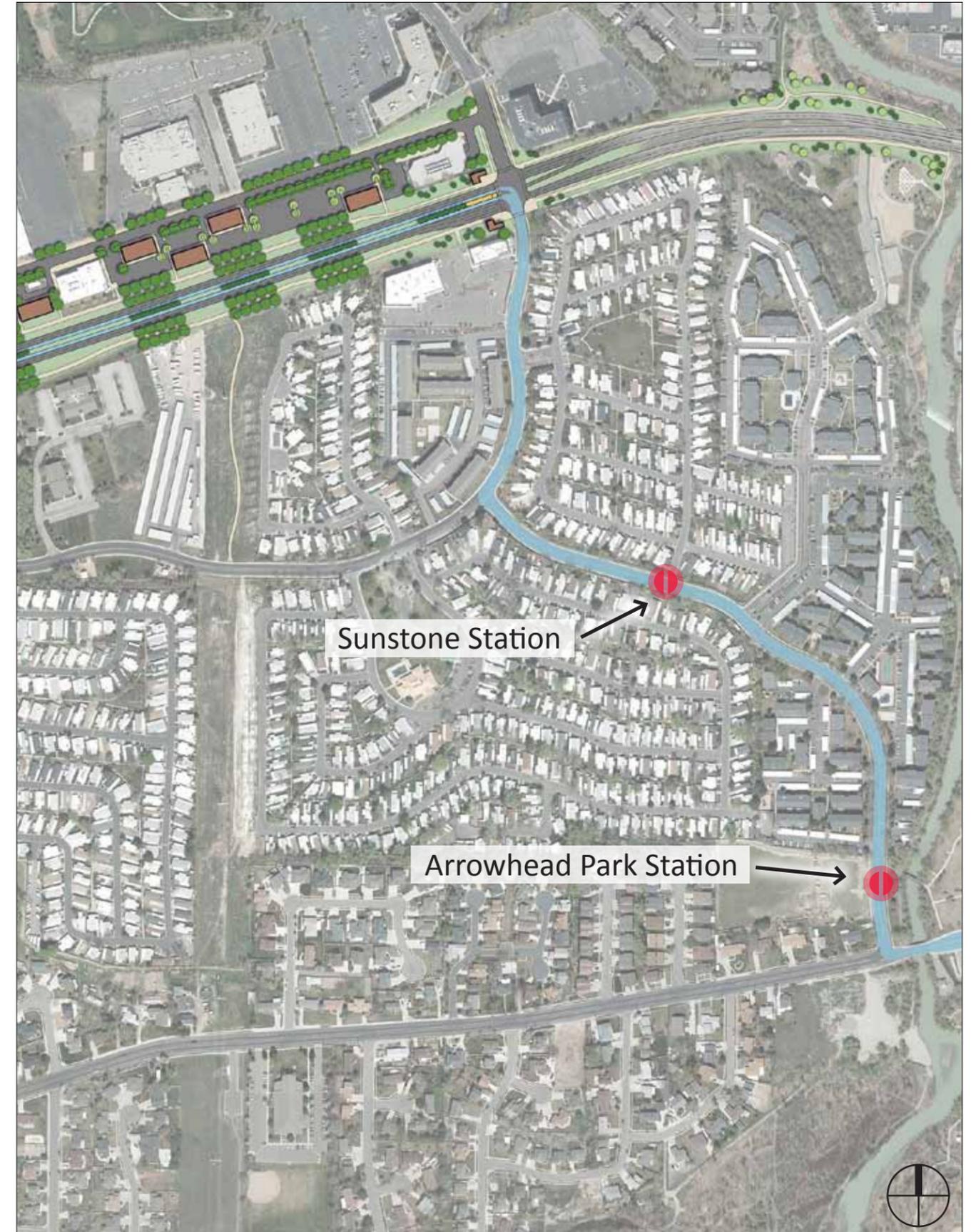
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The site is surrounded by multi-family and manufactured home neighborhoods, providing the required density desired for the area. Redevelopment and densification of key sites in this area is possible, although any such change would require careful study in order to be successful.

It should be noted that while Arrowhead Park station was not included in the Environmental Study Report, an additional station is suggested at this location to strengthen the link with the adjacent park and nearby Jordan River Parkway, as well as to strengthen the gateway experience of travelers entering Taylorsville from the Jordan River Parkway, 4800 South and Murray from the east and south.

The following diagrams illustrate two possible configurations for the side stations, each of which incorporate a consistent shelter design that is coordinated with the center stations and streetscape design proposed for 4700 South and Salt Lake Community College. Since the east side of Arrowhead Park Station will be nestled within a park setting, the station structure is proposed to include a planted backdrop in order to help it blend in with the park surroundings. Each of the three other stations (the west side of Arrowhead Park Station and both sides of Sunstone Road at Sunstone Station) are located in areas dominated by high walls and fences along the adjacent property boundaries, calling for a uniform stone backdrop to help link the shelter with the strict rear edge. Both alternatives assume the use of special paving, further demarcating the stations from the adjoining streetscape and possibly helping to link the stations on both sides of the street as part of a coordinated pedestrian crossing treatment.

Each of the stations includes a unified system of furnishings, signage, lighting, landscape and public art treatments, as detailed later in the plan.



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*Side Station with Landscape Backdrop (Open Space or Park Setting)*



*Approximate location of Arrowhead Park side station, incorporating a Landscape Backdrop treatment*



*Side Station with Stone Wall Backdrop (Adjacent to Fenced Property)*



*Approximate location of Sunstone side station, utilizing a Stone Wall Backdrop treatment*

# URBAN DESIGN ANALYSIS, PRINCIPLES & RECOMMENDATIONS

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## STATION DESIGN PROCESS

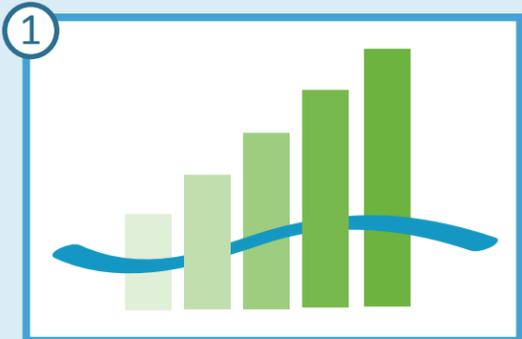
The distinct station designs proposed in this plan reference a recent design study that established a unified wayfinding and gateway signage system for the city. The look and design of the stations incorporate key ideas, themes and motifs from that study, as follows:

- **The Sense of Permanence and Elegance** - through the use of simple, locally-common building materials such as stone and metal
- **A Classic Look and Appearance** - as established through the use of sturdy stone walls, high-quality metal roofs, and classic fonts, icons and imagery
- **Acknowledgement of the Importance of the Jordan River and Canal Systems** - as represented by the sinuous lines that soften the hard stonework, the stylized “swoop” of the roof, and the wedge-shaped walls that recall classic bridge ramparts

These ideas were modified to establish the unique stone walls and backdrops, the sinuous shelter roofs, and the understated stone seats and ticketing kiosks. The fonts and iconography proposed in the signage master plan should be incorporated at the stations, adjacent plaza and elsewhere throughout the corridor, creating a special expressway “look” that is unified with other key gateways and places in the city.



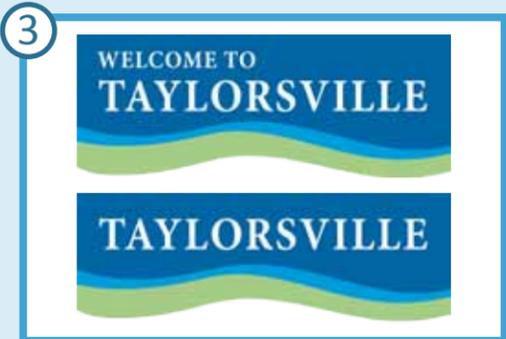
Concept: City shaped by water - Jordan River and Canal System



