CHAPTER 6 – CAPITAL FACILITIES RECOMMENDATIONS

Select ServicePlan2020 service recommendations must occur with an upgrade of select capital facilities. In addition to the capital improvements discussed in this chapter, continued cooperation with the City of Austin and surrounding cities is assumed to address on-going issues such as sidewalks, accessibility, and pedestrian safety at intersections.

Specific recommendations are made for downtown Austin, park-and-rides, and several different transit center locations.

6.1 Downtown Austin Stop Pattern Recommendations

Downtown Austin has a variety of challenges in providing effective and efficient transit service within downtown Austin. This section discusses the challenges and proposes a series of recommendations to address them.

6.1.1 Current Downtown Austin Bus Operating Patterns

Downtown Austin bus circulation is characterized by travelling north and south on a variety of patterns. Virtually every local route in downtown operates in one of the following two patterns:

- Southbound on Colorado Street and northbound on Brazos Street;
- North and southbound on Congress Avenue.

Some routes use the Colorado Street and Brazos Street pair. Others use Colorado Street for southbound travel and Congress Avenue for northbound travel. There is no consistency with the routing, making it hard for a new user to figure out where to access their bus.

Express routes follow Guadalupe Street in the southbound direction and Lavaca Street in the northbound direction. These streets have been designated by the City of Austin as future transit priority corridors. They are located at the western edge of the downtown area.

Exhibit 6.0 shows the existing downtown Austin route structure.
6.1.2 Downtown Austin Travel Patterns

Approximately 13,000 bus passengers travel to downtown Austin on a daily basis. Based on a 2005 Origin & Destination Study, about 80 percent of those passengers transfer to another route.

The remaining 3,200 daily passengers are destined to downtown Austin, with about half of those coming from commuter or flyer routes. It appears that a large number of commuter and flyer route patrons are walking from Guadalupe Street / Lavaca Street to Congress Avenue.

A large number of routes through downtown Austin are “through-routed”, i.e. they do not terminate in downtown but continue from one end of downtown to another. Approximately 3,600 daily passengers travel through downtown on a through-routed bus.

6.1.3 Operational Issues with Downtown Austin Route Alignments

Congress Avenue is the heart of downtown. However, it has several different operational issues for buses that reduce the quality of service for both vehicles as well as bus traffic. Each Congress Avenue issue will be discussed below:

- **Buses Cannot Pass Each Other** – The lanes on Congress Avenue are too narrow to allow buses to pass each other. Since buses cannot pass, any bus arriving early in downtown, or loading a wheelchair, or conducting a driver relief negatively impacts and delays multiple buses behind it.
- **Loading Platforms Not Long Enough** – At each stop, there is curb space for only one bus to load and unload. At some stops, there is only enough curb space for the front door. This inhibits efficient loading, and delays buses traveling through downtown.
- **Stop Spacing is Too Close** – There is a stop every block, or about 360 feet apart. Every bus operating on Congress Avenue stops at every stop – and due to the size of the loading pad, it is highly likely that any bus trailing another will be stopped by a red light prior to being able to continue on its way.
- **Inconsistency in Corridors Served** – There is no discernable pattern for why which routes operate on which streets throughout downtown.
- **Community Events Impact Service** – Congress Avenue is often closed for community events such as parades, festivals, and races. If this happens, service is shifted – often with minimal notice – to alternative streets, which is detrimental to both existing and any new customers.

The overall impact of these operational issues is that buses travel down the Congress Avenue corridor at a scheduled speed of 4.5 miles per hour – which is a small step up from walking speed. The average systemwide speed for Capital Metro routes is between 12 and 14 miles per hour, so this is much slower than average. The slow downtown operations have significant cost impacts on Capital Metro.

In addition to increased costs and delaying customers riding through downtown, the slow operations negatively impact auto traffic on Congress Avenue. A constant stream of buses on Congress Avenue stopping at every light makes it difficult to make right turns. In effect, the right lane on Congress Avenue operates as a bus-only lane.

6.1.4 Existing Passenger Amenities in Downtown Austin

Over 13,000 passengers board buses in downtown Austin on a typical weekday – the majority of them on Congress Avenue. While Congress Avenue has wide sidewalks and ramps at intersections, most stops do not have shelters, leaving riders exposed to sun and rain. Also, few stops have amenities such as benches.
Bus stops on Brazos and Colorado Streets are adjacent to narrow sidewalks and have very few amenities such as shelters and benches. In addition, some are located in loading zones or parking areas.

Bus stops on Guadalupe and Lavaca Streets have virtually no amenities other than a bus stop sign. Sidewalk ramps are often not present and there are some grades that are challenges for wheelchairs as well. As with Brazos and Colorado Streets, some of the stops are located in parking or loading zones, which leads to conflicts.

6.1.5 Downtown Austin ServicePlan2020 Recommendations

Downtown Austin is one of the biggest destinations for Capital Metro, and a focal point for service from across the region. ServicePlan2020 recommends a series of changes to improve speed and reliability of the buses, reduce traffic conflicts on Congress Avenue, and make the downtown route structure more understandable and marketable to new and existing riders.

ServicePlan2020 addresses Congress Avenue operational issues by shifting most local service from Colorado Street, Congress Avenue, and Brazos Street to the Guadalupe Street / Lavaca Street corridor. Proposed MetroRapid routes would also use the Guadalupe / Lavaca Street corridor. Guadalupe and Lavaca Streets would become the primary transit corridor in downtown Austin – where local and MetroRapid service from around the city converge.

Four stop pairs are anticipated in downtown on Guadalupe Street / Lavaca Street between Cesar Chavez and MLK – stops are placed between three and five blocks apart. Local service would be able to move through downtown Austin several minutes faster. In addition, this shift would also facilitate transfers in downtown Austin by creating central stops where all routes come together.

Commuter service is proposed to shift to Congress Avenue. Due to less transfers to/from commuter routes, the stop pattern may be changed to have stops every three or more blocks to speed service. Except for weekday morning and afternoon peak periods, the number of buses on Congress would be limited. The projected number of buses during one hour in the morning would be 29 southbound and 17 northbound – which is significantly less than current bus volumes of 40 to 55 buses. With only commuter routes on Congress Avenue, the total number of people waiting on Congress Avenue is projected to be reduced dramatically.

The wholesale restructure of service in downtown Austin can only occur after specific stop locations are identified, ADA access improvements are made on both Guadalupe and Lavaca Streets and the adjacent lateral streets, and bus lanes are created to better separate buses from automobile traffic.
Description of Proposed Stops
While selected existing stops would be used on Congress Avenue for the express and flyer routes, stops along Guadalupe Street and Lavaca Street should be enhanced to accommodate increased bus volumes and transferring. The proposed stop locations for regular and MetroRapid routes were assumed to be here (it should be noted that these exact locations have not been finalized):

- Between 16th and 18th Streets;
- Between 12th and 14th Streets;
- Between 8th and 10th Streets;
- Between 3rd and 5th Streets;

The bus stop consolidation on Guadalupe Street, Lavaca Street, and Congress Avenue is projected to reduce the number of bus stops in downtown by approximately half.
Proposed Bus Volumes on North/South Downtown Austin Streets

The resulting peak bus volumes are included in Exhibit 6.2. These represent the number of buses by route that operate through downtown Austin between 7:00 a.m. and 8:00 a.m. on weekday mornings. While bus volumes will vary along these corridors depending on the final turning movements of each route, they represent the peak volumes at the highest volume location. This is likely to be between 3rd and 7th Streets on Guadalupe and Lavaca Streets. The total peak hour volumes would be 47 buses on Guadalupe Street and 51 buses on Lavaca Street.

The express and flyer routes would run north and southbound on Congress Avenue between 11th Street and Riverside Drive. Total morning peak hour volumes would be 28 southbound buses and 14 northbound buses on Congress Avenue.

