Atlanta Downtown Commuter Bus Routing and Infrastructure Study

Existing Conditions

prepared for

CAP/ADID

prepared by

Cambridge Systematics, Inc.

January 18, 2021

www.camsys.com

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Cambridge Systematics, Inc.
730 Peachtree Street, NE, Suite 500
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date

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1.0 Introduction

The Greater Atlanta Region is the cultural, economic, and logistic hub of the southeastern United States, with Downtown Atlanta serving as the nexus of this critical region. Downtown Atlanta is incredibly compact, attracting hundreds of thousands of residents and visitors every day, commuting to work, school, or other destinations from the wider region. As a major employment center, numerous commuter bus routes are operated by three agencies which carry passengers between downtown and the suburbs. These buses operate in this constrained area with little to no dedicated infrastructure, resulting in congestion, operational conflicts and delays for buses and passenger cars alike. Meanwhile, the street network in Downtown needs to comfortably and safely accommodate a range of modes and trips, including pedestrians, bicyclists, streetcar, local buses, trucks, and general traffic. Coordinating infrastructure and operations can help alleviate conflicts and improve operations for everyone traveling in and through Downtown.

Commuter bus operations bring unique challenges in transit planning: peak-of-the-peak, highly directional services competing for right-of-way with personal vehicles. The long-distance nature of commuter bus service also heightens the need for staging areas that do not impede traffic while allowing the routes to operate safely, reliably and on schedule. This document highlights the existing commuter bus routing and infrastructure conditions in Downtown Atlanta, identifying the gaps, challenges, and needs for improving commuter bus routing through the area. The sections in this document include:

- **Downtown Atlanta Overview:** A high-level overview of the existing and future conditions in Downtown Atlanta, including the anticipated future development and transportation projects that could influence commuter bus service.
- **Commuter Bus Services:** An overview of the transit agencies operating in Downtown Atlanta and their services and ridership.
- **Operating Challenges:** Operating challenges that have been identified for commuter bus service, based on analysis of existing conditions and stakeholder feedback.
- **Summary of Needs and Next Steps:** Overview of the primary needs for improving commuter bus service in Downtown.

2.0 Downtown Atlanta Overview

This study focuses on a 3.5 square-mile area in Downtown Atlanta bounded by North Avenue to the north, I-20 to the south, Boulevard to the east and Northside Drive to the west (Figure 2.1). Within this compact district, travelers are served by the convergence of three interstate highways, four rail lines, a streetcar, and a dense network of buses, including local services operated by Metropolitan Atlanta Rapid Transit Authority (MARTA) and commuter services provided by CobbLinc, Gwinnett County Transit (GCT), and the "Xpress" brand operated by the Atlanta Regional Transit Link Authority or the ATL. The ATL oversees transit planning across the 13-county Atlanta region and works in partnership with CobbLinc, GCT, MARTA, and other agencies to enhance transit connectivity across the region.

Within this boundary, Downtown welcomes approximately 162,000 employees each day to destinations including the Georgia State Capitol, Georgia State University, Grady Memorial Hospital, Peachtree Center, Five Points and the Centennial Park District. As noted in the 2019 Georgia Commute Options Regional Commuter Survey, approximately 7 percent of survey respondents chose to commute by transit, with 14 percent of respondents who drove alone noting that they could use transit to commute.[1] As the Metro Atlanta Region is projected to support 3.6 million jobs in 2040, access to commuter bus services and fixed transit remains critical.

[1] 2019 Georgia Commute Options Regional Commuter Survey: https://cdn.atlantaregional.org/wp-content/uploads/2019-rcs-public-report-final.pdf.

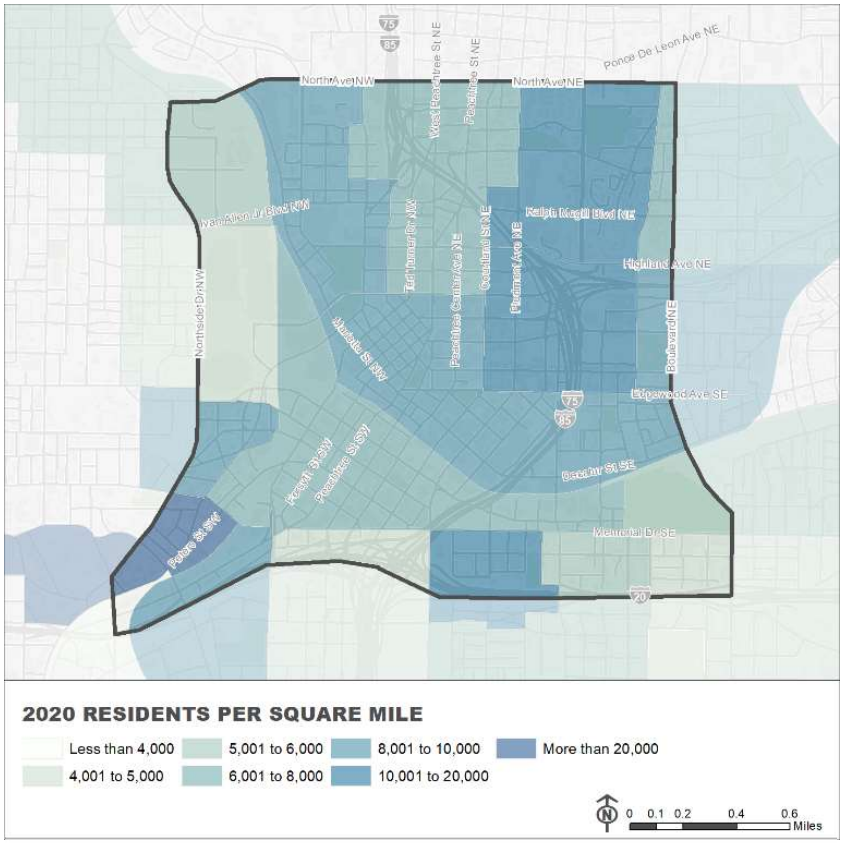
Figure 2.1 Downtown Atlanta Study Area

2.1 Existing and Future Population

Downtown Atlanta is vital for the region's continuing growth, serving as the center for regional employment and expanding residential developments taking advantage of the high density of jobs, entertainment, transportation options, and visitors. The Greater Atlanta Metro Region is projected to grow from 5.97 million residents in 2020 to 7.89 residents in 2040, a 32 percent increase.[2] Downtown Atlanta is expected to grow even faster during the same time period, from 60,000 residents in 2020 (Figure 2.2) to 91,400 residents in 2040 (Figure 2.3), a 52 percent increase. This growth in population will reshape downtown from a job center to mixed-use communities where residents can live, work, and play. In support of these changes, infrastructure improvements will be needed to ensure that Downtown Atlanta provides its residents with a range of multimodal transportation options.