Initial Icon Design



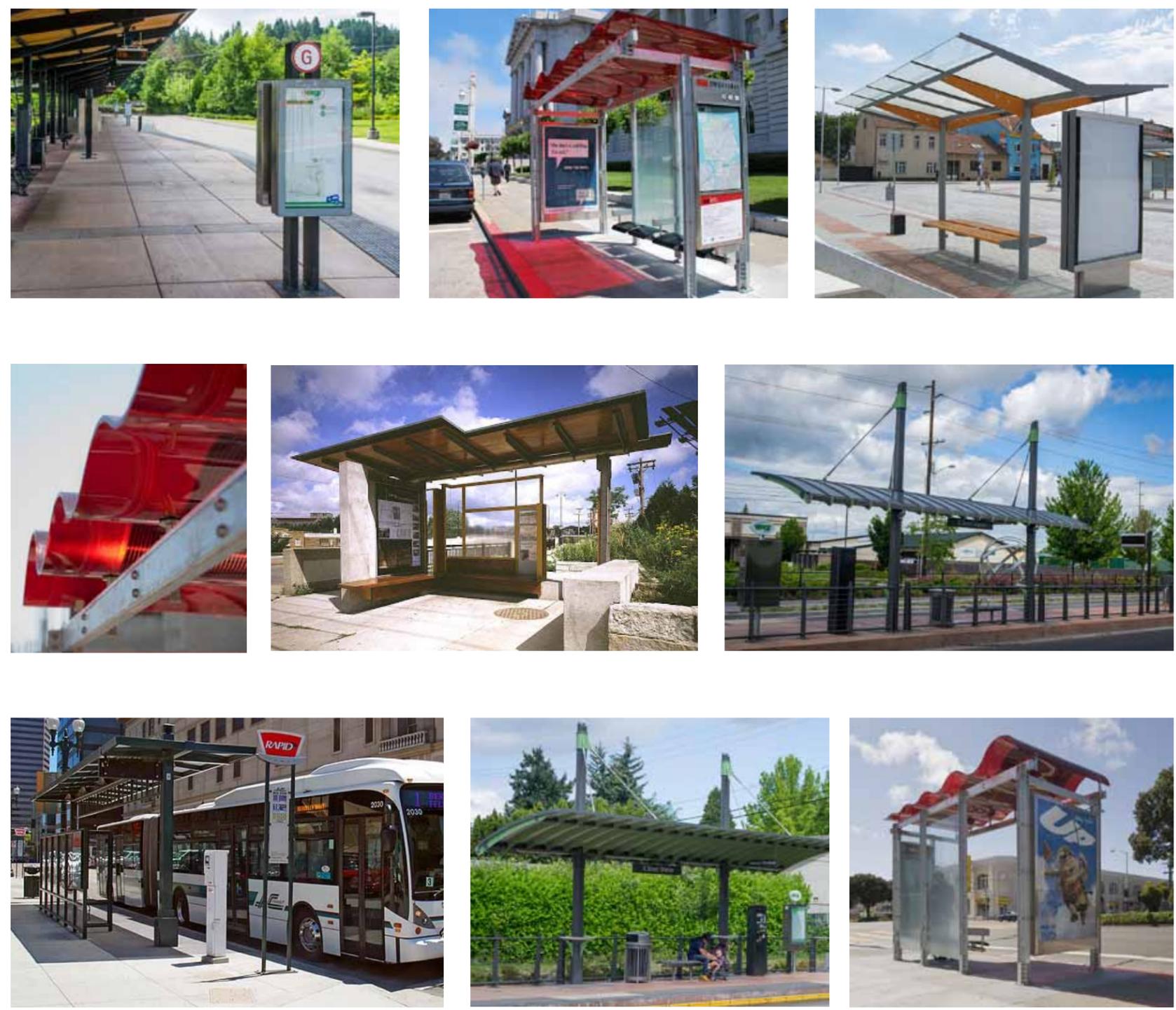
Sign Development



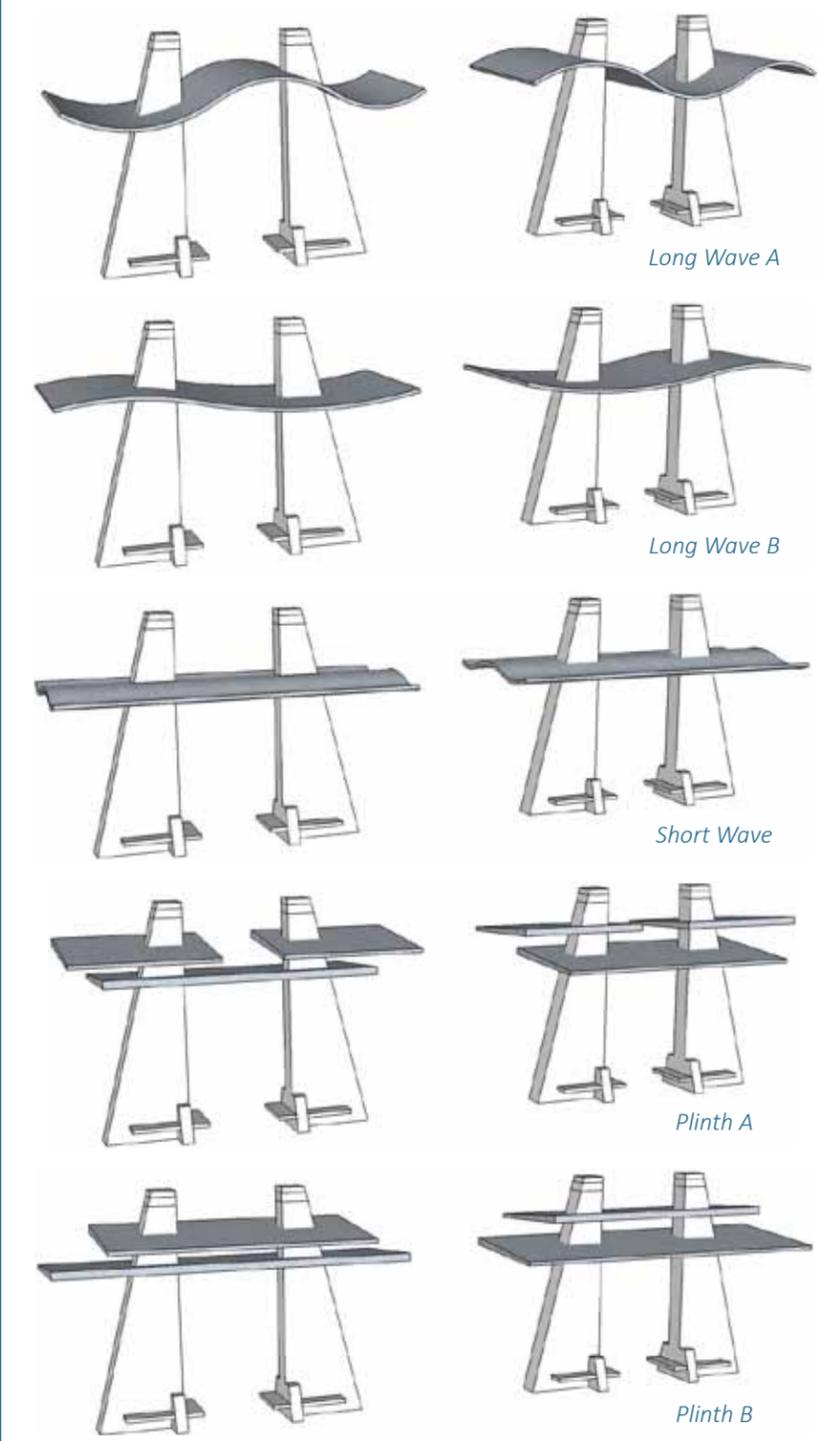
Final Sign Design



## BRT Station Inspiration



## Station Shelter Options



# URBAN DESIGN ANALYSIS, PRINCIPLES & RECOMMENDATIONS

1

## Riverboat Station

This is one of three center stations located within the 4700 South right-of-way. Located near the east city limit, it is perhaps the most important station for establishing the special look and feel of the expressway. It also is an important gateway, helping indicate to west-bound travelers that they are entering a special district. Finally, this station serves Sorensen Research Park, which is located immediately to the north along Riverboat Road.

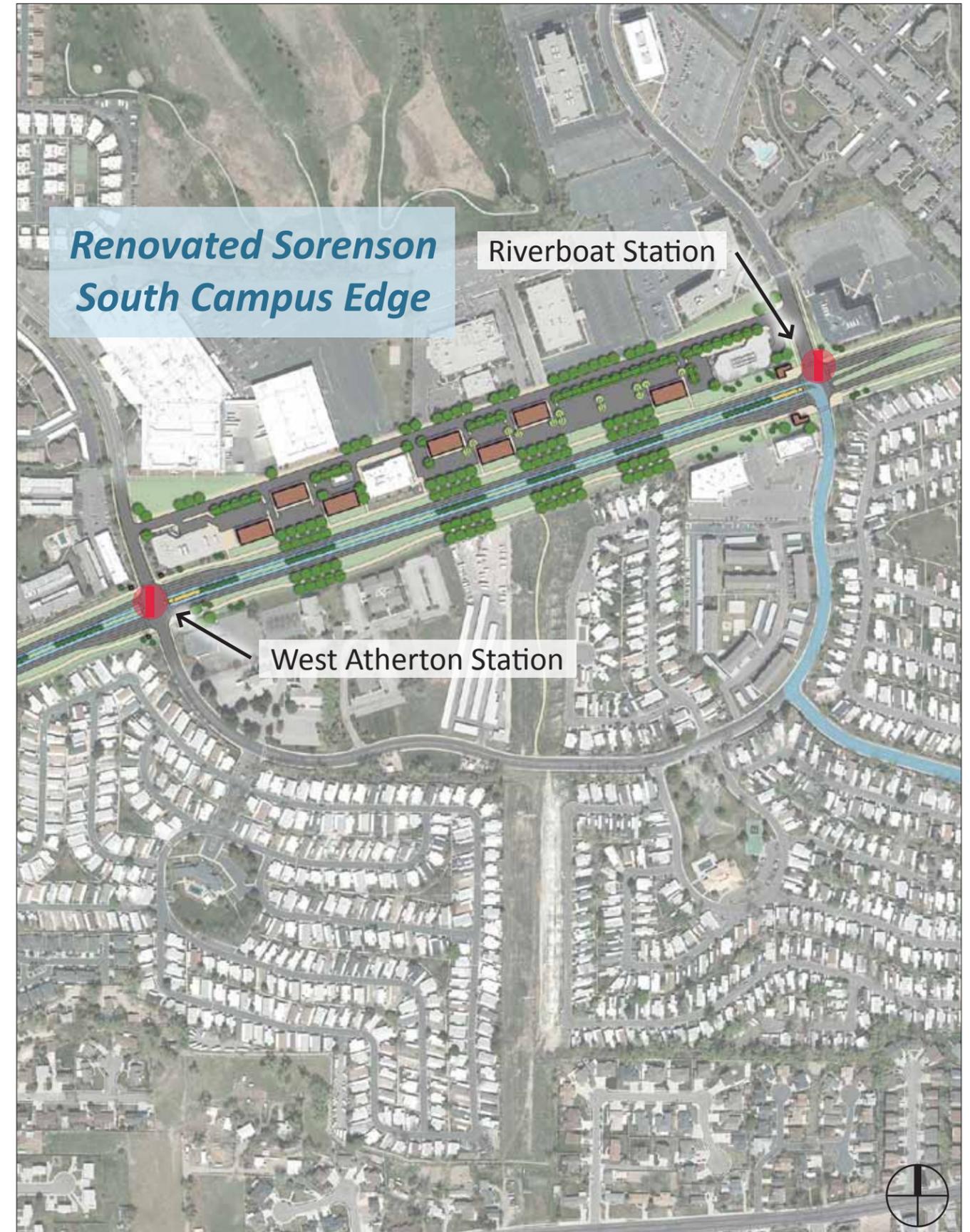
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The station builds upon the unified design concept established for the corridor. This includes the use of stone walls, curvilinear metal shelter roofs, a unified system of seating and furnishings, and high quality paving and landscape treatments. As the hallmark eastern station of the expressway, special gateway and landmark features have been incorporated into the overall design, such as the inclusion of a sculptural lighting beacon near the eastern edge of the station and four stone “follies” at each of the four corners. The follies might serve as shelters or house small cafes, helping to densify and enliven the area. It is also envisioned that pedestrian-friendly pavilion buildings will be developed within the existing research park parking lots, providing places for restaurants, stores and other pedestrian-friendly uses to set up shop. Together, these changes are anticipated to enliven the expressway while creating a special look, “vibe”, and front entrance for the area.