Exhibit 6.2 – Downtown Austin Projected Morning Peak Hour Bus Volumes

<table>
<thead>
<tr>
<th>Route</th>
<th>Guad</th>
<th>Lavaca</th>
<th>Cong-SB</th>
<th>Cong-NB</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>3</td>
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<td>3</td>
<td>3</td>
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<td>4</td>
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<td>5</td>
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<td>2</td>
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<td>6</td>
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<tr>
<td>7</td>
<td>4</td>
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<tr>
<td>9</td>
<td>1</td>
<td>1</td>
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<tr>
<td>10</td>
<td>3</td>
<td>3</td>
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<tr>
<td>17</td>
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<td>18</td>
<td>3</td>
<td>3</td>
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<td>19</td>
<td>2</td>
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<td>20</td>
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<td>22</td>
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<tr>
<td>110</td>
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<td>127</td>
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<td>142</td>
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<td>171</td>
<td>3</td>
<td></td>
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<tr>
<td>935</td>
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<td>970</td>
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<td>982</td>
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<td>987</td>
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<tr>
<td>990</td>
<td>1</td>
<td></td>
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<tr>
<td>Total</td>
<td>47</td>
<td>51</td>
<td>28</td>
<td>14</td>
</tr>
</tbody>
</table>
Estimates of Passenger Volumes at Key Stops
The bus stops on Guadalupe and Lavaca Streets with the highest projected ridership are the stop pairs adjacent to 9th Street and 4th Street. Current weekday passenger volumes on local routes at stops along Congress Avenue, Brazos Street, and Colorado Street were used to estimate initial passenger volumes at these four stops. As a comparison, the busiest existing stop in downtown has approximately 1,600 boardings and 1,200 alightings. The ridership projection results are summarized below in Exhibit 6.3.

Exhibit 6.3 – Estimated Weekday Passenger Volumes at Proposed Guadalupe / Lavaca Stops

<table>
<thead>
<tr>
<th>Stop Location</th>
<th>Projected Boardings</th>
<th>Projected Alightings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guadalupe / 9th</td>
<td>1,400-1,800</td>
<td>2,200-2,600</td>
</tr>
<tr>
<td>Guadalupe / 4th</td>
<td>2,400-2,800</td>
<td>1,500-1,900</td>
</tr>
<tr>
<td>Lavaca / 8th</td>
<td>3,400-3,800</td>
<td>2,900-3,300</td>
</tr>
<tr>
<td>Lavaca / 4th</td>
<td>700-900</td>
<td>1,700-2,100</td>
</tr>
</tbody>
</table>

It should be noted that the numbers in Exhibit 6.3 reflect existing ridership levels. We anticipate ridership will continue to grow on existing routes and that the introduction of MetroRapid on the Guadalupe and Lavaca Street corridor will further this trend. Amenity planning should reflect higher numbers than what is shown in Exhibit 6.3.

6.1.6 Proposed Downtown Austin Capital Facilities

The ridership projections suggest that shelters and benches are necessary at stops along the Guadalupe Street / Lavaca Street corridor. In addition to the shelters and benches, additional improvements are necessary.

Sidewalk widths on either Guadalupe Street or Lavaca Street appear to be inadequate to accommodate higher ridership levels – so sidewalk widening must be considered. In conjunction with sidewalk widening, the sidewalks must be made accessible, particularly on the streets connecting Guadalupe and Lavaca Streets. Currently, there are many intersection locations where wheelchair ramps are not available.

Additional proposed features at Guadalupe Street and Lavaca Street stops include security cameras and ticket vending machines. Loitering could be reduced and security enhanced by enforcing a pre-paid fare zone at these stops. The City of Austin and the Downtown Austin Alliance should identify opportunities for public restrooms in downtown Austin, ideally within a walkable distance of the stops referenced above.

In order to facilitate bus volumes through the Guadalupe and Lavaca Street corridor, the right-hand curb lane should be restriped and signed for buses and right-turning vehicles only. On-street parking would be affected by both the recommendation to widen sidewalks and by designating the curb lane as a bus lane.

Several Capital Metro routes terminate in downtown. Currently there are no provisions for recovery or layover in downtown. While it affects only a limited number of routes, Capital Metro, in conjunction with City of Austin and affected interests, should consider identifying areas for layover or bus staging in downtown.
6.2 Park-and-Ride Recommendations

ServicePlan2020 recommends several new commuter routes and enhancements to existing ones. All of the commuter route recommendations are dependent on additional parking capacity.

6.2.1 Oak Hill Park-and-Ride

The existing Oak Hill Park-and-Ride is a TxDOT facility located on SH-71 just east of William Cannon. The original park-and-ride was in the Oak Hill shopping center, but the shared use arrangement was terminated and the parking was shifted to this location. The existing location is located after the major traffic bottleneck in the area – the intersection of SH-71 and US-290. In addition, it has poor pedestrian access, which requires buses to serve the facility travelling eastbound only. The shifted location of the Oak Hill Park-and-Ride has contributed to the drop in parking utilization and ridership.

Recommendations

Implement Shared-Parking with ACC-Pinnacle

ACC-Pinnacle is planning to expand parking capacity. Through an interagency agreement, utilize a portion of the ACC parking area for a park-and-ride and extend Route 171 from the existing Oak Hill Park-and-Ride. The existing TxDOT park-and-ride would remain open and the ACC Park-and-Ride would supplement this parking.

Construct Regional Park-and-Ride in Proposed Oak Hill Town Center

A regional park-and-ride should be constructed in the new Oak Hill Town Center, which will replace the existing TxDOT facility on SH-71. The facility should have at least 400 stalls to account for future growth and allow this facility to be an intercept point for future growth south and west of Oak Hill. Strong consideration should be given to making this a shared-use facility with a complementary land use, such as theatres or restaurants. This park-and-ride would be served by frequent all-day service to downtown Austin.

6.2.2 Manor Park-and-Ride

Manor currently has two different park-and-ride locations. Both are small, with capacity for 15 vehicles or less. Neither is well marked and it is not readily apparent that they are even park-and-ride locations.

The commuter shed analysis completed in the market research indicates that the US-290 corridor will continue to grow. A regional park-and-ride in Manor could act as a trip intercept for these trips.

Recommendations

As outlined in All Systems Go, Capital Metro should construct a new regional park-and-ride in Manor. The lot should be at least 200 stalls, so that it can accommodate future growth in and around Manor. This park-and-ride would be served by more frequent Route 990 service.

6.2.3 IH-35 South Corridor Park-and-Ride

The market research indicated that the South IH-35 corridor represents one of the biggest potential commuter markets to downtown Austin. Significant growth is continuing to occur to the south, so this market is growing. There is currently no commuter express service in this corridor.

Recommendations

A new regional park-and-ride should be constructed in South Austin. The lot should include at least 400 stalls. Although ServicePlan2020 does not specify an exact location, it should be located far enough south to act as an intercept for trips coming from Kyle, Buda, and San Marcos. At a minimum, it should
be located no further north than Slaughter Lane. This park-and-ride would be served by a new route 945 and provide express service into downtown Austin.

6.2.3 South Mopac Park-and-Ride
The market research indicated that the South Mopac area represents a large potential commuter market to downtown Austin. This area currently has neither a park-and-ride nor does it have commuter service.

Recommendations
A new park-and-ride should be created in the South Mopac area. Shared parking opportunities may be available at some of the businesses in the vicinity of Slaughter Lane and Mopac. A new Route 901 would provide express service from the proposed South Mopac Park-and-Ride to downtown Austin.

6.2.4 Southpark Meadows Transit Center
The Southpark Meadows commercial area is currently served by Routes 1L and 201. Ridership has been growing steadily on both routes as more people are travelling there for shopping and employment opportunities.