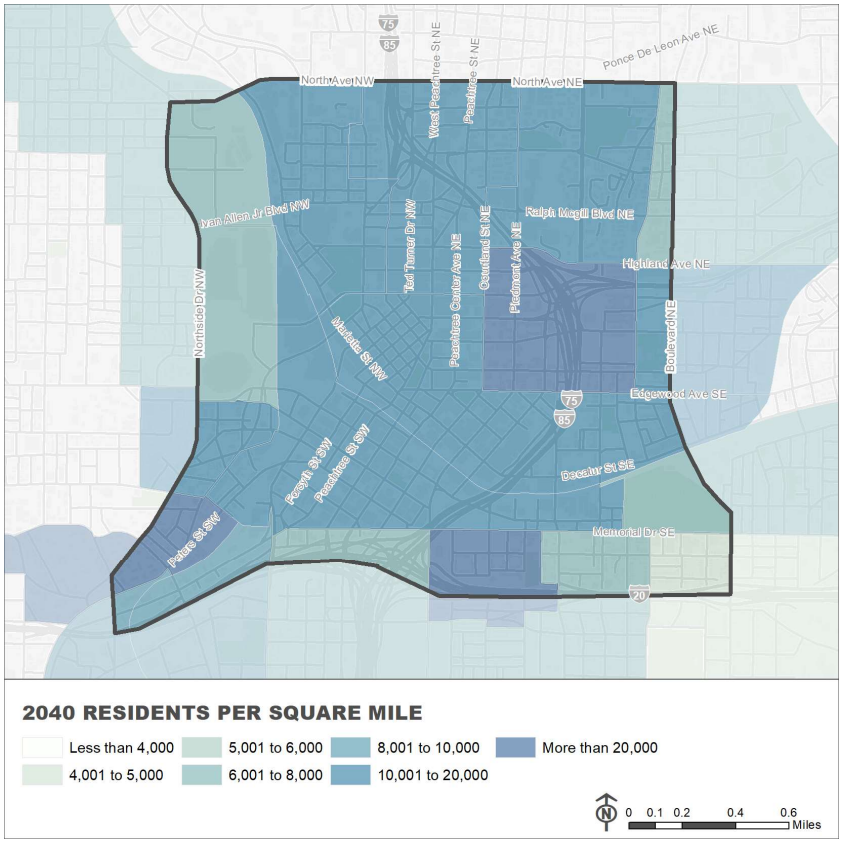
[2] Atlanta Regional Commission (ARC) Population Forecast series13.

Figure 2.2 Downtown Atlanta 2020 Population, by Census Tract



Source: ARC Population Forecast series13.

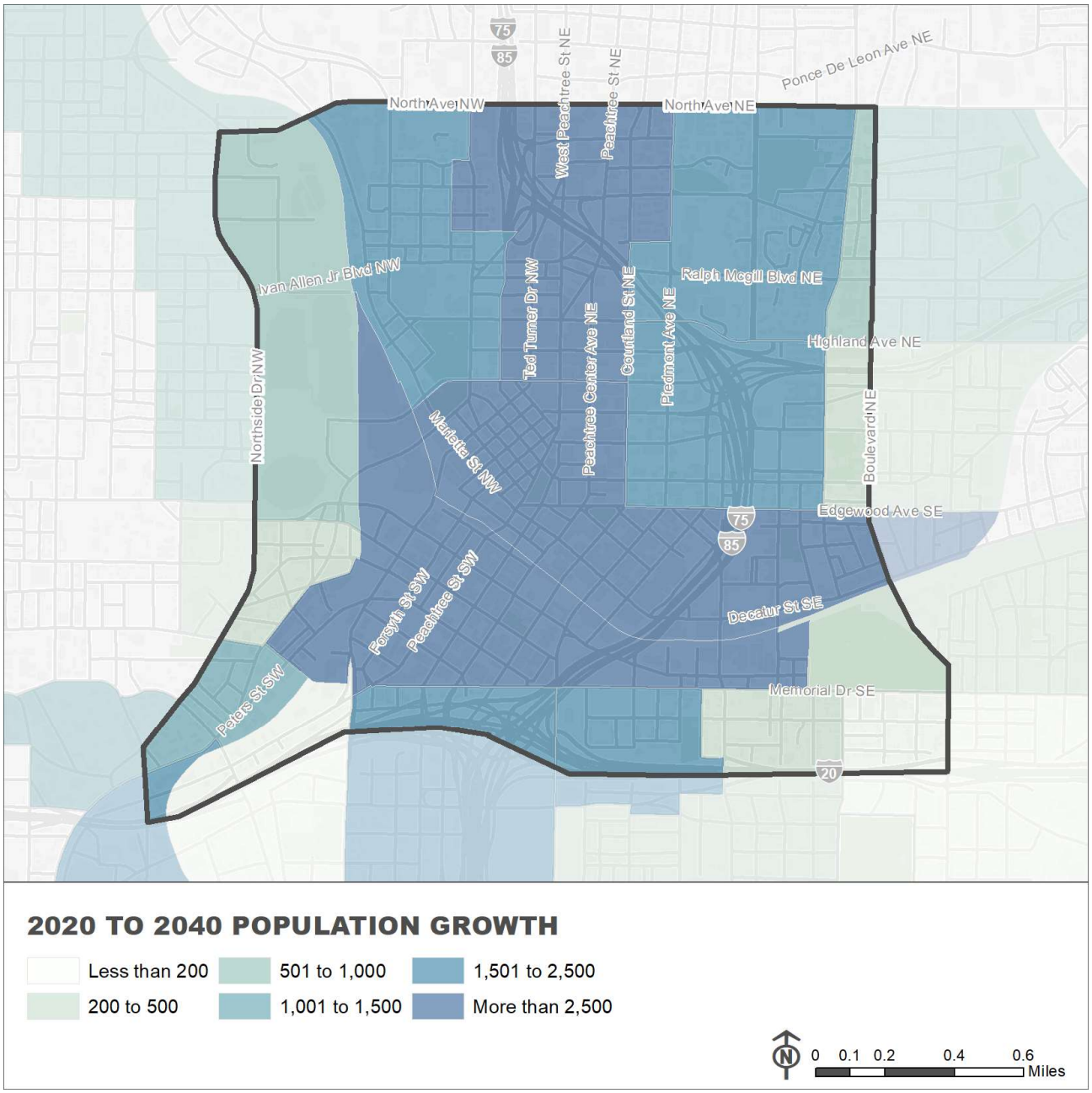
Figure 2.3 Downtown Atlanta 2040 Population, by Census Tract



Source: ARC Population Forecast series13.