## West Atherton Station

This is the middle 4700 South station, located at the intersection with West Atherton Drive. The station serves the western portion of Sorensen Research Park as well as the adjacent residential neighborhoods on both sides of the expressway. Similar to Riverboat Station, West Atherton helps to establish a unified expressway look, utilizing stone walls, curvilinear metal roofs, a unified system of seating and furnishings, and high quality paving and landscape treatments. The station is envisioned to be simpler than Riverboat Station, encompassing a different colored beacon to distinguish the station and smaller follies. The unified look further differentiates the expressway, providing a continuous look and common feel.



# TAYLORSVILLE EXPRESSWAY

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View from the northwest plaza at Riverboat Station, looking southwest toward the BRT Station. Note the formal, linear tree plantings and landscape treatments, as well as the clean lines and contemporary feel that is envisioned.

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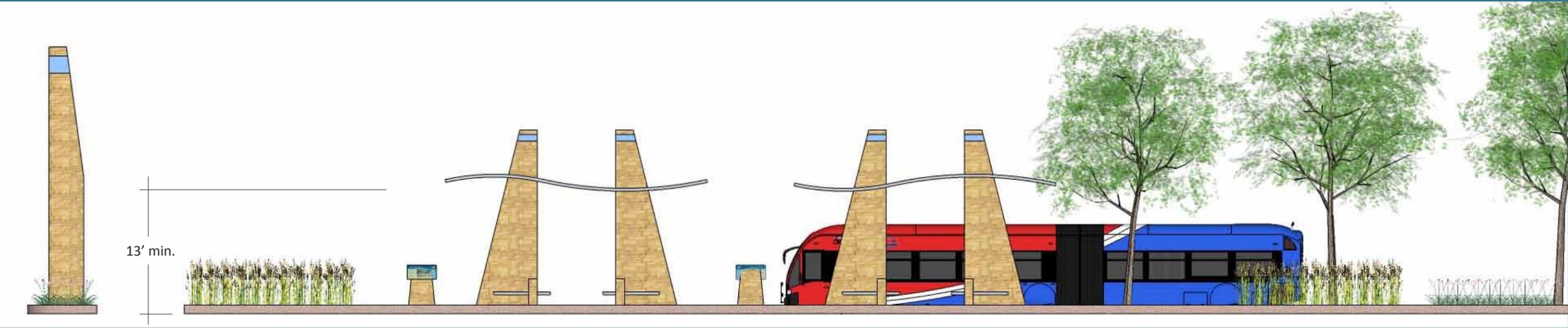
Aerial view of the southwest corner of Riverboat Station, illustrating the unique station architecture formed by the wedge-shaped stone walls, the iconic "light beacons" that serve as gateway markers and landmarks, the wave-formed shelter roofs that soften the overall feel, the simple materials and the formal landscape treatment.



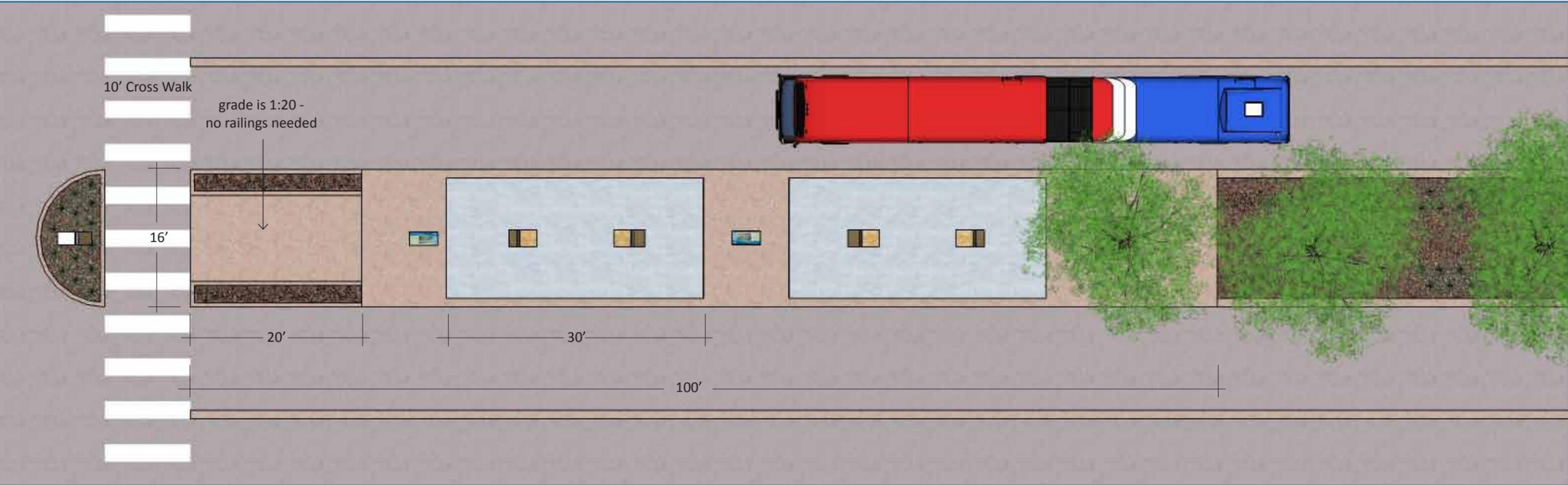
Street view of Riverboat Station, illustrating how safe pedestrian crossings are incorporated with the station design and the infill of existing parking lots along the Sorensen Research Park frontage with pavilion-type structures. The pedestrian and bicycle-friendly stations are envisioned to be active, multi-modal places that encourage interaction with the surrounding sites. The infill structures should help enliven the area by providing places to eat and shop that can be accessed from both sides.

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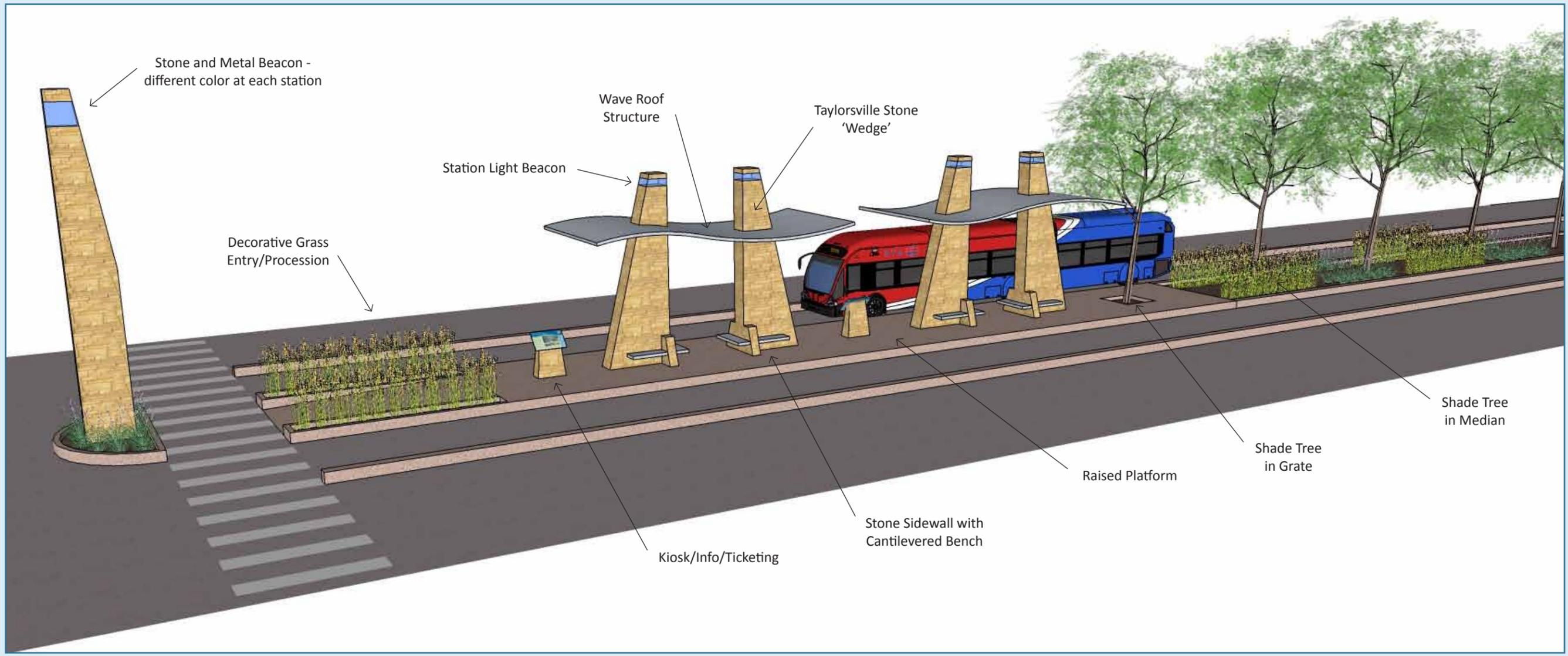
## CENTER STATION DESIGN