ServicePlan2020 recommends that Routes 3 and 10 be extended to Southpark Meadows to provide a defined destination at the southern terminus of both routes. In addition, the S. Congress / N. Lamar MetroRapid service will terminate at Southpark Meadows. The existing bus stop at Southpark Meadows is inadequate to handle the additional bus volumes being proposed.

Recommendations
In order to accommodate increased numbers of buses, a new transit center must be constructed at Southpark Meadows. The transit center should be able to accommodate a minimum of seven buses, including at least two 60-foot vehicles. The location of the transit center should be within easy walk of the commercial areas that are a prime destination for passengers.

6.3 Transit Center Assessment in North Central Austin
In north Austin, there are two transit facilities that are approximately 1.5 miles apart: the North Lamar Transit Center and the Highland Mall Transit Center. The North Lamar facility is an off-street facility that is a transfer point for several routes and also has a park-and-ride. The Highland Mall location is an on-street facility where several routes pass through or terminate, allowing for transfers between routes.

This section will summarize the existing conditions at both facilities, and potential changes for improving service and connectivity for North Austin routes. Specifically, this section discusses the merits and criteria to consider for consolidating the functions of these two facilities.

6.3.1 North Lamar Transit Center (NLTC) Operations Summary
This facility is located at the intersection of North Lamar Blvd and Research Blvd where US 183 crosses over North Lamar Blvd. Currently, eight routes serve the NLTC. Routes 1L, 1M, 101, 174, and 350 travel through this facility. Routes 240, 300 and 383 terminate at this location. There are approximately 35 buses per hour during the peak hour at the NLTC.

On a typical weekday, there are approximately 2,700 boardings and 2,700 alightings at the NLTC. The following chart summarizes ridership data collected in fall of 2008 for NLTC.
### Exhibit 6.4 – Ridership at North Lamar Transit Center

<table>
<thead>
<tr>
<th>Route</th>
<th>Northbound Boardings</th>
<th>Northbound Alightings</th>
<th>Southbound Boardings</th>
<th>Southbound Alightings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>620</td>
<td>374</td>
<td>308</td>
<td>639</td>
</tr>
<tr>
<td>101 Limited</td>
<td>24</td>
<td>199</td>
<td>202</td>
<td>48</td>
</tr>
<tr>
<td>174 Flyer</td>
<td>57</td>
<td>13</td>
<td>18</td>
<td>53</td>
</tr>
<tr>
<td>240</td>
<td>135</td>
<td>Terminal</td>
<td>Terminal</td>
<td>117</td>
</tr>
<tr>
<td>300</td>
<td>Terminal</td>
<td>684</td>
<td>733</td>
<td>Terminal</td>
</tr>
<tr>
<td>350</td>
<td>104</td>
<td>207</td>
<td>173</td>
<td>75</td>
</tr>
<tr>
<td>383</td>
<td>383</td>
<td>Terminal</td>
<td>Terminal</td>
<td>293</td>
</tr>
<tr>
<td><strong>Total Ridership</strong></td>
<td><strong>1,323</strong></td>
<td><strong>1,477</strong></td>
<td><strong>1,434</strong></td>
<td><strong>1,225</strong></td>
</tr>
</tbody>
</table>

Virtually all of the ridership activity at the North Lamar Transit Center consists of transfers. A small number of passengers walk to destinations to the north, but the location of the transit center effectively precludes a significant walk-up market.

The North Lamar Transit Center is self-contained, separated from regular traffic, and serves as a focal point for regional transit routes. It is specifically designed to handle a large number of buses and passengers while providing weather coverage for waiting riders and layover space for terminating routes. In addition, it is adjacent to a park and ride that is a transit traffic generator for the commuter market.

Few patrons make use of the park-and-ride. Of the 250 spaces, approximately 75 are used on an average weekday. While usage may increase upon implementation of MetroRapid, it is not likely to reach capacity.

Bus access to the NLTC is possible only from the east, as it is in the northwest quadrant of an interchange. The single entrance is a contributing factor of why buses often must travel through three or four signals to access the facility. Buses at NLTC utilize three bus bays for distributing passenger boarding volumes and bus traffic. Three routes utilize a bus island while the other routes serve the sheltered area. Buses operate through the facility in a clockwise direction.
The proposed ServicePlan2020 changes would implement adjustments to routes serving the facility in 2010. These include Routes 1, 101, 142, 300, 323 (new), 343 (new), 350 and 383. Routes 300, 343, 350 and 383 would terminate at North Lamar (Routes 174 and 240 would be replaced by new Route 343). In several years, Route 101 would be replaced by the N. Lamar MetroRapid route.
The following chart summarizes the ServicePlan2020 proposals for NLTC.

### Exhibit 6.6 – Proposed ServicePlan2020 Peak Period Service to North Lamar Transit Center

<table>
<thead>
<tr>
<th>Route</th>
<th>Frequency</th>
<th>Buses/Hour</th>
<th>Service Area</th>
<th>Areas Served</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10-15 min</td>
<td>4-6 NB 4-6 SB</td>
<td>Tech Ridge to Southpark Meadows</td>
<td>Metric, Lamar, UT, downtown, S.Congress</td>
</tr>
<tr>
<td>101 Limited</td>
<td>10-15 min</td>
<td>4-6 NB 4-6 SB</td>
<td>Tech Ridge to Southpark Meadows</td>
<td>N. Lamar, UT, downtown, S. Congress</td>
</tr>
<tr>
<td>142 Flyer</td>
<td>5 round trips peak direction</td>
<td>3</td>
<td>Amherst Dr to downtown</td>
<td>Metric, Parkview, N. Lamar TC, IH-35, UT</td>
</tr>
<tr>
<td>300 *</td>
<td>15 min</td>
<td>4</td>
<td>S Congress TC to N. Lamar TC</td>
<td>Pleasant Valley, Springdale, St. Johns, Highland Mall</td>
</tr>
<tr>
<td>323 (new)</td>
<td>30 peak/60 off peak</td>
<td>2 EB 2 WB</td>
<td>Techni Center to Northcross Mall</td>
<td>Loyola, Rutherford Walmart, Anderson Lane</td>
</tr>
<tr>
<td>343 (new)</td>
<td>30 peak/60 off peak</td>
<td>2</td>
<td>Tech Ridge to N. Lamar TC</td>
<td>Howard, Burnet, ACC, Metric, Rutland, Lamar</td>
</tr>
<tr>
<td>350 *</td>
<td>30 min</td>
<td>2 NB 2 SB</td>
<td>Riverside to N. Lamar TC</td>
<td>Airport Blvd, Highland Mall</td>
</tr>
<tr>
<td>383</td>
<td>30 peak/60 off peak</td>
<td>2</td>
<td>Lakeline to N. Lamar TC</td>
<td>Arboretum, Research Blvd</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>~39 / hr</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: * - also serves the Highland Mall Transit Center

### 6.3.2 Highland Mall Transit Center Operations Summary

The Highland Mall facility consists of on-street bus stops with shelters and is not a stand-alone facility for transit use only. It serves as a meeting point for several routes as well as a terminal. The transit center is located at the Highland Mall shopping center at West Highland Mall Drive & Jonathan Drive, just east of Airport Road. There are two bus stops at the transit center, with the main stop and terminal located eastbound on West Highland Mall Drive, and a smaller stop located southbound on Jonathan Drive. Three routes serve the Jonathan stop, depending on direction of travel. There are currently approximately 28 buses per hour serving the Highland Mall stop.
There are approximately 2,100 weekday boardings and 2,000 weekday alightings at the Highland Mall stop. The following chart summarizes ridership data collected in fall of 2008 for the Highland Mall stop.