As Downtown continues to grow in terms of population density and diversity, the demand for accessible and reliable transit will increase. Population growth will occur throughout the study area, concentrated along Peachtree Center Ave NE and Ted Turner Drive NW, around Marietta Street and Decatur Street, and in the Southeastern portion of Downtown (Figure 2.4).

Figure 2.4 Downtown Atlanta Population Growth from 2020 to 2040



Source: ARC Population Forecast series13.

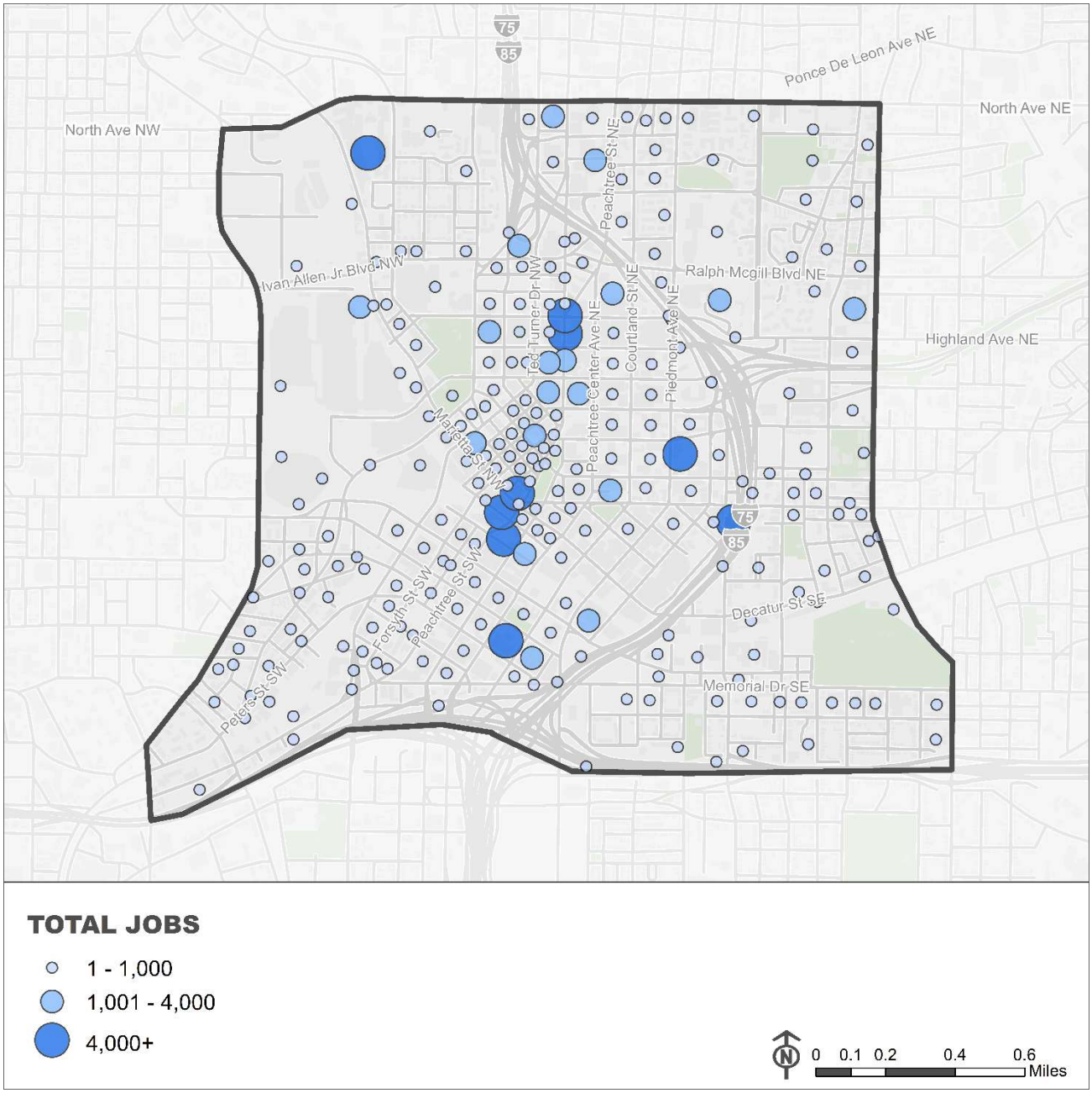
2.2 Existing and Future Employment

Downtown is a major employment hub welcoming approximately 162,000 employees each day. Almost all of these workers (approximately 99 percent) of them live outside of the study area and commute into Downtown. Furthermore, about 60 percent, of employees arrive alone in a single-occupancy vehicle.[3] Employment is concentrated along the Peachtree Street corridor, and in the Five Points area.

A more detailed analysis of employment locations in Downtown illustrates that the largest clusters of jobs are located at Peachtree Center, SunTrust Plaza, AmericasMart, Georgia State University, and the Georgia State Capital (Figure 2.5). City blocks bounded by Baker Street NE to the North, Memorial Drive to the South, Peachtree Street to the East and Peachtree Center Ave to the West support the highest density of jobs.

[3] Downtown Atlanta Master Plan.