Center Station Section View



Center Station Plan View



Center Station Details

# URBAN DESIGN ANALYSIS, PRINCIPLES & RECOMMENDATIONS

1

## Fore Lakes Station

The development of this station depends on the transformation of the existing Fore Lakes Golf Course site into a transit-oriented development. While not currently planned, this modification could have significant positive impact on the surrounding neighborhood and community at large, in addition to enhancing long-term BRT ridership.

2

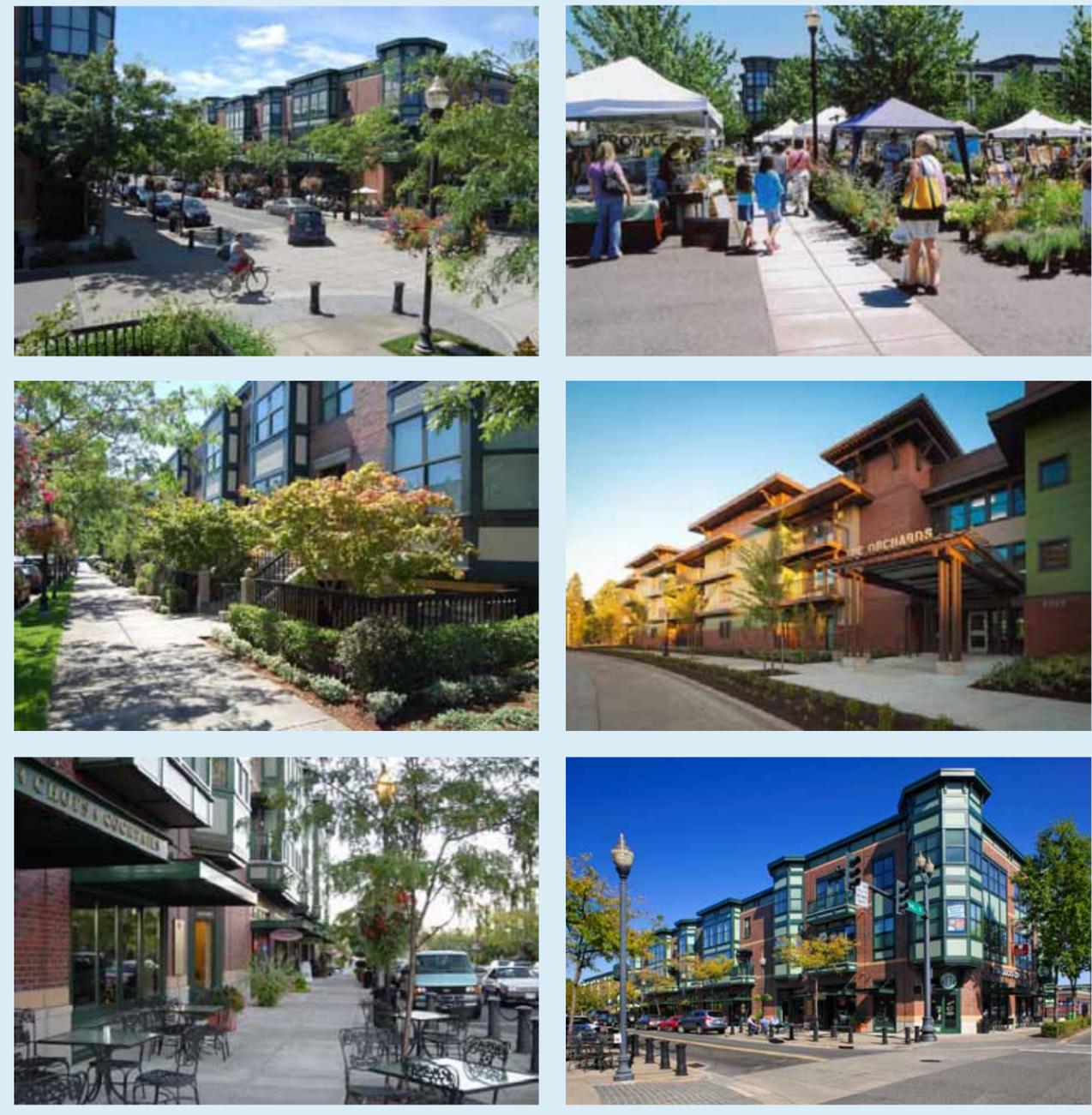
As illustrated in the accompanying illustrations and photos, the re-developed golf course is envisioned to include a mix of commercial and residential uses, all linked together as part of a walkable and bicycle-friendly design, public plazas, parks, open spaces and generous landscaping. It is assumed that student housing for the SLCC might be included, providing quick access to the nearby Redwood Road campus via BRT, bicycle or walking.

3

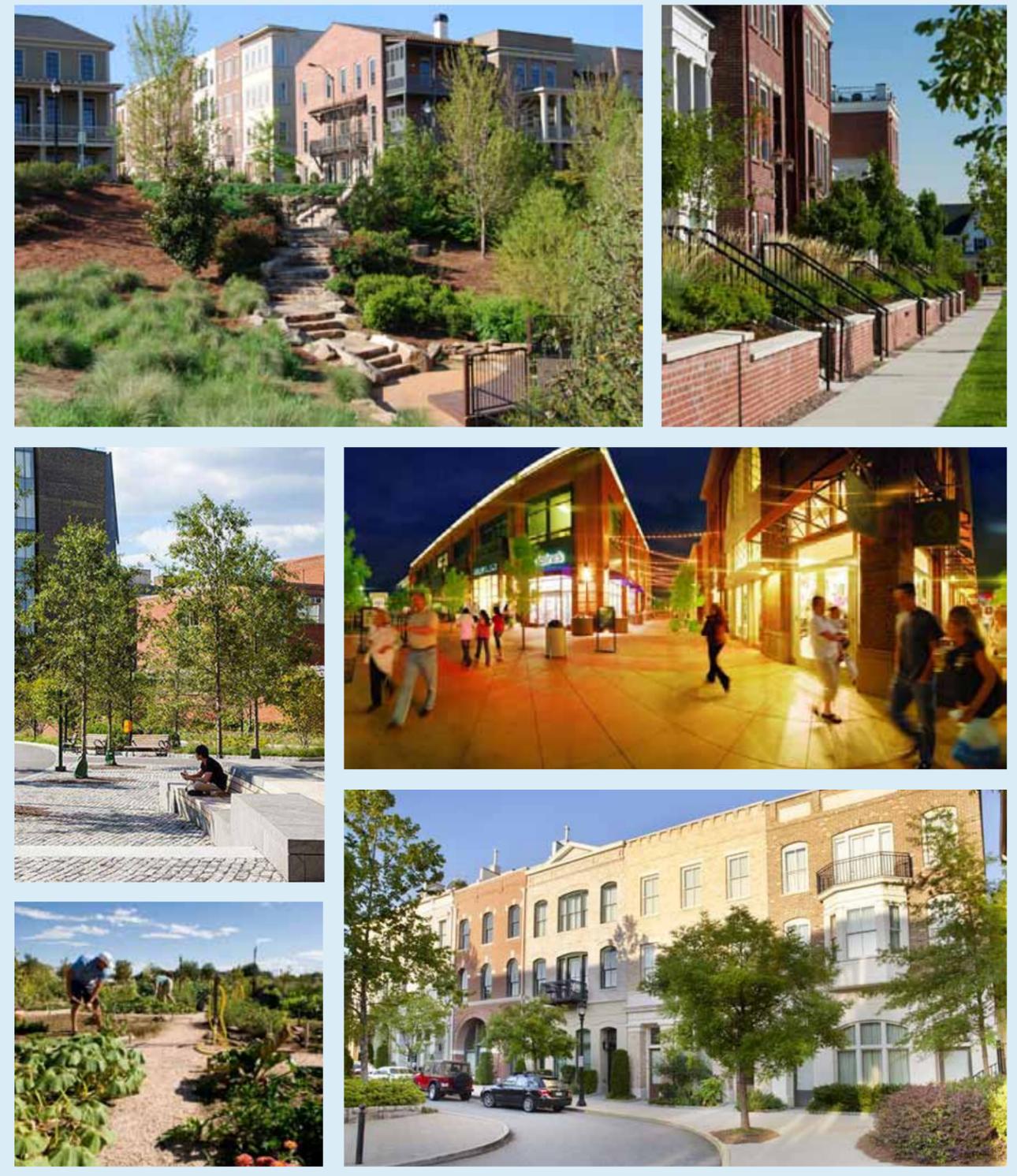
The design of the station would be similar to West Atherton, establishing a cohesive look through the use of common materials and furnishings, and creating a unified corridor appearance in the process. In contrast to the other stations, the station might incorporate elements of the architecture established for this mixed-use destination, which could take several directions depending on the design that evolves.