**Exhibit 6.8 – Ridership at Highland Mall**

<table>
<thead>
<tr>
<th>Route</th>
<th>Northbound Boardings</th>
<th>Northbound Alightings</th>
<th>Southbound Boardings</th>
<th>Southbound Alightings</th>
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</thead>
<tbody>
<tr>
<td>7</td>
<td>Terminal</td>
<td>745</td>
<td>464</td>
<td>Terminal</td>
</tr>
<tr>
<td>10</td>
<td>172</td>
<td>157</td>
<td>180</td>
<td>214</td>
</tr>
<tr>
<td>300</td>
<td>131</td>
<td>342</td>
<td>356</td>
<td>201</td>
</tr>
<tr>
<td>320</td>
<td>Terminal</td>
<td>196</td>
<td>279</td>
<td>Terminal</td>
</tr>
<tr>
<td>339</td>
<td>104</td>
<td>43</td>
<td>44</td>
<td>144</td>
</tr>
<tr>
<td>350</td>
<td>80</td>
<td>153</td>
<td>153</td>
<td>83</td>
</tr>
<tr>
<td>Total Ridership</td>
<td>487</td>
<td>1,636</td>
<td>1,476</td>
<td>642</td>
</tr>
</tbody>
</table>
Based on observation, a portion of the ridership at the Highland Mall stop is destined to the mall itself, and the surrounding businesses. Based on the ridership pattern and observation of the site, the majority of passengers at the Highland Mall Transit Center are transferring between routes. In particular, transfers are taking place to and from the crosstown routes such as Routes 300, 339, and 350.

Currently, Routes 7, 10, 300, 320, 339 and 350 provide service to this facility, with Routes 7 and 320 terminating at this location. If the recommendations in ServicePlan2020 are implemented, in 2010, service to Highland Mall would be provided by Routes 7, 10, 300, 320 and 350. Routes 7 and 320 would be extended beyond Highland Mall and no routes would utilize this location as a terminal. Route 339 would be replaced by an extension of Routes 7 and 320.

It should be noted that extending Route 7 would directly serve a market currently served by Routes 320, 300, and 339 – which would remove the large number of transfers occurring between Route 7 and the three routes serving St. Johns. An estimated 300 boardings and 300 alightings at Highland Mall from Routes 300, 320, and 339 would be shifted to Route 7 – and the Route 7’s Highland Mall activity would be reduced by that amount as well.

The following chart summarizes ServicePlan2020 for Highland Mall.

### Exhibit 6.9 – ServicePlan2020 Peak Period Service to Highland Mall

<table>
<thead>
<tr>
<th>Route</th>
<th>Frequency</th>
<th>Buses / Hour</th>
<th>Service Area</th>
<th>Via</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>15 min</td>
<td>4 NB 4 SB</td>
<td>Bluff Springs to Rutherford Walmart</td>
<td>Riverside, downtown, UT, Duval, St. Johns</td>
</tr>
<tr>
<td>10</td>
<td>20-25 min</td>
<td>3 NB 3 SB</td>
<td>Southpark Meadows to Rundberg</td>
<td>S. 1st St, downtown, UT, Red River, Georgian Dr</td>
</tr>
<tr>
<td>300 *</td>
<td>15 min</td>
<td>4 NB 4 SB</td>
<td>S Congress TC to N. Lamar TC</td>
<td>Pleasant Valley, Springdale, St. Johns</td>
</tr>
<tr>
<td>320</td>
<td>30 min</td>
<td>2 EB 2 WB</td>
<td>Techni Center to Northcross Mall</td>
<td>Riverside, East Austin, Mueller, Cameron Rd, Koenig Lane</td>
</tr>
<tr>
<td>350 *</td>
<td>30 min</td>
<td>2 NB 2 SB</td>
<td>Riverside to N. Lamar TC</td>
<td>Airport Blvd</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>32 buses/hr</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: * - also serves the North Lamar Transit Center

### 6.3.3 Transfer Patterns at NLTC and Highland Mall

Both NLTC and the Highland Mall have large numbers of transfers. The public outreach and operators had multiple comments regarding the ease of transferring. Transfers between the frequent routes such as Route 1 or Route 300 were rarely mentioned – but transfers between some of less frequent routes were mentioned repeatedly.

We examined both warrants for timed transfers as well as the optimal location for such transfers. Several factors must be present to allow for a timed transfer:

- Headways (frequency) of routes must be equal.
- There must be sufficient space at the facility to accommodate vehicles.
- Mid-route waits should be avoided to ensure non-transferring passengers are not inconvenienced.
- Routes that terminate at a transit center are much easier to time for transfers than routes coming through a transit center in each direction.
• Transfers with a very short walk – preferably not across a busy street – are desirable for timed transfer purposes.
• It is exceedingly difficult to have timed transfers at multiple transit centers, particularly ones in close proximity.

The Highland Mall Transit Center is much less suited for timed transfers than the NLTC. After ServicePlan2020 recommendations are implemented, there will be no routes that end at the Highland Mall Transit Center – all routes will be through routes. In addition, many of the transfer movements require crossing a street – which in tight connections can lead to safety issues. Highland Mall also does not have the curb space available to allow for independent arrival and departure – something that would be required to allow the high frequency routes to pass through the transit center without waiting for a timed transfer.

The NLTC is better suited for timed transfers. After ServicePlan2020 changes are implemented, three routes will terminate there that have comparable frequencies– and adequate curb space to park buses is available. Moreover, there are separated islands that allow through-routes to continue to operate without being impacted by buses waiting for timed transfers. The walk distance between platforms is minimal. If timed transfers are designed at the NLTC, it effectively precludes the use of timed transfers at the Highland Mall Transit Center.

We recommend that Routes 343, 350 and 383 are the primary opportunities for timed transfers due to their terminating at NLTC and also the proposed 30- to 60-minute frequencies. These three routes should use the smaller island for both layover and timed transfer purposes as well as Route 300 that terminates at NLTC. All through-routes should use the main platform. Routes 1, 101, and 300 are frequent enough to not require a timed transfer. Route 323 is a through-route and would be very difficult to schedule a timed transfer in both directions. Route 142 is a peak-direction commuter route and would not be scheduled for timed transfers. This route would be scheduled based on the commuter arrival and departure time needs in downtown.

6.3.4 Future Capacity Needs at North Lamar Transit Center

ServicePlan2020 recommends significant changes to the number of buses and routes in at the NLTC. The proposed routes at NLTC fit into two categories: ‘Timed Transfer/Terminating Routes’, and ‘Pass-through Routes’. Based on the route category, the space needs are estimated.

**Route Assignments for Bay B – Timed Transfer and Terminating Routes 300, 343, 350, and 383**

For terminating and timed transfer routes, there is a need for a total of four stalls. Bay B currently has approximately 260 feet of curb space. The existing bay length will accommodate four stalls operating under a timed transfer scenario – where buses depart all at once in a pulse. It should be noted that stalls at Bay B would be unassigned – buses would line up in the order that they arrive and depart together. Bay B would accommodate approximately 10 buses per hour during peak times.

**Route Assignments for Bays A and C Routes 1, 101 (MetroRapid), 142, and 323**

Routes assigned to Bays A and C are pass-through routes, which means that they are not scheduled for more than a minute at the transit center.

Bay A should include northbound Routes 1, 101, and 142, as well as eastbound Route 323. Bay A would have up to 15 buses an hour using it.
Bay C should include southbound Routes 1, 101, and 142, as well as westbound Route 323. Bay C would have up to 15 buses an hour using it.

While current bus volumes may be accommodated by the NLTC, having several routes share bays may lead to customer confusion and at times capacity issues as more than three buses converge on a bay at one time. One way to expand bus capacity at the NLTC and reduce travel time on Routes 1, 101, and the future MetroRapid route is to install a new bus stop southbound on Lamar Blvd adjacent to the transit center. This would minimize construction cost, provide additional capacity in an underutilized space, eliminate route deviations through the transit center and speed up the southbound trips.