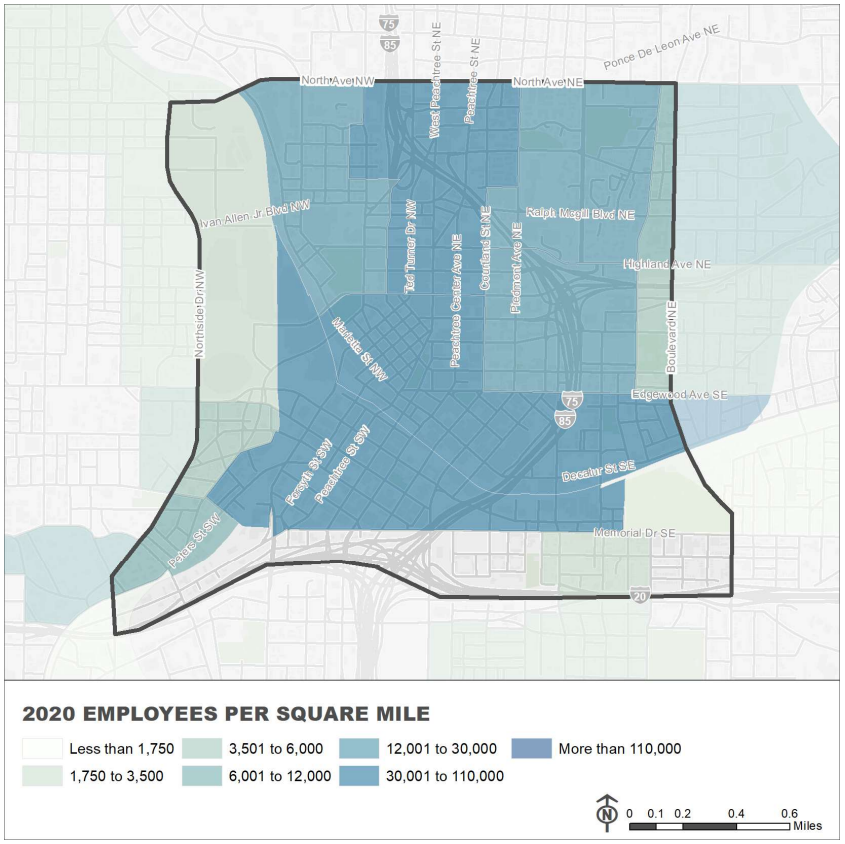
Figure 2.5 Total Jobs in Downtown



Source: LEHD On the Map Tool, 2017.

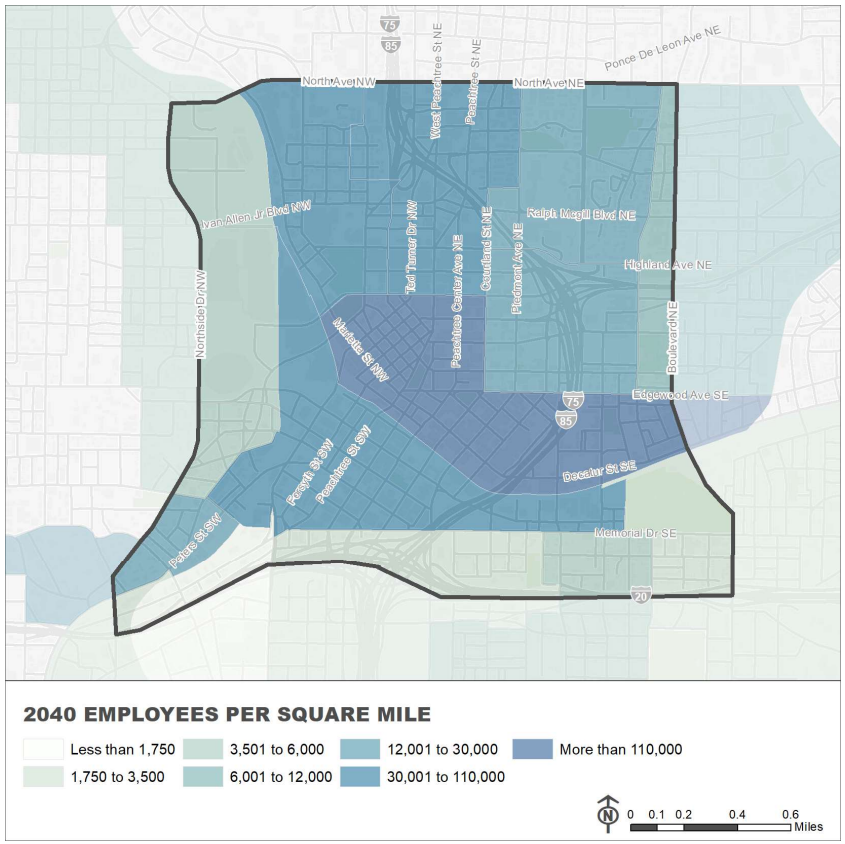
Based on the ARC Employment Forecast series13, the Greater Atlanta Metro Region is projected to grow from 2.7 million jobs in 2020 to 3.6 jobs in 2040, a 34 percent increase. Downtown Atlanta is expected to grow at a slightly slower pace during the same time period, from 162,000 jobs in 2020 to 197,700 in 2040 (Figure 2.8), a 22 percent increase.

Figure 2.6 Downtown Atlanta 2020 Employment, By Census Tract



Source: ARC Population Forecast series13.