# TAYLORSVILLE EXPRESSWAY B R T



Examples of mixed-use development from Orenco Station, Hillsboro, Oregon



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- 3

While Orenco Station provides one model for Fore Lakes Station, other development concepts, looks and treatments are possible. The final design direction should be determined as part of detailed design studies yet to be undertaken for the area.

# URBAN DESIGN ANALYSIS, PRINCIPLES & RECOMMENDATIONS

1

## SLCC District Station

A small drop-off station is envisioned on a small roadway west of Redwood Road that leads to the center of the SLCC campus. Called here 1780 West, the narrow roadway will serve students living in high-density student residences envisioned for the site. Due to the narrow configuration of the roadway, two side stations are envisioned on each side of the street, incorporated into the building architecture as illustrated. A decision must be made whether or not to allow other vehicles to use the street, or whether it should be limited to BRT and similar vehicles.

2

As illustrated in the accompanying diagrams, an east-west running roadway currently extends through the site, linking the low-density residential neighborhood to the west with Redwood Road. Since the function of this road will be impacted by the proposed 1780 West BRT Street, solutions should be sought that address the needs of the community, neighborhood, campus and the BRT in an equitable manner. Three options are illustrated on the following page, which should serve as a point of departure for developing a workable solution as design efforts continue.

3

The establishment of a unified look is critical at this location, which is achieved through the use of simplified variations of the stone walls, the use of curvilinear metal roofs, and coordinated street furnishings and lighting found elsewhere along the expressway. These treatments are generally envisioned to be simpler than the 4700 South stations with the exception of the roadway itself, which should be developed with special paving and landscape treatments to help create a unique campus interpretation of the expressway “look”.





Future "Town and Gown" district at SLCC

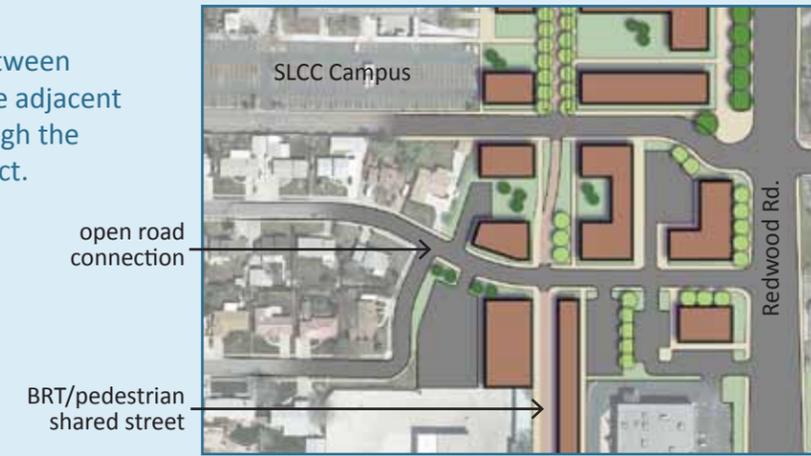


Future shared road, student housing and SLCC District Station

## NEIGHBORHOOD CONNECTION OPTIONS

### Option 1

Open connection between Redwood Rd. and the adjacent neighborhood, through the proposed SLCC District.



### Option 2

One way road allows neighborhood residents to exit onto Redwood Road through the proposed SLCC district.



### Option 3

Road between neighborhood and proposed SLCC district is closed to prevent vehicle use of BRT and pedestrian shared street.



# URBAN DESIGN ANALYSIS, PRINCIPLES & RECOMMENDATIONS

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## SLCC Plaza Station

As a terminal BRT Station located on a public college campus, this station should be designed as a special place and destination. As illustrated in the accompanying illustrations and photos, Plaza Station is dominated by a large, open public square, where students, teachers, staff and other BRT users will congregate and gather while waiting for the bus. The station is envisioned to be much more than a bus stop, however, incorporating a large shelter structure for protection from sun, rain and snow, in addition to a pleasant place to hang out and meet. The plaza and roadway are lined by a series of buildings, bringing together campus uses, student residences and commercial uses as part of a new “Town and Gown” District. These uses not only create a new and dynamic campus district, they also provide a facelift to Redwood Road, creating a new and exciting city district in the process.



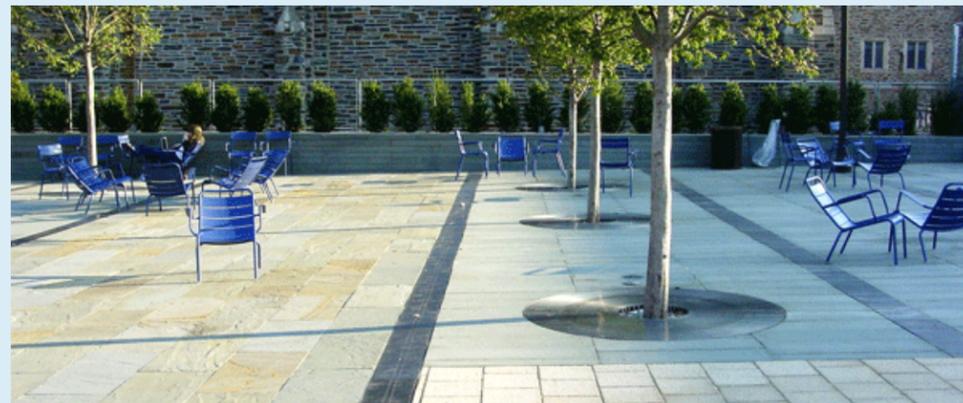
# TAYLORSVILLE EXPRESSWAY **B** **R** **T**



Future SLCC Plaza and BRT Terminal Station



Shade Structure Inspiration



Plaza Inspiration

- 1
- 2
- 3

# URBAN DESIGN ANALYSIS, PRINCIPLES & RECOMMENDATIONS

- 1
- 2
- 3

## Pocket Park Neighborhood Connectors and Wall Treatments

The residential neighborhoods north of the Fore Lakes golf have limited connection with 4700 South, which occurs at 1175 West. All other roadways designed to link with the expressway have been closed and fenced. In an effort to increase pedestrian and bicycle movement between the neighborhood and Fore Lakes Station and thereby increase use of the BRT line, Beechwood Road and 1300 West are proposed to be converted into Pocket Parks. These small parks will serve as engaging and elegant gateway, providing new park amenities to the neighborhood and promoting foot and cycle traffic along the expressway. Each park will utilize classic forms, becoming a small plaza as well as a park. Key uses include a small playground and an elegant central “green”, both of which will be lined and linked with pathways and seating areas. As illustrated in the accompanying illustrations, each park will be unique, linked together by a high stone wall that will extend along the length of the street. The wall will provide both visual and aural buffering to park users and adjacent properties, with clear openings provided in the wall as small gateways. Each park will also include trees for shade and seasonal interest, colorful planting beds for interest and delight, and carefully designed lighting to help ensure the parks are safe nighttime places.