### 6.3.5 Assessment of Consolidating NLTC and Highland Mall Functions

While the existing NLTC can accommodate some timed transferring, a larger facility where timed transfers for passengers and layover for operators can take place is necessary in North Austin to facilitate mobility for existing and future Capital Metro patrons. The two existing locations are examined for expansion.

**Highland Mall Assessment**  
The Highland Mall stop generates significant ridership as a major destination however the location is not adequate to function as a terminal and layover area for converging routes due to its on-street location and shared space with automobile traffic. Customers would be required to cross busy streets to make transfer connections and there is insufficient curb space available for independent arrival and departure of a multitude of buses. Also, all routes serving Highland Mall would be pass-through routes and not require layover space under ServicePlan2020.

Routes serving both the NLTC and the Lamar corridor would require a lengthy deviation to serve a Highland Mall transit center location. It is important to remain on the Lamar Blvd corridor, as this is where the trunk line high-frequency routes operate and Lamar Blvd is the corridor for a future MetroRapid route. Minimizing deviations from Lamar Blvd is essential to maintaining reliable and fast service while attracting new riders.

**North Lamar Transit Center Assessment**  
The North Lamar Transit Center is a major transfer point for several routes. Customers have a short walk to either platform, and there is weather protection. The North Lamar Transit Center has the ability to accommodate some timed transfers and layover. On the other hand, the North Lamar Transit Center is near capacity, and there is insufficient curb space to effectively stage many more routes out of this facility.

Routes serving Highland Mall, but not the NLTC would require a lengthy deviation to serve the NLTC transit center location, and between Routes 300 and 350 there are at least 6 buses an hour connecting these two points.

**Transit Center Consolidation Assessment**  
Based on these factors, a full consolidation of the two facilities is not recommended; however consideration could be given to moving North Lamar Transit Center for several reasons:

- It is in an isolated location and hard to access
- Bus routing is convoluted and adds travel time
- The parking facility is underutilized while requiring on-going maintenance with minimal return in ridership
• Interaction with MetroRail could be facilitated

Relocating the facility further south, for example near the Crestview Station, could improve mobility by providing transit facilities adjacent to each other and the subsequent multi-modal connections. In addition, locating near Crestview would provide easy transit access for area residents from nearby multi-family housing, and potentially attract new riders. The environment would also feel safer for customers as it would be in a visible and easily-accessible location. It should be noted that the existing facility at Crestwood station is entirely unsuited to act as a transit center and should not be considered for this.

Moving the NLTC south to the Crestview area should require only minimal adjustments to routes terminating at NLTC. This location could likely be within walking distance for some customers destined to Highland Mall, but they could also easily transfer for a frequent, short ride. The need for park and ride space is questionable since there is very little usage at the current location (75 stalls out of 250 used on an average weekday) and the neighborhood may raise objections. The level of demand at the existing NLTC suggests that opportunities for shared parking at a new facility would be a more cost effective way of handling the park-and-ride market at this location.

Conclusions
If a new stand-alone transit center were constructed in North Austin directly adjacent to N. Lamar Boulevard to replace the North Lamar Transit Center, it could solve several operational issues. First, it could accommodate more routes doing a timed transfer—particularly during evening times and Sundays when frequencies on more than just Routes 350, 343, and 383 are reduced to hourly service. Second, it could save Route 1, 101, and the future MetroRapid bus up to eight minutes of round trip travel time by having stops on North Lamar Boulevard instead of circling circuitously into a transit center. It should be noted that being directly adjacent to N. Lamar and one of the proposed MetroRapid stops is critical for the success of this facility. Last, it could provide a connection to MetroRail – if it were placed within walking distance of the Crestview Station.

6.3.6 Capacity Needs of a New North Austin Transit Center

As shown in Chapter 6.3.5, there are advantages to a new North Austin Transit Center. While ServicePlan2020 does not specifically recommend a location to shift the NLTC to, it does recommend the potential number of bays necessary to accommodate future demand. An anticipated 10 routes could serve the revised transit center.

Of the existing NLTC routes, Routes 142 and 323 would not deviate to the new location, but Route 10 could be added due to its close proximity on Guadalupe Street. Routes 161 and 320 should also be considered due to the close operating proximity, depending on the length and/or complexity of the deviation that may be required. Although the Night Owl service would not connect with any other services, Route 481 should also serve the transit center to provide an easy-to-understand focal and meeting point for riders.

Routes 1 and 101 (and the future MetroRapid) buses would stop on-street on North Lamar Boulevard. In the northbound direction, the bus stop would have an easy transfer to the transit center platforms. In the southbound direction, a crossing of North Lamar Boulevard would be necessary. Due to the frequency of Routes 1, 101, and MetroRapid, no timed transfer to/from these routes is anticipated, nor is it needed.

A total of 9 bays with independent arrival and departure should be considered for this proposed transit center location.
Exhibit 6.10 – ServicePlan2020 Routes at New Location near Crestview Station

<table>
<thead>
<tr>
<th>Route</th>
<th>Maximum Bays Needed</th>
<th>Note</th>
</tr>
</thead>
</table>
| 1     | 1 – northbound on N Lamar  
        1 – southbound on N Lamar | Pass through |
| 10    | 2 – northbound and southbound | Pass through |
| 101   | Uses the same stops as Route 1 | Pass through |
| 161   | 1 – use paratransit bay | Potential depending on deviation length |
| 300   | 1 | Terminal |
| 320   | 2 – northbound and southbound | Potential depending on deviation length |
| 343   | 1 | Terminal - minor route extension |
| 350   | 1 | Terminal |
| 383   | 1 | Terminal - minor route extension |
| 481   | 0 – can use any bay | Night Owl |
| **Total** | **9 Transit Center Bays & 1 Northbound and 1 Southbound Superstop on N. Lamar** | |

6.4 Downtown Austin Transit Center Assessment

A properly placed transit center can address some of the need for passenger waiting space. But it can also have many other functions. The addition of a transit center located in downtown could provide the following improvements:

1. **Additional Space for Passengers**
   This would be an important feature of a transit center in downtown Austin. There should be passenger amenities such as shelters, benches, and route information. Restrooms may also be considered.

2. **Space for Bus Layovers**
   Many layover locations at the end of some routes are not ideal and routing decisions are being made due to restroom locations for operators. This would provide an alternative. Restrooms for Capital Metro drivers and staff can be provided at a downtown transit center.

3. **Base for Security Staff**
   A downtown transit center would need adequate security. If a building were built as part of a transit center, then it could house and provide office space for security personnel.

4. **Pass/Ticket Sales and Passenger Information**
   A customer service outlet at a downtown transit center could also be provided - replacing the office on Congress Avenue. This would be a very convenient location for most passengers.

5. **Public Meeting Space**
   A meeting room in a downtown Austin would make public meetings easier to attend.

6. **Commercial Space / Redevelopment**
   Space for private business to lease can also be provided for coffee shops, restaurants, newspaper stands, etc. as well as allow for potential other uses such as office or mixed use development.

7. **Multi-Modal Point of Transit Service**
   A transit center would be the focal point for all current and future forms of transit in downtown Austin – which not only facilitates transfers between modes, but also creates a marketable connection.

In addition to the many operational improvements and added passenger amenities, a properly designed downtown transit center will improve Capital Metro’s image and increase its awareness in the community. An attractive transit center can become a symbol of a high quality transit service. Its image...
can be used in advertising and marketing efforts. It can also improve and enhance urban design in the area that it is located.

In order to operate effectively, a downtown transit center must be located immediately adjacent to either Guadalupe or Lavaca Streets – preferably next to an existing major stop around 8th Street or 4th Street. To minimize delays to existing through customers, all north/south through-routes would serve the transit center area on-street. All routes travelling through downtown on the Guadalupe / Lavaca corridor would not deviate into the transit center. The only routes stopping in the actual transit center would be those terminating in downtown. Express and Flyer routes should operate along Congress in both north and south directions.