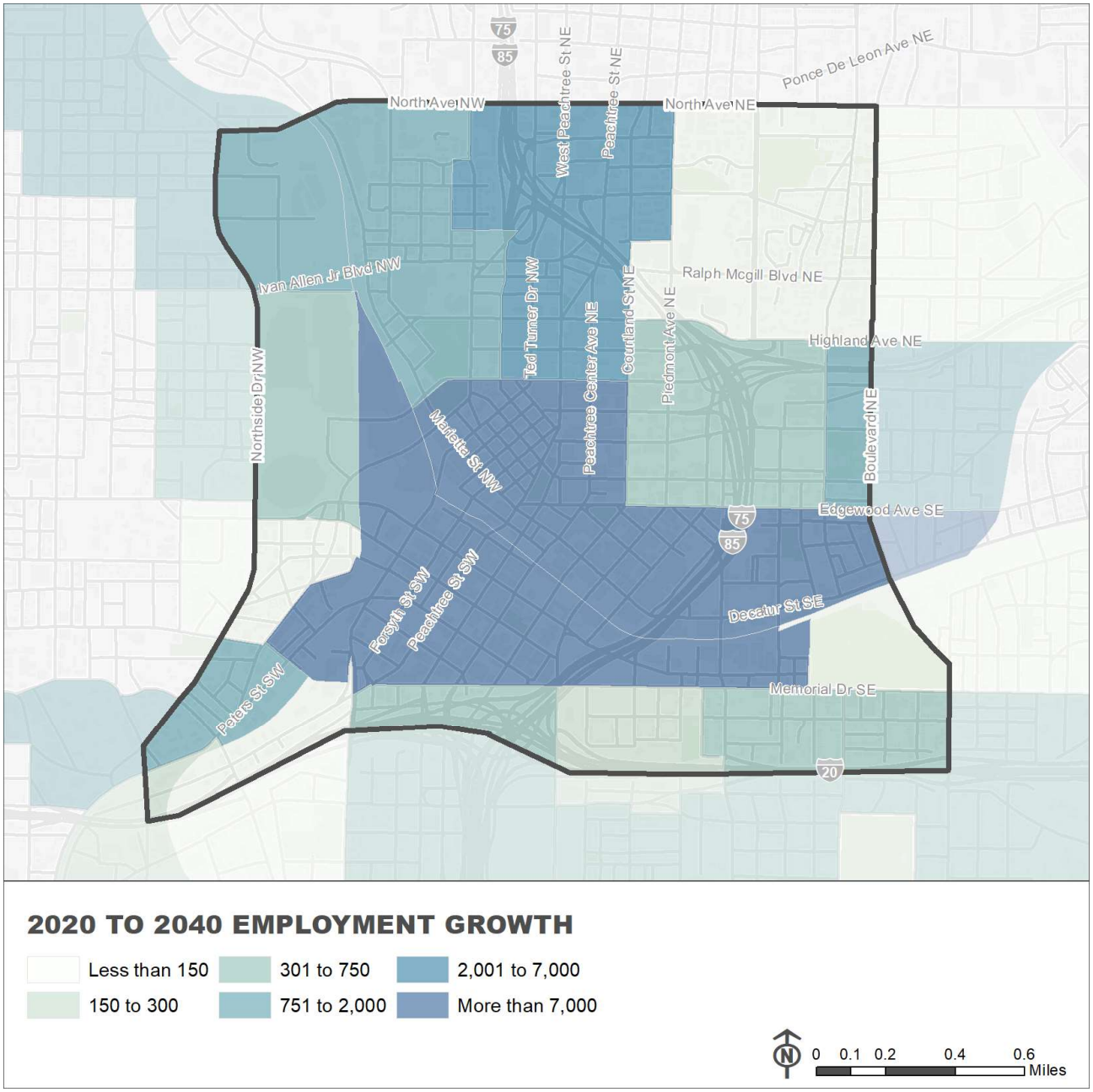
Figure 2.7 Downtown Atlanta 2040 Employment, By Census Tract



Source: ARC Population Forecast series13.

Employment growth is expected to occur throughout Downtown particularly south of Andrew Young International Blvd (Figure 2.8). Investment projects Figure 2.9) like the expansion of Georgia State University's campus at Turner Field, mixed used development in Centennial Yards and additional hotels will significantly increase employment levels in Downtown.[4]

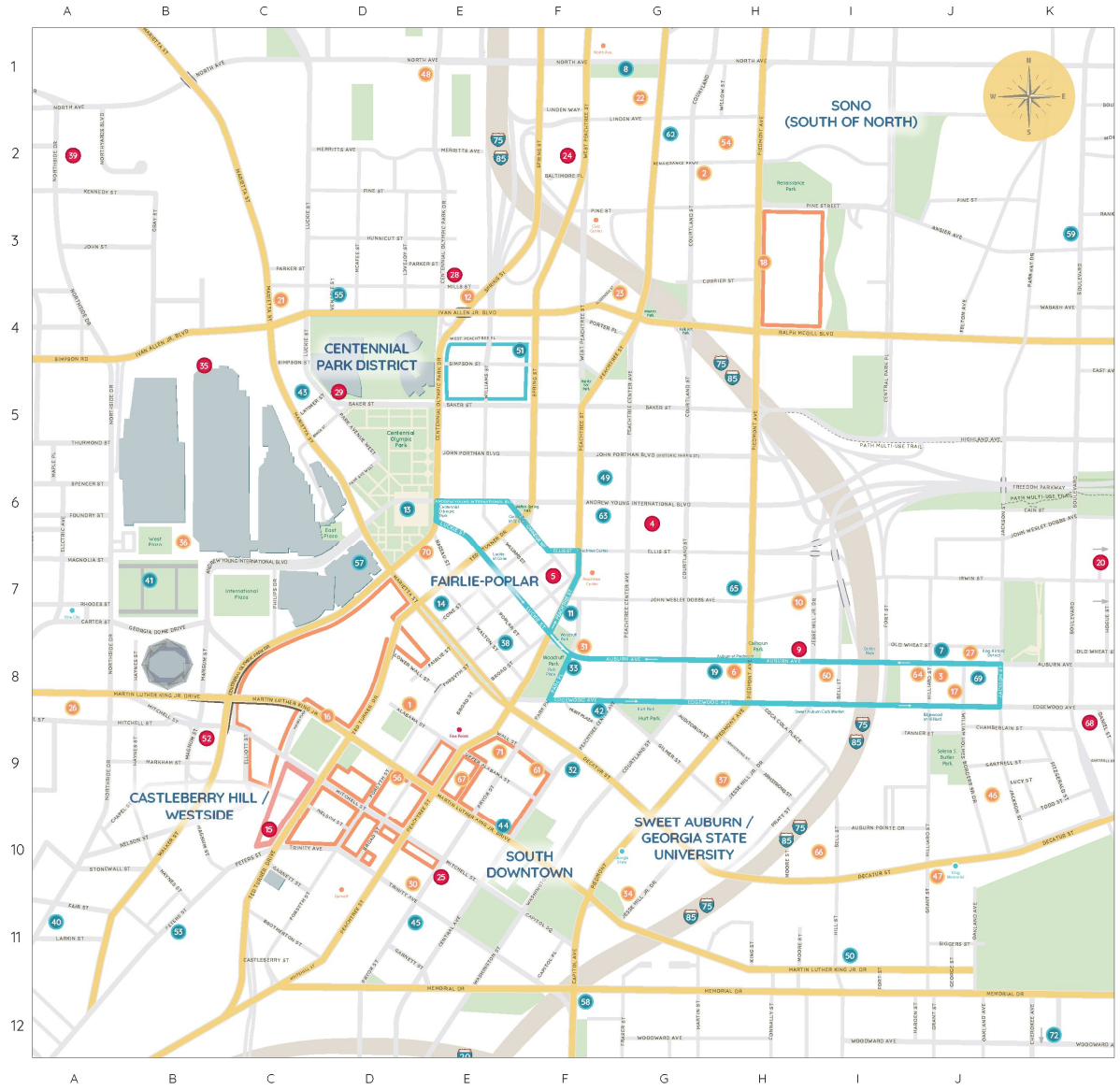
Figure 2.8 Downtown Atlanta Employment Growth from 2020 to 2040



Source: ARC Population Forecast series13.