Aerial view of Pocket Park



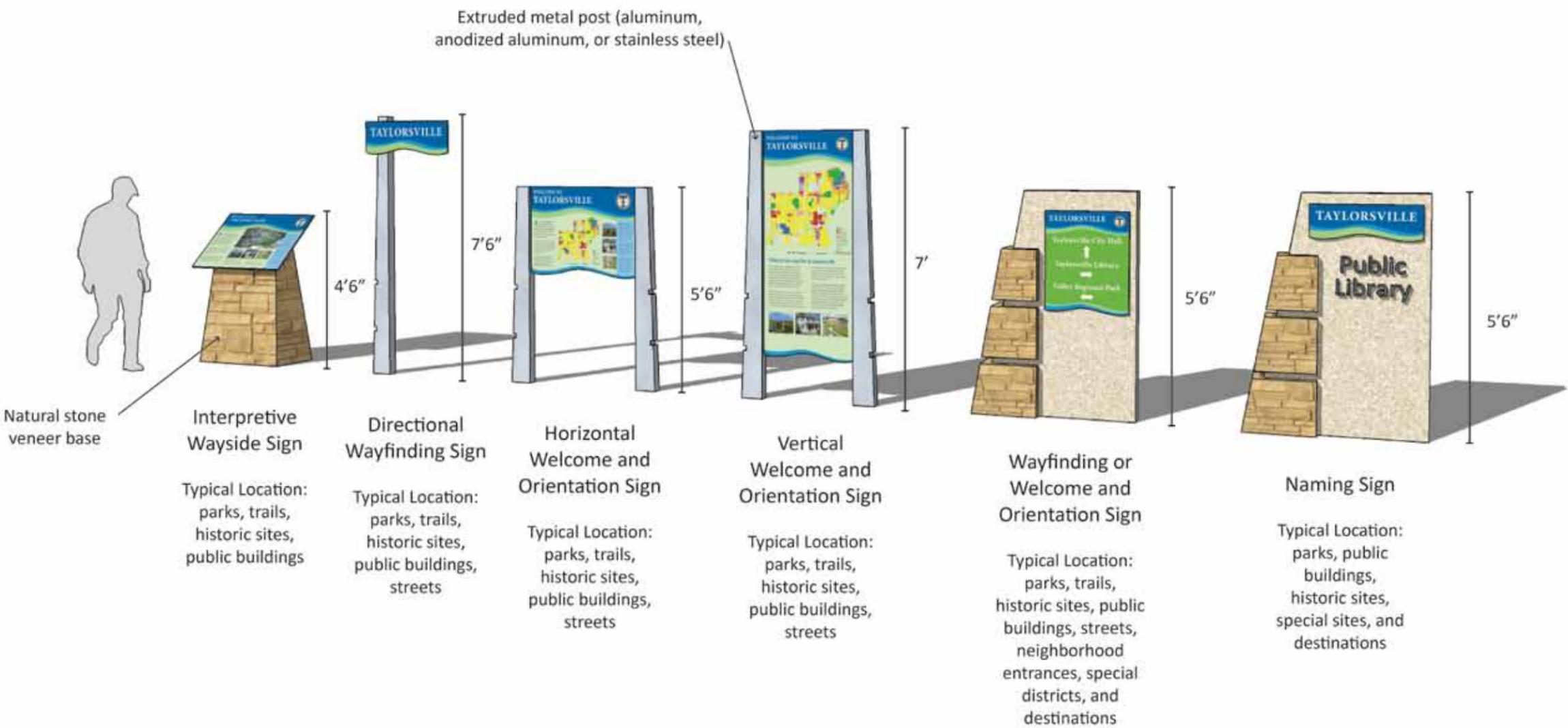
Stone Wall Examples



Street view of Pocket Park entrance from 4700 South

### Station Signage and Wayfinding

As indicated in the accompanying diagram, the Taylorsville Expressway should utilize the coordinated station signage and wayfinding system developed recently for the City. As detailed elsewhere in the plan, this study provided the basis upon which the stations, shelters and similar features were designed, which is intended to lend a highly integrated and unified look to the BRT route.



# URBAN DESIGN ANALYSIS, PRINCIPLES & RECOMMENDATIONS

1

## DESIGN GUIDELINES

The guidelines that follow are intended to help establish the character of the corridor as the BRT line is implemented. The guidelines provide references and ideas for the city and its partners to consider as various designs, plans, ordinances and official documents are created, helping key decisions to be made. The guidelines provide direction and vision for the treatment of the corridor landscape, streetscape and areas immediately adjacent to the corridor, in addition to the anticipated look and treatment of key buildings and architectural elements anticipated along the route

2

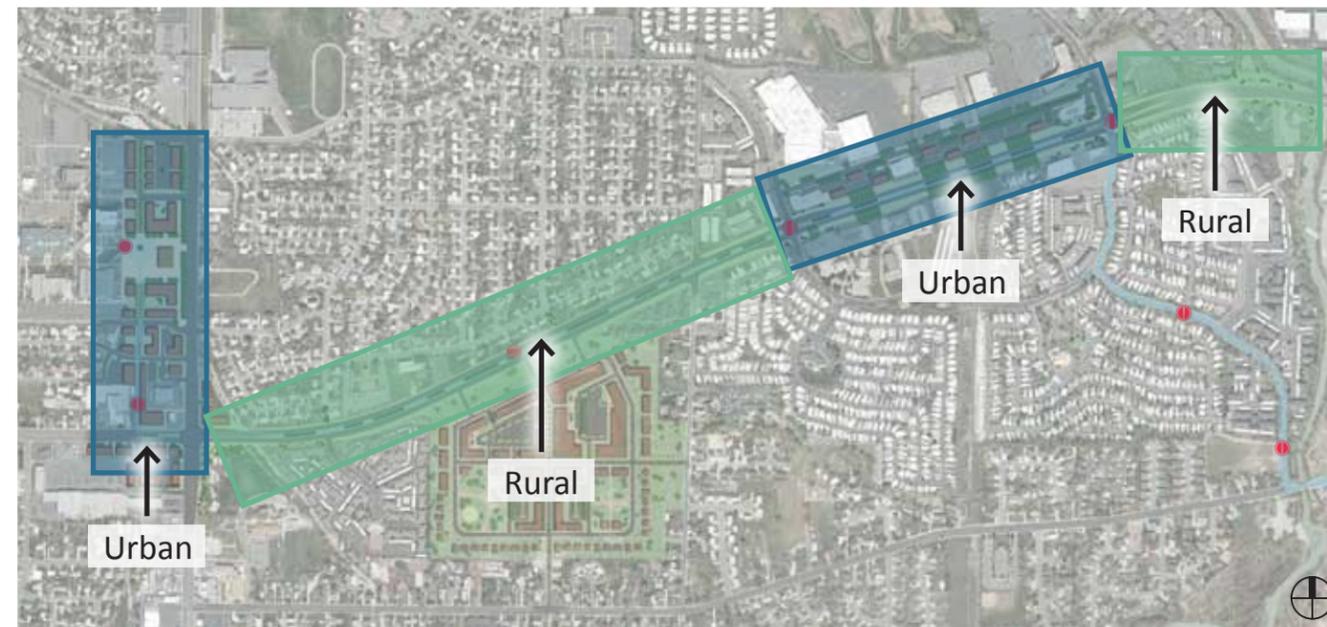
3

### Landscape Guidelines and Preferences

The expressway landscape establishes the special “sense of place” and character of the project. From the nearby Jordan River and adjacent parks/open fields, to the commercial areas, residential neighborhoods and the changing conditions along the expressway right-of-way, the following guidelines will help establish a unified look for the corridor.

In general, existing open spaces and natural areas outside of the corridor should be left alone so they can continue to serve as places for recreation, trails and visual relief to the built environment. Likewise, the width and layout of the expressway, the number of traffic lanes and general treatments of the roadway have been well documented in master plan and are not addressed further here. The following guidelines focus instead on the missing details, filling the gaps in information and providing clear direction how the edges, nodes and destinations along the route should be treated.

As illustrated in the adjacent diagram, the expressway has been divided into two types of landscape treatments, each responding to the locational and functional distinctions of the landscape along the route. **Urban Landscape Treatments** are located at and adjacent to the various stations, destinations and nodes along the route, where concentrations of people and higher intensity uses and activities are envisioned. In contrast, **Rural Landscape Treatments** are proposed for the sites between the destinations, where the corridor merges with adjacent neighborhoods and natural areas, requiring a softer and simpler approach.



### Urban Landscape Treatments

#### Urban Landscape Treatments: General

The treatment of stations and destinations should be contemporary and refined, as is most appropriate for these high activity areas. A limited palette of materials should be used, helping to merge the stations, plazas, paths and parking lots into the form of the area. Trees and vegetation, for example, should be typically laid out in strict lines and geometric patterns, emphasizing the flow of traffic and helping to direct motorists, pedestrians and cyclists to nearby locations. This approach will also help merge the corridor landscape with the hard edges of adjacent buildings, providing visual relief along the edges while screening the adjacent parking lots and service areas. Although these are anticipated to be highly refined areas, the use of manicured lawns and other environmentally-inappropriate and high-maintenance treatments are out-of-character and should be avoided. Shade trees should be located in proximity to pathways and sidewalks, providing shade and shelter to cyclists and walkers.

Fences and walls should be used only where needed, along the edges of exposed parking lots and helping to define the edges of private properties, for example. Fences should complement the overall landscape design intent for these areas, helping to create a unified corridor appearance. They should be simple in form and only as tall as necessary to fulfill the function required. All fences and walls should be constructed in a craftsman-like fashion, using the same palette of materials recommended for buildings as structures, as detailed later in these guidelines.



#### Urban Landscape Treatments: Streetscapes

The manner in which urban streetscapes are treated will have significant impact on the establishment of a unified look for the corridor, providing a special feeling for each node in the process. The edges of the streets should include appropriate street lights, furnishings and hardscape treatments, and be generously landscaped with trees, shrubs and special garden treatments at entrances and gateways, for example. In order to enhance the establishment of each station as a neighborhood gateway, minor variation in the design, materials, colors and plant species should be encouraged.

Strict rows of street trees should be planted within the wide park strips between the road and sidewalks, extending across the street and into the expressway median, creating a bold appearance from near and far, while alluding to the traditional windbreaks which once dotted the surrounding landscape. Trees and plants

# TAYLORSVILLE EXPRESSWAY

should be utilized that are well-suited to the local climate. They should fit with the surrounding landscape and be water-conserving, as detailed later in these guidelines.