A downtown transit center can help address both operational and passenger challenges. The Downtown Austin route restructure could be enhanced by a downtown transit center, but it is not a requirement.

We recommend a phased implementation plan. The first priority should be to implement the Guadalupe / Lavaca Street transit corridor plan. This should occur prior to 2015. Concurrently, a funding plan should be developed to leverage existing revenue sources, grant funding, and potential earmarks to fund the siting and construction of a downtown transit center. We anticipate that with appropriate planning, funding may be available for the downtown transit center after 2015. If funding is available earlier, implementation of a downtown transit center may be accelerated.

A further discussion of potential transit center locations follows:

6.4.1 Assessment of Five Different Downtown Austin Transit Center Locations

Five different locations in downtown Austin were selected for analysis. These locations were selected because they are on the proposed Guadalupe/Lavaca transit corridor, they are adjacent to proposed stops for MetroRapid, and a very cursory assessment of land use indicated that these locations may be available. The five locations are:

- Full block bordered by Guadalupe, 10th, Lavaca, and 11th – eight bus stalls;
- Full block bordered by Guadalupe, 9th, Lavaca, and 10th – eight bus stalls;
- Full block bordered by San Antonio, 4th, Guadalupe, and 3rd – eight bus stalls.
- Full block bordered by San Antonio, 5th, Guadalupe, and 6th – eight bus stalls.
- Half block bordered by Guadalupe, 5th, and Lavaca - eight bus stalls.
Exhibit 6.11 – Potential Downtown Austin Transit Center Locations

Each of the five potential transit center locations was assessed with the following criteria:

- **Bus Capacity** – How many buses can realistically be expected to use the facility?
- **Bus Operating Costs** – This reflects the time spent going into and out of a transit center, and how much additional time, if any, is required. The bus operating costs are calculated from the number of projected trips into the facility and the time spent making the deviation. Costs are expressed in hours. The base scenario for costs assumes the implementation of the Guadalupe/Lavaca transit corridors.
- **Ease of Transfers** – How easy is it to transfer from one route to another? Is it cross platform, or do you have to cross multiple streets?
- **Joint Development Potential** – Is the block available for joint development and if so, what kind of joint development.
• Traffic impacts – Will the location have negative impacts on traffic operations on either Guadalupe / Lavaca Streets or on the side streets?

Bus Volume Assumptions
On weekdays, approximately 1,250 weekday bus trips are projected to travel through downtown on the Guadalupe / Lavaca street pair. Of these, approximately 450 trips travel northbound on Guadalupe Street, 450 trips travel southbound on Lavaca Street, and 350 end in downtown.

Exhibit 6.12 – Daily Bus Volumes on Downtown Streets

<table>
<thead>
<tr>
<th>Route</th>
<th>Trips on Guadalupe / Lavaca</th>
<th>Trips Terminating in Downtown</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weekday</td>
<td>Sat</td>
</tr>
<tr>
<td>1</td>
<td>108</td>
<td>73</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>96</td>
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<td>5</td>
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<td>6</td>
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<td>135</td>
<td>78</td>
</tr>
<tr>
<td>Totals</td>
<td>927</td>
<td>585</td>
</tr>
</tbody>
</table>

The routes ending in downtown are the routes currently ending in downtown. It may be possible for some, if not all, of these routes to be interlined with each other to reduce amount of necessary downtown recovery and layover. For the purposes of this analysis, we will assume that routes currently ending in downtown will continue to do so.

6.4.1.1 Transit Center Bordered by Guadalupe, 9th, Lavaca, and 10th
This location is envisioned as a full-block transit center, with a center island that can accommodate up to eight buses. For the purposes of this analysis, we assumed an east-west orientation, so buses can use either Guadalupe or Lavaca Streets to access the facility.

We examined the possibility of a north/south orientation and routing all Capital Metro buses on the Guadalupe / Lavaca corridor into the facility, but this is not feasible for the following reasons:
Projected bus volumes are higher than can be accommodated by the facility. The capacity constraint includes both platform length as well as the inability to move 30-40 buses per hour in each direction in and out of the facility effectively. The short block lengths and resultant lack of storage space are the issue.

Buses not terminating at this facility would need to shift from the curb lane on Guadalupe or Lavaca Streets over three lanes to turn into the facility. This would be difficult, and would remove buses from any potential curb bus lane.

The cost of routing all buses into the facility, including those travelling through downtown on Guadalupe / Lavaca Streets would add at least 2 minutes of travel time to every trip, due to the multiple turns and intersection delay. This equates to approximately 10,000 in additional annual hours.

With only terminating routes going directly into the transit center, a total of approximately 350 daily buses are projected to use the downtown transit facility. Approximately 450 daily bus trips are projected to use the southbound stop on Guadalupe Street adjacent to Woodridge Park between 10th and 9th Streets, and another 450 daily bus trips are projected to use the northbound stop on Lavaca between 10th and 9th Streets. The stops on Guadalupe and Lavaca Streets allow for access to the transit center and its facilities with only one street crossing.

**Bus Capacity**

Between 25 and 30 buses per hour on nine local routes are projected to terminate in downtown transit center during weekday peak hours. Eight bays are sufficient to accommodate these movements and allow for recovery time and a restroom break. It is also sufficient to stage commuter service, if necessary.

**Ease of Transfers**

Under this concept, all local and terminating routes would be within a one walk block of each other, with a maximum of two street crossings. In an urban environment, this is excellent. Transfers would be significantly easier than what is possible today.

**Traffic Impacts**

Turning movements into and out of the transit center would be from Guadalupe and Lavaca Streets. Buses that terminate downtown that are coming southbound on Guadalupe Street would turn left directly into transit center and exit heading northbound on Lavaca Street. Likewise, terminating buses coming northbound on Lavaca Street would turn left directly into the transit center prior to heading southbound on Guadalupe Street. Routes from the north would be positioned to make turns to/from 11th Street, while routes from the south would use the Guadalupe/Lavaca corridor to access 5th/6th Streets, and Cesar Chavez. Overall, the number of turns would be less than what is currently being done with the Colorado / Brazos corridor pattern, as is the number of stop controlled intersection. Overall, traffic flow and impacts due to buses would be reduced as a result of this transit center location.

Buses would leave the proposed transit center in an uncontrolled intersection. Buses would need to wait for gaps in traffic on both Guadalupe and Lavaca Streets. The signal at the Guadalupe/10th intersection would effectively control egress onto Guadalupe Street while the signalized intersection of Lavaca/9th would control egress onto Lavaca Street.
Exhibit 6.13 – Proposed Routing for Site Bordered by Guadalupe, 9th, Lavaca, and 10th

![Map of proposed routing](image)

Note: the layout of the transit center and bays can take multiple forms. This is an illustration of one potential alternative.

**Bus Operating Costs**
The Guadalupe / Lavaca corridor improvements are assumed to have been completed prior to the construction of this transit center. This transit center location would increase annual hours by up to 1,750 hours annually over operating without a transit center. The primary reason for this is several routes from the south would have to travel several blocks further north – which increases the operating costs.

**Joint Development Potential**
This location is in the Capital view corridor, which limits the height of any development on this block. Given the height restrictions, it may not be realistic to expect any significant joint development at this site - at least not several stories of joint development.

**Urban Rail Integration**
Currently, urban rail corridors are being examined within downtown Austin. Several options are being considered, including using the Guadalupe and Lavaca street pair. Other options include Congress Avenue and going east of the Capital. It is not clear whether this transit center location will be served by urban rail.