[4] Atlanta Downtown Investment Map.

Figure 2.9 Atlanta Investment Map



INVESTMENT INDEX

RECENTLY COMPLETED · UNDER CONSTRUCTION · PLANNED PROJECT

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3. American Legion Building (J-8)
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5. Atlanta-Fulton Central Library (F-7)
6. Auburn Apartments (H-8)
7. Awethu House (J-8)
8. Bank of America Building / Renovation (G-1)
9. Bethel Towers / Renovation (H-8)
10. Big Bethel Redevelopment (H-7)
11. Candler Hotel, Curio Collection by Hilton (F-7)
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13. Centennial Olympic Park / Renovation (D-6)
14. Centennial Tower / Renovations (E-7)
15. Centennial Yards / Phase 1 (C-9)
16. Centennial Yards / Future Phases (C-6)
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20. David T. Howard School / Renovation (OFF THE MAP)
21. Element by Marriott Hotel (C-4)
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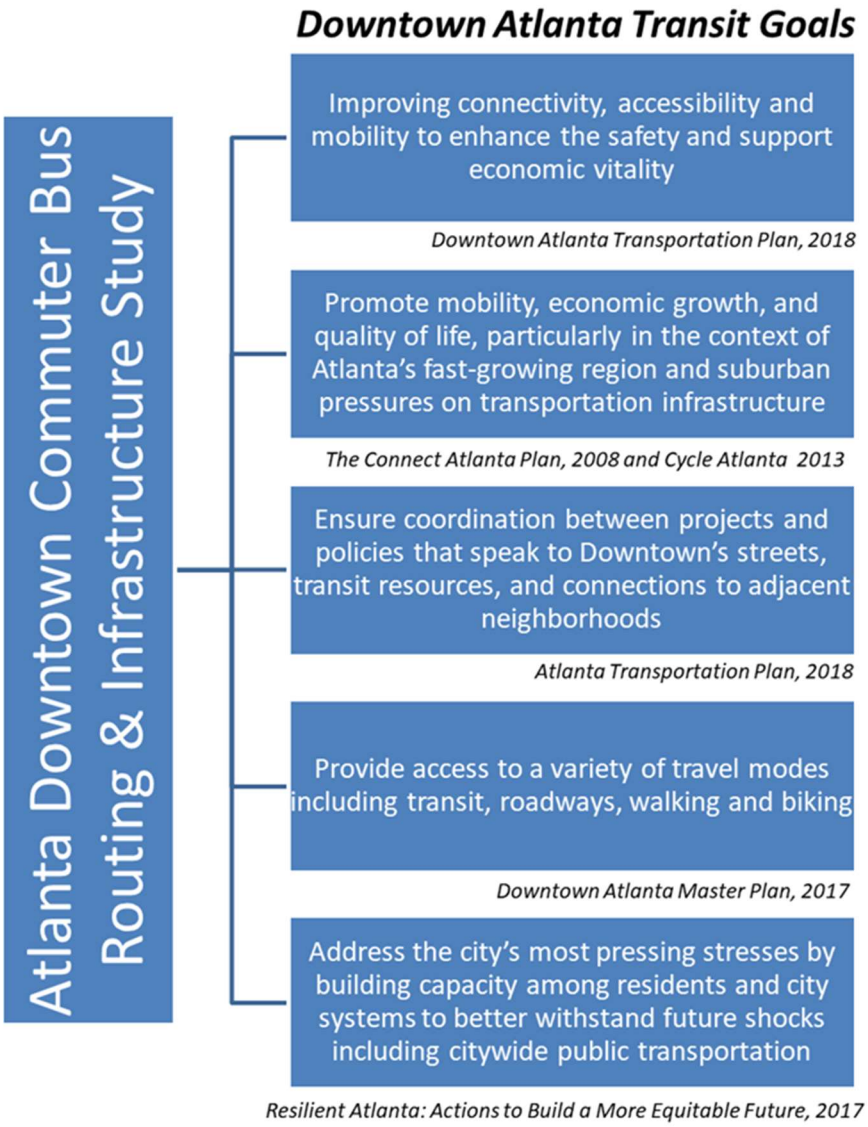
70. Wyndham / Margaritaville Vacation Club (E-7)
71. Yotel at Underground Atlanta (F-9)
72. Zoo Atlanta (OFF THE MAP)

2.3 Planned Improvements

Downtown Atlanta continues to be a significant area of focus of multiple planning efforts which have developed a vision and goals for the area (Figure 2.10). This study supports these goals and objectives and the common vision: to enhance the quality of life for all residents and visitors in Downtown Atlanta. The City of Atlanta, the Georgia Department of Transportation, CAP/ADID and other entities are already planning for a wide range of projects in Downtown Atlanta that will help achieve these goals by improving travel for all modes. Many of these planned improvements need to be accounted for when considering potential improvements to commuter bus operations. While in various stages of the planning and implementation process, some of the major projects include The Stitch, Peachtree Shared Space, Summerhill BRT, Forsyth Street multimodal enhancements, and the Baker Street Two-Way Restoration.