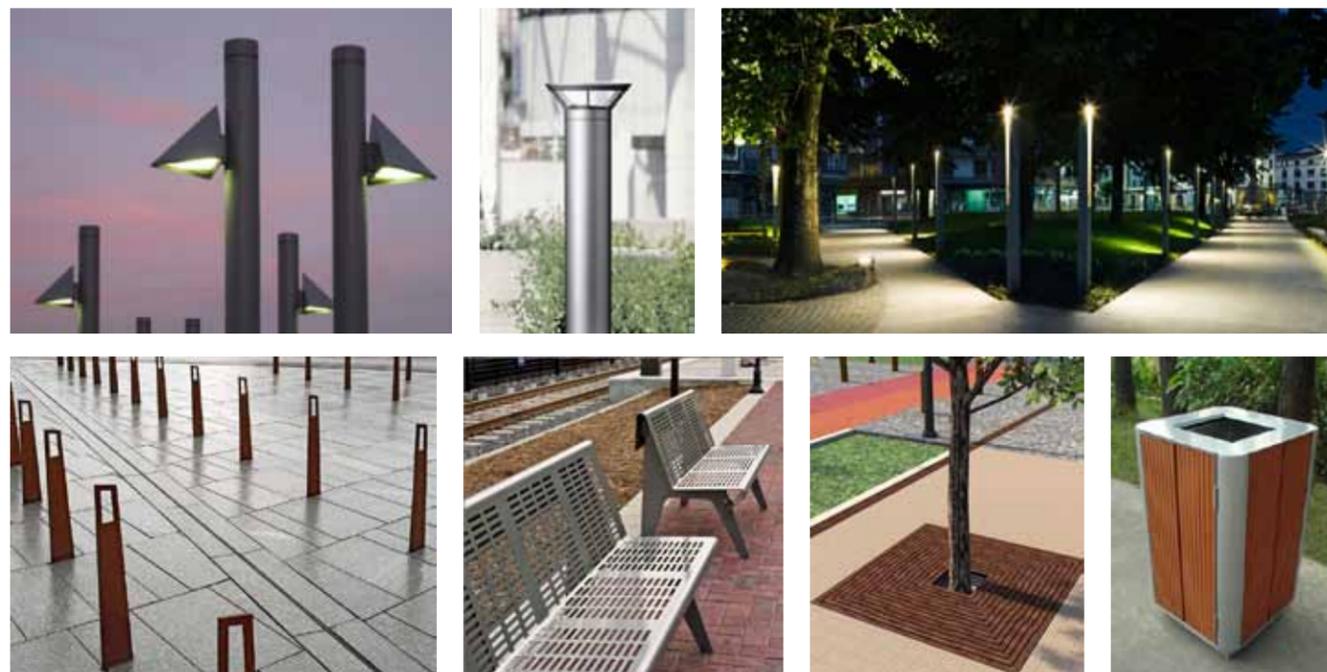
Additional design input is necessary to determine the final configuration of specific edge treatments. However, the wide sidewalks and walkways in these areas should be highly urban, matching the look and feel of the stations and adjacent plazas. They should be constructed of concrete, unit pavers or similar materials in accordance to specific design needs and functional requirements. Pavement colors should be carefully considered to ensure these facilities fit with the surrounding landscape.



## Urban Landscape Treatments: Lighting and Furnishings

Streetlights and furnishings should be coordinated, providing a highly refined and unified look for the corridor while allowing each node to express a sense of individuality. Furnishings should be limited to a select range of benches, bollard, bike racks, trash receptacles and other basic elements appropriate for the urban setting. Streetlights should complement the look and feel of the stations, including the “light beacons” proposed to help establish the stations as landmarks and gateways. Urban-appropriate light fixtures be selected from a single model-line, and poles and fixtures should be used complement the urban feel. Only “Night Sky” compliant fixtures should be used.

All lighting and furnishing elements should be high quality. Powder-coated and steel and aluminum is the preferred metal treatment.



## Urban Landscape Treatments: Parking Lots and Service Areas

Parking lots and service areas are essential components of successful mixed-use developments. The design of these areas should be treated with the same care as the adjacent streets, with a focus on “fitting in” and putting the needs of pedestrians and cyclists on equal footing with BRT, buses and vehicles.

A well-conceived shading strategy will provide a level of order and structure that can transform a parking lot from an undifferentiated asphalt expanse into a clearly articulated, safe, comfortable and visually interesting place. Parking lots should be landscaped with a mix of medium-to-tall shade trees (25-45 feet high and wide). Trees should have a heavy canopy to provide good shade and filter pollutants. They should be water conserving and distinctly different in species and form from those of adjacent streets. Tree species with roots that are likely to heave paving or which are difficult to maintain should be avoided. The trees should be typically planted in rows within barrier islands, although clustered tree planting may be preferable in certain cases.

Where parking is visible from the highway and adjacent roads, trees should be used to help buffer the parking area from the street. A loose and informal layout should be used to fit in with the surrounding landscape. Lighting should be provided in all parking lots, utilizing poles and fixtures that complement the urban feel of each node. Only “Night Sky” friendly fixtures should be used.

## Urban Landscape Treatments: Street Trees and Landscape Elements

A variety of large shade trees should be used to transform each urban node into a lush and inviting place. In general, shade and street trees should be selected that are large at maturity, since this will reinforce the formation of a pleasant and unified character for the expressway.



# URBAN DESIGN ANALYSIS, PRINCIPLES & RECOMMENDATIONS

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## Rural Landscape Treatments

### Rural Landscape Treatments: General

The types of places between the stations and destinations vary widely. They include large open spaces, small parks and the edges along the roadways, and are generally intended to accommodate a continuous trail or path as part of an corridor-wide active-transportation system. These areas should be informal and natural in appearance and function, helping to merge the expressway with the existing edge environment. The focus is on creating a flowing, natural experience for trail users and roadway visitors alike, reinforcing the more intensive and refined experience at the stations. The pathways should be wide and simple, utilizing asphalt or concrete as appropriate. Trees should be used sparsely in these locations, drawing attention instead to the naturalistic ground plane vegetation. Natural planting ideas should dominate, focusing on the use of native and water-wise grasses and perennials, which will help merge the designed landscape with naturally vegetated areas at the edges. Organic forms and patterns should dominate, emphasizing the flow of wind and other natural patterns, which will encourage the designed landscape to merge with the adjacent natural landscape.



These should be pleasant areas, with simple settings for pedestrians and cyclists to navigate the length of the corridor. The use of manicured lawns and other high-maintenance treatments are out-of-character and should be strictly prohibited in these zones. Shade trees should be located in proximity to pathways and sidewalks in order to provide shade and shelter for cyclists and walkers.

Fences should be used only where necessary, and new walls should be strictly prohibited. Fences should complement the overall design intent for these areas, helping create a unified corridor appearance. They should be simple in form and appearance and open, utilizing simple materials such as timber posts and galvanized wire. They should only be as tall as necessary to fulfill the function required. All fences and walls should be constructed simply, utilizing traditional building techniques to resurrect a vernacular appeal.



### Rural Landscape Treatments: Streetscapes

The manner in which rural streetscapes are treated will have significant impact on the establishment of a unified look for the corridor. These spaces should be simple and basic, with street lights only as required to meet safety needs. Furnishings should be simple and basic, limited to locations beneath trees along the mixed use pathway. The surrounding landscape treatment should engulf these places, helping to emphasize that they are simply rest spots and not real destinations. In order to enhance the establishment of each station as a neighborhood gateway, minor variation in the design, materials, colors and plant species should be used. Trees and plants should be utilized that are well-suited to the local climate. They should fit with the surrounding landscape and be water-conserving, as detailed later in these guidelines.

Additional design input is necessary to determine the final configuration of specific edge treatments. However, the wide sidewalks and walkways should convey a rural look and feel. Pavement colors should be neutral, helping to merge these facilities into the open surrounding landscape.

### Rural Landscape Treatments: Lighting and Furnishings

Street lights and furnishings should be coordinated, providing a sparse but unified look. They should be similar to those used elsewhere along the route, although the posts and details should convey a simpler, more rural aesthetic. Only "Night Sky" compliant fixtures should be used. Furnishings should be limited to a select range of benches, trash receptacles and other basic elements appropriate for the rural setting.



### Rural Landscape Treatments: Parking Lots and Service Areas

Parking lots and service areas are limited in these areas. However, where present, they should be treated in a similar manner as the surrounding landscape, utilizing rural design concepts to draw attention away from these utilitarian spaces. Careful design of these spaces should be undertaken to weigh the visual benefits and costs of utilizing traditional shrub and tree screening methods versus simply allowing the natural landscape treatment to encompass the edges of the parking and draw attention away from such uses.

If used, parking lot trees should have a heavy canopy to provide good shade and filter pollutants. They should be water conserving and distinctly different in species and form from those of adjacent streets. Tree species with roots that are likely to heave paving or which are difficult to maintain should be avoided. The trees should be typically planted in rows within barrier islands, although clustered tree planting may be preferable in certain cases. Parking lot lighting should be limited in these locations utilizing poles and fixtures that complement the rural feel. Only “Night Sky” compliant fixtures should be used.



### Rural Landscape Treatments: Street Trees and Landscape Elements

Trees in these areas should be carefully selected to support the overall look and open feel of the rural areas. They should harmonize the built and natural views, and be planted singly or in small groups with adequate space provided between each tree in order to allow it to reach full maturity and achieve its biological potential. Trees should be selected that are large at maturity, since this will reinforce the pleasant rural character of these zones.



### Public Art

Public art brings an air of imagination and creativity to public spaces, encouraging curiosity and at times, interaction. Public art can also provide visual relief and lively energy to otherwise indistinct places. In addition to the design elements described above, the metered use of public art can help create a unified expressway expression.