**Potential Fatal Flaws**
None

**6.4.1.2 Transit Center Bordered by Guadalupe, 11th, Lavaca, and 10th**
This location is envisioned as a full-block transit center, with a center island that can accommodate up to eight buses. For the purposes of this analysis, we assumed an east-west orientation so buses can use either Guadalupe or Lavaca Streets to access the facility. The traffic volumes on 11th Street preclude the
operation of a north-south type island. With only terminating routes going directly into the transit center, a total of approximately 350 daily buses are projected to use the downtown transit facility.

Approximately 450 bus daily bus trips are projected to use the southbound stop on Guadalupe Street. The closest stop to this proposed location is between 11th and 10th Streets. This stop was selected to complement this proposed transit center location.

Another 450 daily bus trips are projected to use the northbound stop on Lavaca Street. We examined the possibility of placing the stop between 11th and 10th Streets, which would be optimal from a walking environment as it minimizing street crossings between transfers. However, due to the Governor’s Mansion, we did not believe it was feasible to place a major bus stop on that block. Thus, we assumed that both local bus service and MetroRapid service heading north and southbound on Lavaca Street would use the stop between 10th and 9th Streets.

**Bus Capacity**
Between 25 and 30 buses per hour on nine routes are projected to terminate in downtown transit center during weekday peak hours. Eight bays are sufficient to accommodate these movements and allow for recovery time and a restroom break. It also allows for staging of commuter service in addition to local routes.

**Ease of Transfers**
Under this concept, all local and terminating routes would be within a one and a half (1.5) block of each other, with a maximum of three street crossings. Significant pedestrian volumes would be added in front of the Governors’ Mansion, as passengers walked from the stop on Lavaca Street between 9th and 10th Streets to the transit center. The additional street crossing is likely to increase transfer time by at least one minute over the alternative location to the south at 9th/Lavaca/10th/Guadalupe, which may have negative impacts for passengers.

**Traffic Impacts**
Turning movements into and out of the transit center would be from Guadalupe and Lavaca. Vehicles coming southbound on Guadalupe Street would turn around and exit heading northbound on Lavaca Street, and buses coming northbound on Lavaca Street to the transit center would exit heading southbound on Guadalupe Street.

Buses would leave the proposed transit center in an uncontrolled intersection. Buses would need to wait for gaps in traffic on both Guadalupe and Lavaca Streets. The signal at Guadalupe/11th would effectively control egress onto Guadalupe Street while the signal at Lavaca/10th would control egress onto Lavaca Street.

Bus routes destined to eastbound 11th Street will have the challenge of crossing three lanes and hoping that the queue for northbound right turns is short enough for buses to access. The proximity to 11th Street – and the resultant lack of storage capacity – will make movements from the transit center to eastbound 11th Street difficult, if not impossible.
Bus Operating Costs
The Guadalupe / Lavaca corridor improvements are assumed to have been completed prior to the construction of this transit center. This transit center location would cause an increase in annual hours of up to 1,750 hours annually over operating without a transit center. The primary reason for this is several routes from the south would have to travel several blocks further north – which increases the operating costs.

Joint Development Potential
This location is in the Capital view corridor, which limits the height of any development on this block. Given the height restrictions, it may not be realistic to expect any significant multi-story joint development at this site.

Urban Rail Integration
Currently, urban rail corridors are being examined within downtown Austin. Several options are being considered, including using the Guadalupe and Lavaca street pair. Other options include Congress Avenue and going east of the Capital. It is not clear whether this transit center location will be served by urban rail.
Potential Fatal Flaws

- Pedestrian access adjacent to the Governor’s Mansion
- Turning movements from the transit center to eastbound 11th Street are extremely difficult
- This location is in the Capitol view corridor, which mandates height restrictions – and thus limits joint development opportunities.

6.4.1.3 Transit Center Bordered by Guadalupe, 3rd, San Antonio, and 4th Streets

This location is currently a parking lot south of Republic Park. The proposed transit center would take up to a full-block and have several islands to accommodate layover for up to eight different buses at a time. Access would be via 3rd and 4th Streets. Depending on the ultimate configuration, at least half of this block could be used for joint development purposes.

Exhibit 6.15 – Proposed Routing for Site Bordered by Guadalupe, 3rd, San Antonio, and 4th

![Diagram of transit center routing]

Note: the layout of the transit center and bays can take multiple forms. This is an illustration of one potential alternative.

Bus Capacity

Between 25 and 30 buses per hour on nine routes are projected to terminate in downtown transit center during weekday peak hours. Eight bays are sufficient to accommodate these movements and allow for recovery time and a restroom break, future expansion, and staging of commuter routes.

Bus Operating Costs

The Guadalupe / Lavaca corridor improvements are assumed to have been completed prior to the construction of this transit center. This transit center location would increase the number of hours required for annual operation by 4,750 hours over operating without a transit center. The primary reason for...
for this is several routes from the north would have to travel several blocks further south – which increases the operating costs.

**Ease of Transfers**
Under this concept, all local and terminating routes would be within a block and a half (1.5) of each other, with a maximum of two street crossings. In an urban environment, this is excellent. Transfers would be significantly easier than what is possible today.

**Traffic Impacts**
Turning movements into and out of the transit center would be from 3rd and 4th Streets. Vehicles coming southbound on Guadalupe Street would turn right on 3rd Street, north into the transit center, and then exit onto 4th Street. Likewise, vehicles heading northbound on Lavaca Street would utilize 3rd Street to access the transit center and use 4th Street to exit. Due to the one-way street pattern, it is highly likely that 4th Street will have bus queuing issues in the eastbound direction as buses exit the transit center. Addressing this potential problem is one of the reasons for having transit center access on San Antonio Boulevard.

Overall, this transit center location would have less turns would be less than what is currently being done with the Colorado / Brazos corridor pattern.

**Joint Development Potential**
It does not appear that there are any development restrictions for this site. Depending on the ultimate transit center configuration, it appears that at least half of this block may be used for joint development purposes. In addition, the air rights over the transit center would be available.

**Urban Rail Integration**
Currently, urban rail corridors are being examined within downtown Austin. Several options are being considered, including an east-west line along 4th or 5th Street. If rail were implemented on either 4th or 5th Streets, this facility would be well situated for transfers. However, at this time, it is not clear whether this transit center location will be served by urban rail.

**Potential Fatal Flaws**
Turning movements from the transit center to eastbound 4th Street may overload the queuing capacity of the intersection of Guadalupe / 4th Streets.

**6.4.1.4 Transit Center Bordered by Guadalupe, 5th, San Antonio, and 6th Streets**
This location is currently the post office north of Republic Park. The proposed transit center would take up to a full-block and have several islands to accommodate layover for up to eight different buses at a time. Access would be via 5th and 6th Streets.
Exhibit 6.16 – Proposed Routing for Site Bordered by Guadalupe, 5th, San Antonio, and 6th

Note: the layout of the transit center and bays can take multiple forms. This is an illustration of one potential alternative.

**Bus Capacity**
Between 25 and 30 buses per hour on nine routes are projected to terminate in downtown transit center during weekday peak hours. Eight bays are sufficient to accommodate these movements and allow for recovery time and a restroom break, and future expansion. It also allows for staging of commuter routes.

**Bus Operating Costs**
The Guadalupe / Lavaca corridor improvements are assumed to have been completed prior to the construction of this transit center. This transit center location would increase the number of hours required by up to 3,800 annually over operating without a transit center. The primary reason for this is several routes from the north would have to travel several blocks further south and some of the routes operating from the south would need to head west by a block – both of which increase the operating costs.

**Ease of Transfers**
Under this concept, all local and terminating routes would be within two blocks of each other, with a maximum of three street crossings. In an urban environment, this is good. Transfers would be significantly easier than what is possible today, although not as good as some of the other alternatives.