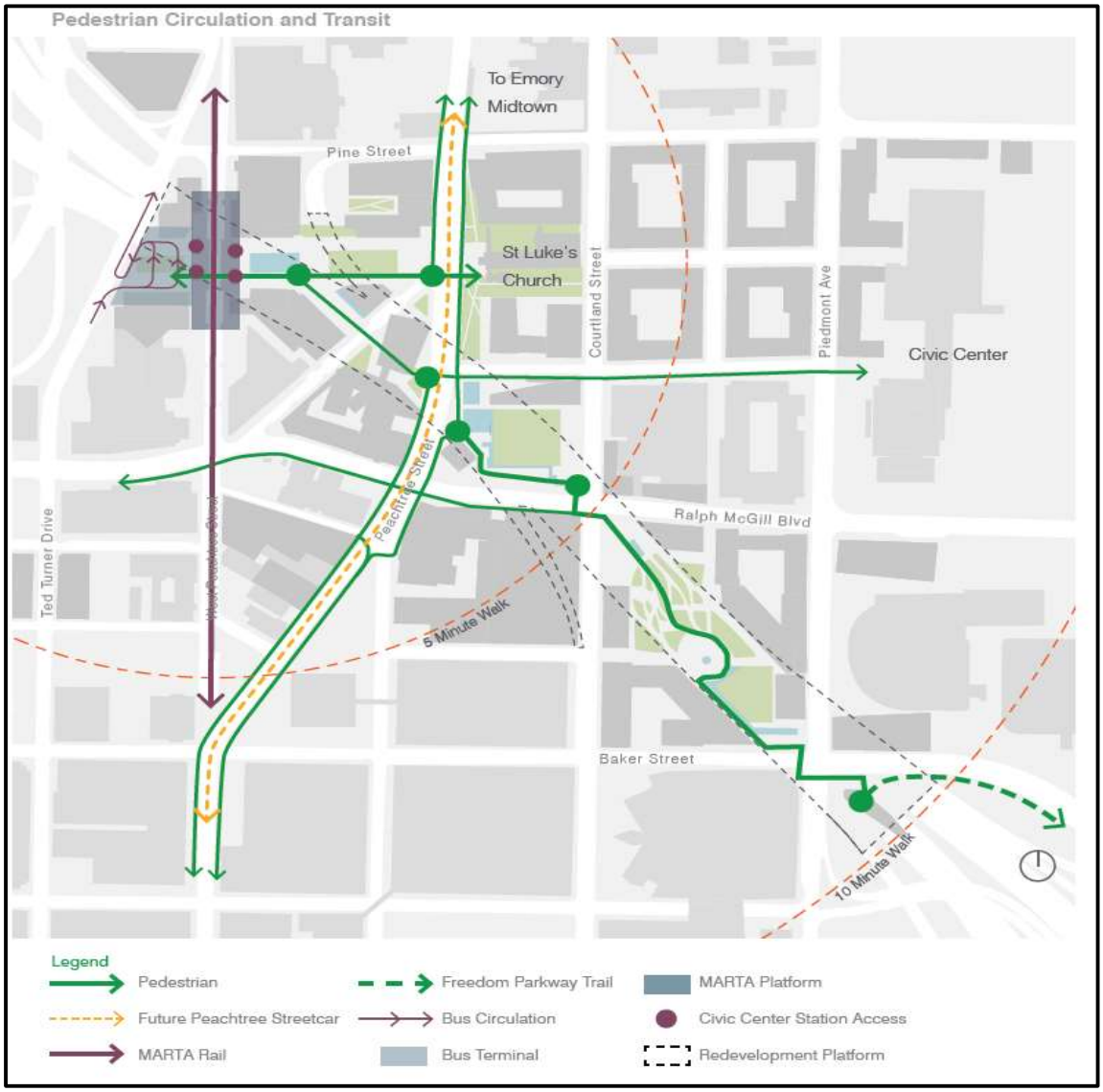
Figure 2.10 Downtown Atlanta Transit Goals



2.3.1 The Stitch

In 2016, CAP/ADID released an initial Vision Plan for the Stitch, a planning study to cap over the section of the Interstate 75/85 (the Connector) from the Civic Center MARTA station at West Peachtree Street to Piedmont Avenue. The cap would be a ¾ mile platform creating a 14-acre park that will develop a vibrant streetscape with sustainable infrastructure and interconnected open spaces.[5] As new residential and commercial development is attracted to the surrounding area. The Stitch will foster a transit-oriented environment that will leverage access to transit and increase ridership at nearby MARTA rail stations including Civic Center. The Vision plan includes new design for a bus terminal and circulation routes with access to Ted Turner Drive (Figure 2.11).

Figure 2.11 The Stitch



Source: The Stitch Concept Study, 2016.

[5] The Stitch Implementation Plan, November 2019.

2.3.2 Peachtree Shared Space

In 2018, the Atlanta Department of City Planning along with Atlanta City Studio completed a design concept for Peachtree Street. The concept is to reimagine the 1.5-mile segment of Peachtree Street located between Marietta Street and North Avenue. as a shared space to improve the public realm by enhancing the street character and reduce safety conflicts on streets with high levels of pedestrian traffic. Shared streets include various design elements such as no or minimal segregation between transportation modes and users, the elimination of surface markings and other control devices, street amenities and traffic calming devices.[6] The Peachtree Shared Space Study is currently underway to further analyze traffic impacts. A set of alternative solutions will be identified to fund and implement by March of 2021.

Figure 2.12 Peachtree Shared Street Concept Design

Source: Peachtree Shared Street Design Concept, 2018.