It is assumed that such features will be applied at stations and plazas, as part of the “folly” structures at key intersection corners, incorporated into the station architecture, and near entrances to buildings. This will help establish a sense of entry and create a distinct look for the expressway. However, it is equally important that appropriate artistic expressions be applied to the “rural” zones, possibly utilizing modified

natural materials such as stone and timber to create appropriate art responses that enhance the corridor as a whole.

If water features are utilized they should be simple and logical, easy to maintain. Simple water features such as stylized springs and mist-producing nozzles can be highly effective.



### Sustainable Landscapes

The preservation of the environment and the responsible use of natural resources is an important consideration for this project. As the 4700 South Expressway is implemented, actions should be taken that will make the corridor a more sustainable place, while improving the quality of life and well-being of the city’s residents and enhancing the visitor experience.

There are numerous “green building” evaluation and rating systems in use nationwide, and while many government agencies support the goals and approaches of these systems, certification can be cost-prohibitive. In response, several government agencies have taken and adapted the principles of the “green building” rating systems, creating their own sustainability standards for new development and redevelopment and eliminating the certification component of the process.

Two green building systems are recommended as a basis for establishing clear sustainability benchmarks for the development and redevelopment along the expressway: Leadership in Energy and Environmental Design (LEED), and the Sustainable Sites Initiative™ (SITES™), both of which are administered by the U.S. Green Building Council (USGBC).

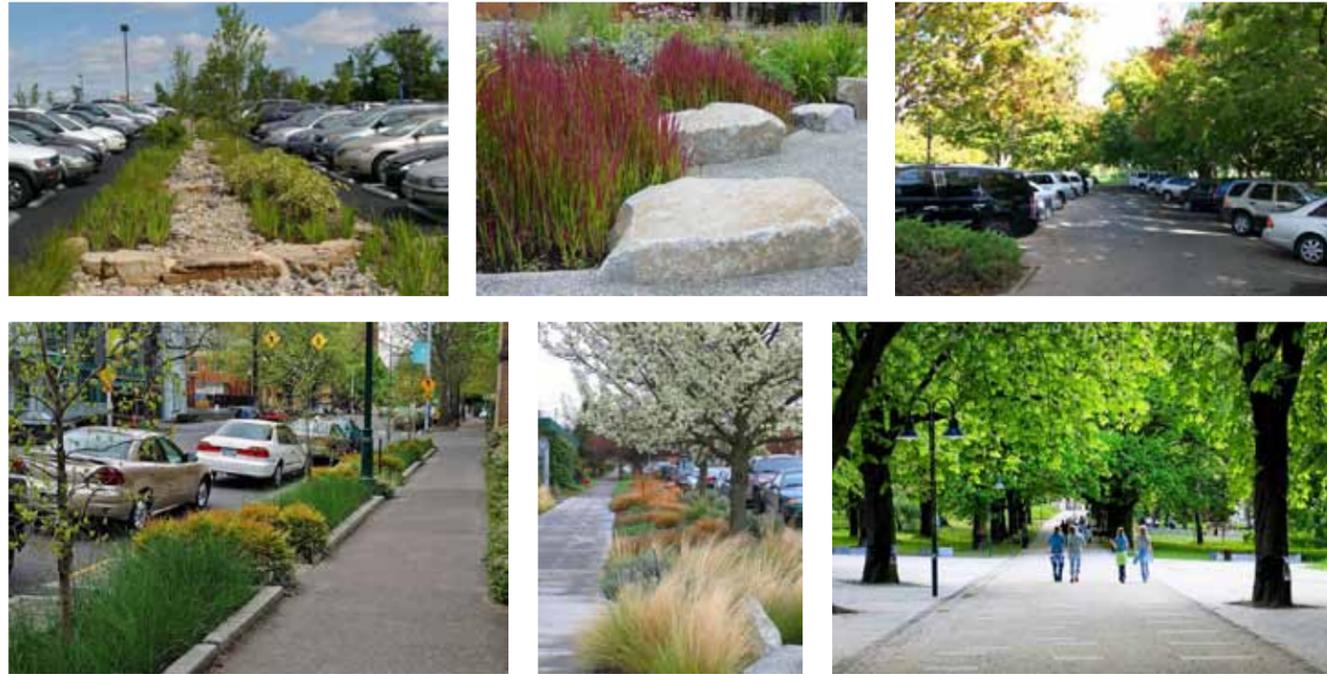
LEED (<http://www.usgbc.org/leed>) has developed guidelines for a wide range of project types, including building design and construction, interior design and construction, building operation and maintenance, neighborhood development, and homes. The LEED system addresses the planning design, and construction process; the location of projects and transportation options; materials and resources; water efficiency; energy and atmosphere; sustainable sites; indoor environmental quality; innovation; regional environmental priorities; neighborhood pattern and design; and green infrastructure and buildings. While LEED applies primarily to buildings and building systems, the SITES™ Rating System (<http://www.sustainablesites.org/>) focuses on sustainable land design and development. SITES™ is applicable to a full range of project types as well, and evaluates projects in ten categories, including site context; pre-design assessment and planning; water; soil and vegetation; materials selection; human health and well-being;

# URBAN DESIGN ANALYSIS, PRINCIPLES & RECOMMENDATIONS

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construction; operations and maintenance; education and performance monitoring; and innovation and exemplary performance.

Taken together, the LEED and SITES™ rating systems form a comprehensive pool of green development strategies, which when adapted to the unique needs of this project can help ensure that the 4700 South Expressway develops into a high-quality and attractive place with a thoughtful network of streets, pathways, open spaces, plazas, and corridors.



## Architectural and Built Form Guidelines and Preferences

General guidelines and preferences for the architectural character of buildings constructed along the expressway are provided to assist in establishing a unified look and character along the expressway route. The most iconic buildings are those that contribute to the establishment of a “sense of place”, which include the pavilion infill buildings proposed for the Sorensen Research Park, and the various buildings which will be concentrated along 1780 West as part of creating a “Town and Gown District” on the east edge of the SLCC Campus. The buildings which may emerge at the Fore Lakes site and other possible redevelopment areas are specifically not addressed, as they will be developed as part of detailed planning efforts.

While the size and function of the buildings are likely to vary according to specific needs, the following qualities should be sought for new buildings at both locations:

- Simple and straightforward building forms.
- Practical and utilitarian use of space.
- Use of natural building materials.
- Expression of exposed structural elements such as beams and rafters, columns, and steel brackets.
- Expression as stand-alone structures surrounded by open-space.

- Structures with strong image-making capacity.
- Focus on street-level design and the creation of positive pedestrian connection.
- Restraint and order with little or no decoration.
- Use of contemporary materials including metal, glass, timber and stone.



## Scale, Massing and Form of new Buildings

The infill sites and new campus buildings should exude a simplicity that provides a simple understanding and readability for each building. Original design and form for each building in the corridor is preferable to the use of corporate building prototypes and building designs that are replicated and monotonous. In addition, historical stylization and “theme” architecture, especially of styles unrelated to the building purpose, should be discouraged. Each building should be designed with individual character and respect for the site and surroundings.

To minimize the impact of the expressway, new buildings along 4700 South and Redwood Road should generally be kept to three stories or less, with slightly taller heights considered for frontages in mixed-use areas such as the Fore Lakes development area. Taller buildings should be pushed away from the roadways, reducing impact to the viewshed. Multiple buildings on the same site should be cohesively planned and designed so a visual relationship is established between the buildings, and connections along pedestrian plazas, pathways and sidewalks enhanced.

The small structures and “follies” proposed at intersection corners throughout along 4700 South should have a strong relationship with the pavilion structures, including simple materials and low scale. These features should relate to the surrounding landscape, utilizing stepped roofs, variation in windows and openings, vertical breaks in the facade and other architectural variation.



## Materials

Materials should be contemporary and long lasting, including metal siding and panels, horizontal and vertical metal siding patterns in prefinished colors, and natural metal finishes, including weathering steel, in addition to exposed board-formed concrete, stone and glass.

## Orientation

Building design and siting should consider solar orientation, climatic conditions, wind patterns, and other environmental conditions. Parking should be to the rear and between buildings or provided as part of screened and shared lots. The exterior of buildings should include windows and openings, materials, and architectural features that are coordinated on all sides of the building in order to achieve harmony and continuity.

## Screening

Roof top and ground level mechanical units, condensing units, electrical equipment and transformers, dumpsters, and service loading areas should be screened from view. Screening for all equipment and dumpsters should be integrated and complementary to the design of the site and buildings. Service and loading areas will need to be considered early on in the site planning process to accomplish effective screening.

## Building Signage

Architectural signage is often a prominent feature wherever commercial establishments exist. Numerous signs, highly colored and stylized signs, and signs that are out of scale can have a negative impact on the establishment of an attractive and unified expressway. In addition, the use of buildings as advertising, which prominently display corporate identity, is not conducive to this area and should be discouraged. A detailed signage plan should be prepared prior to establishment of the expressway to ensure an acceptable balance is achieved.

## Sustainability

The design of sustainable buildings that are more energy efficient and that have less impact on the overall environment have become fairly standard practice in recent years, and will continue to do so in the future. Sustainable design and programs such as the USGBC (U.S Green Building Council) LEED (Leadership in Energy and Environmental Design) and SITE rating systems should be considered and applied as determined appropriate.