**Traffic Impacts**
Turning movements into and out of the transit center would be from 5th and 6th Streets. Vehicles coming southbound on Guadalupe Street would turn right on 6th Street and south into the transit center, and then
exit onto eastbound 5th Street. Likewise, vehicles heading northbound on Lavaca Street would utilize 6th Street to access the transit center and use 5th Street to exit. Due to the one-way street pattern, it is highly likely that 5th Street will have bus queuing issues in the eastbound direction as buses exit the transit center.

Overall, this transit center location would have less turns would be less than what is currently being done with the Colorado / Brazos corridor pattern.

**Joint Development Potential**

It does not appear that there are any development restrictions for this site. It appears that half of the block could be utilized for joint development purposes. In addition, the air rights over the transit center would be available.

**Urban Rail Integration**

Currently, urban rail corridors are being examined within downtown Austin. Several options are being considered, including an east-west line along 4th or 5th Street – which would serve this facility. It is not clear whether this transit center location will be served by urban rail.

**Potential Fatal Flaws**

Turning movements from the transit center to eastbound 5th Street may overload the queuing capacity of the intersection of Guadalupe / 5th Streets – as this intersection already has queuing issues during peak hours.

**6.4.1.5 Transit Center Bordered by Guadalupe, 5th, and Lavaca Streets**

This location is currently an office building with a parking garage underneath it. It appears possible to route buses through the parking garage’s bottom level without impacting access to the other parking floors. This transit center alternative would be squeezed into the existing garage space. Access would be from Guadalupe Street from the north, and to Lavaca Street heading north. The proposed transit center would have several islands to accommodate layover for up to 8 different buses at a time. Access would be via 5th and 6th Streets.

It is unclear whether ventilation, pavement depth, or height of the garage roof will accommodate large numbers of buses. The size of passenger waiting areas will be constrained by the existing site geography and the support beams running throughout the length of the platform. The support beams may in some cases be in the same places where bus doors would be placed, which could reduce the capacity of this site.
Exhibit 6.17 – Proposed Routing for Site Bordered by Guadalupe, 5th, and Lavaca

Note: the layout of the transit center and bays can take multiple forms. This is an illustration of one potential alternative.

**Bus Capacity**
Between 25 and 30 buses per hour on 9 routes are projected to terminate in downtown transit center during weekday peak hours. Eight bays are sufficient to accommodate these movements and allow for recovery time and a restroom break, and future expansion.

**Bus Operating Costs**
The Guadalupe / Lavaca corridor improvements are assumed to have been completed prior to the construction of this Transit Center. This Transit Center location would increase the number of hours operated by Capital Metro by up to 3,500 annually over operating without a transit center. The primary reason for this is several routes from the north would have to travel several blocks further south and some of the routes operating from the south would need to head west by a block – both of which increase the operating costs.

**Ease of Transfers**
Under this concept, all local and terminating routes would be within one block of each other, with a maximum of two street crossings. This is the shortest walk distance of any alternative, but an additional street crossing may be needed. Transfers would be significantly easier than what is possible today.
Traffic Impacts
Turning movements into the transit center would be from Guadalupe Street only. Egress would be onto northbound Lavaca Street. Routes coming from the south would need to loop around the block, potentially adding several minutes of travel time while literally adjacent to the facility. 5th and 6th Streets in this vicinity are very heavily trafficked – with queues at both Guadalupe and Lavaca Streets being common.

There will be significant conflicts for egressing buses with right-turns onto Lavaca Street from 5th Street. Sight distance for buses will be very limited upon egressing.

Overall, this transit center location would have less turns would be less than what is currently being done with the Colorado / Brazos corridor pattern.

Joint Development Potential
This site represents an already existing joint development. The space above the bus bays is already either parking or office space. Capital Metro will have solved its downtown transit center issue without taking up a valuable downtown property.

Urban Rail Integration
Currently, urban rail corridors are being examined within downtown Austin. Several options are being considered, including an east-west line along 4th or 5th Street – which would directly serve this. However, at this time, it is not clear whether this transit center location will be served by urban rail.

Potential Fatal Flaws

- Pavement depth in the existing garage may not be able to handle bus traffic
- Due to low ceiling ventilation for buses in the garage may be problematic
- The low ceiling increases the perception of a claustrophobic
- Rider services on the ground floor may be constrained as the site is full
- Multiple turns from the south will be necessary to access the facility
- Busy surrounding streets may lead to queuing issues

6.4.2 Downtown Austin Transit Center Assessment Conclusions
All of the five different locations examined as a result of this effort were feasible from an operations standpoint. None of the locations are able to accommodate all of the buses operating on Guadalupe and Lavaca Streets. However, all locations can accommodate all routes terminating in downtown Austin. And all transit center sites would facilitate transfers within downtown Austin to a two block walk or less.

All locations would require more annual hours of service to operate than the Guadalupe / Lavaca corridor plan without transit centers. More resources are required to serve sites further south than the sites to the north because more terminating routes are coming from the north.

The two sites on 9th/10th/11th Streets have very limited joint development potential due to the Capital view corridor. It may not be possible to put any type of development on top of a proposed transit center at these sites.

The location bounded by Guadalupe/9th/Lavaca/10th Streets had less potential impacts than the other locations. Transfers were easy and the traffic impacts were the least. All other locations had significant traffic impacts that reduce the appeal of these sites.
## Exhibit 6.18 – Proposed Downtown Austin Transit Center Location Assessment Summary

<table>
<thead>
<tr>
<th>Location</th>
<th>Max Bus Capacity</th>
<th>Ease of Transfers</th>
<th>Traffic Impacts</th>
<th>Rail Integration</th>
<th>Service Impact (Annual Hrs)</th>
<th>Potential Joint Development</th>
<th>Fatal Flaw?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guadalupe, 9&lt;sup&gt;th&lt;/sup&gt;, Lavaca, and 10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>8 buses at once</td>
<td>Excellent</td>
<td>Medium</td>
<td>Not likely</td>
<td>1,750 hrs</td>
<td>Limited due to Capital view corridor</td>
<td>None</td>
</tr>
<tr>
<td>Guadalupe, 10&lt;sup&gt;th&lt;/sup&gt;, Lavaca, and 11&lt;sup&gt;th&lt;/sup&gt;</td>
<td>8 buses at once</td>
<td>Very Good</td>
<td>High – Queuing</td>
<td>Not likely</td>
<td>1,750 hrs</td>
<td>Limited due to Capital view corridor</td>
<td>- Governor’s Mansion &amp; pedestrian access</td>
</tr>
<tr>
<td>Guadalupe, 3&lt;sup&gt;rd&lt;/sup&gt;, San Antonio, and 4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>8 buses at once</td>
<td>Excellent</td>
<td>High – Queuing</td>
<td>Likely</td>
<td>4,750 hrs</td>
<td>Good – up to half block available</td>
<td>- Queuing on 4&lt;sup&gt;th&lt;/sup&gt; Street at Guadalupe</td>
</tr>
<tr>
<td>Guadalupe, 5&lt;sup&gt;th&lt;/sup&gt;, San Antonio, and 4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>8 buses at once</td>
<td>Very Good</td>
<td>High – Queuing</td>
<td>Likely</td>
<td>3,850 hrs</td>
<td>Good – up to half block available</td>
<td>- Queuing on 4&lt;sup&gt;th&lt;/sup&gt; Street at Guadalupe</td>
</tr>
<tr>
<td>Half Block Guadalupe, 5&lt;sup&gt;th&lt;/sup&gt;, Lavaca</td>
<td>8 buses at once</td>
<td>Excellent</td>
<td>High – Queuing &amp; Sight distance</td>
<td>Likely</td>
<td>3,450 hrs</td>
<td>Excellent – it already exists</td>
<td>- Can buses fit in garage?</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>- Queuing on 5&lt;sup&gt;th&lt;/sup&gt; Street at Guadalupe</td>
</tr>
</tbody>
</table>