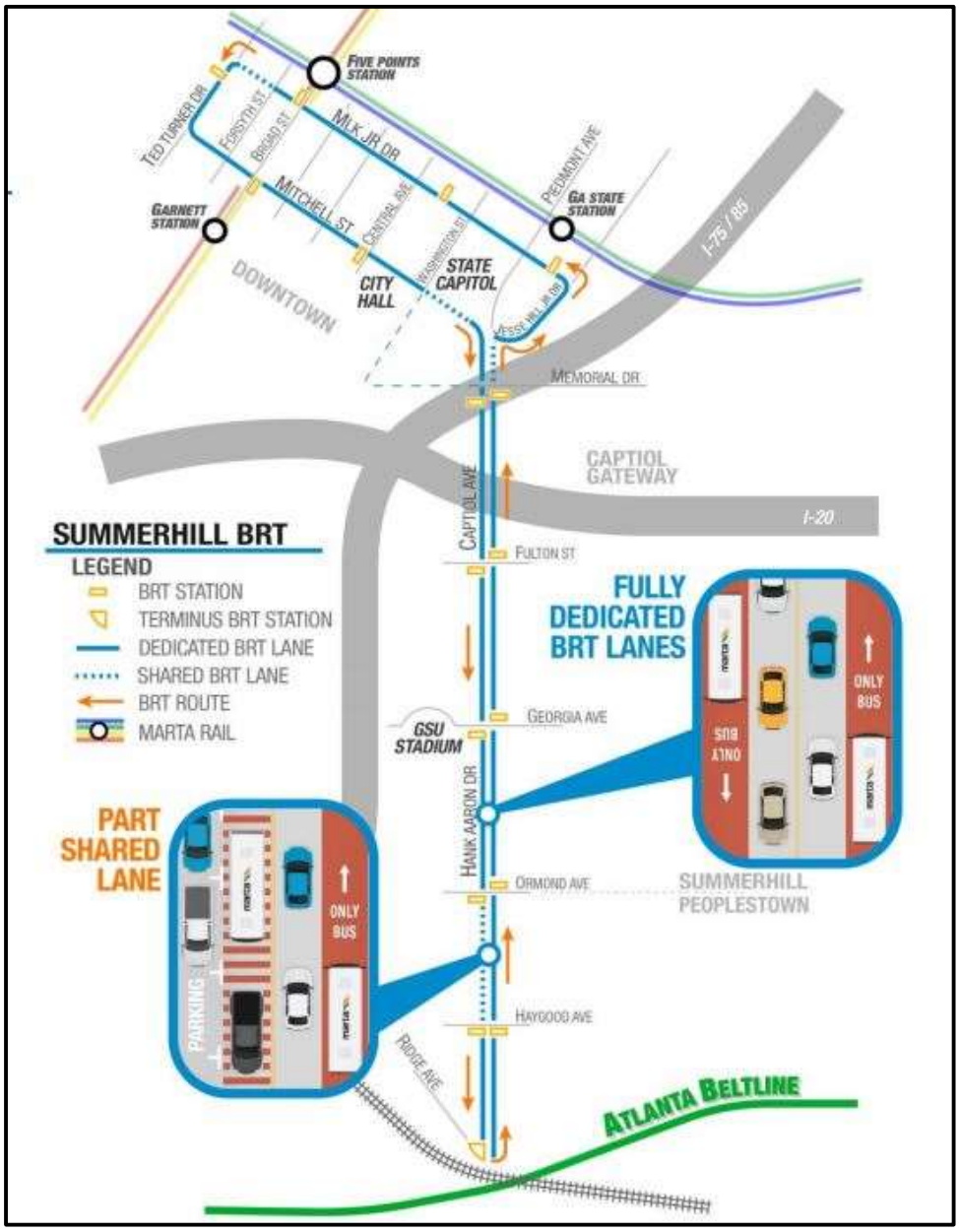
2.3.3 Summerhill BRT

MARTA and the City of Atlanta are working towards implementation of the Summerhill BRT, designed to connected the Summerhill neighborhood to Downtown and the Five Points Station. Currently in the planning process, the BRT would include dedicated BRT lanes along Hank Aaron Dr south of I-20, and along most of Martin Luther King Jr Drive and Mitchell Street in Downtown (Figure 2.13).[7] The planning process is also considering how these dedicated lanes and the BRT stations could be used by commuter buses.

6 Peachtree Shared Street Design Concept, 2018: https://static1.squarespace.com/static/5a455e2d010027d5dabc6739/t/5e31d46e3d9e6278c55b4731/1580324020444/Peachtree+St_Design+Concept-FINAL-180906-sm.pdf.

7 Connect the Core: https://www.connectthecore.com/.

Figure 2.13 Proposed Summerhill BRT Routing



Source: MARTA Summerhill Connect the Core presentation, Slide 14.

2.3.4 Forsyth Street

The Downtown Atlanta Master Plan identified the need for a more complete Forsyth Street in the segments between Peachtree Street and Memorial Street. A complete street design includes several repurposing projects that aim to enhance the public realm.[8] The redesign of Forsyth Street will improve mobility for all travel modes and better accommodate the intersection of pedestrians, commuter buses, motor vehicles and bicyclists.

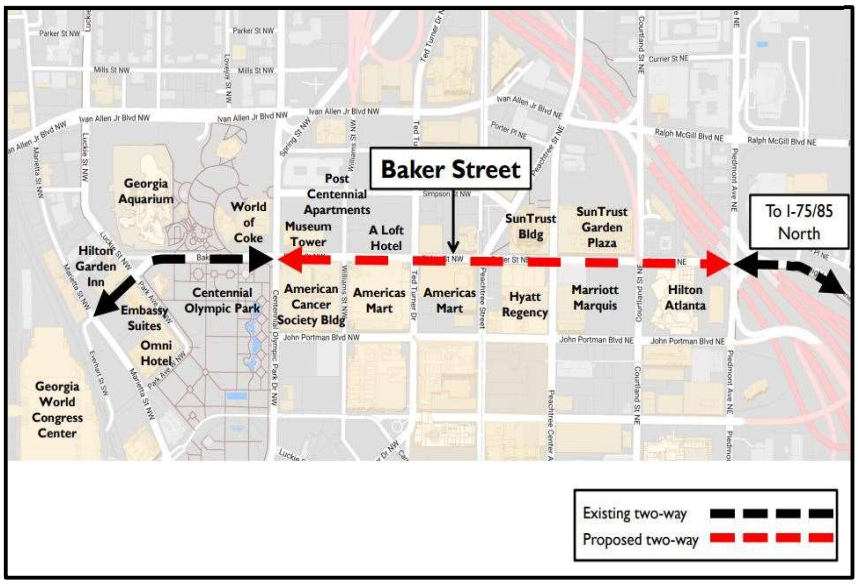
Figure 2.14 Forsyth Street Rendering

Source: Downtown Atlanta Master Plan.

2.3.5 Baker Street Two-Way Restoration

Restoring Baker Street into a more functional two-way street has been studied by CAP/ADID since 2003 and has recently been funded by the 2019 Renew Atlanta Bond/TSPLOT Program. The purpose of the redesign is to reduce congestion on surrounding streets while improving access from east to west. Design elements include organization of curb side operations such as commercial loading, rideshare vehicle and regional buses, aligning driver speeds with posted speed limits, and repairing failing sidewalk conditions[9]. These design elements will reinforce the feeling of safety for all roadway users while enhancing the connectivity of the existing street-grid.

Figure 2.15 Baker Street Two-Way Restoration



Source: Baker Street 2-Way Conversion Project Briefing.

[8] Renew Atlanta Bond/TSPLOST Program, Atlanta City Council, 2019. https://citycouncil.atlantaga.gov/Home/ShowDocument?id=1698.

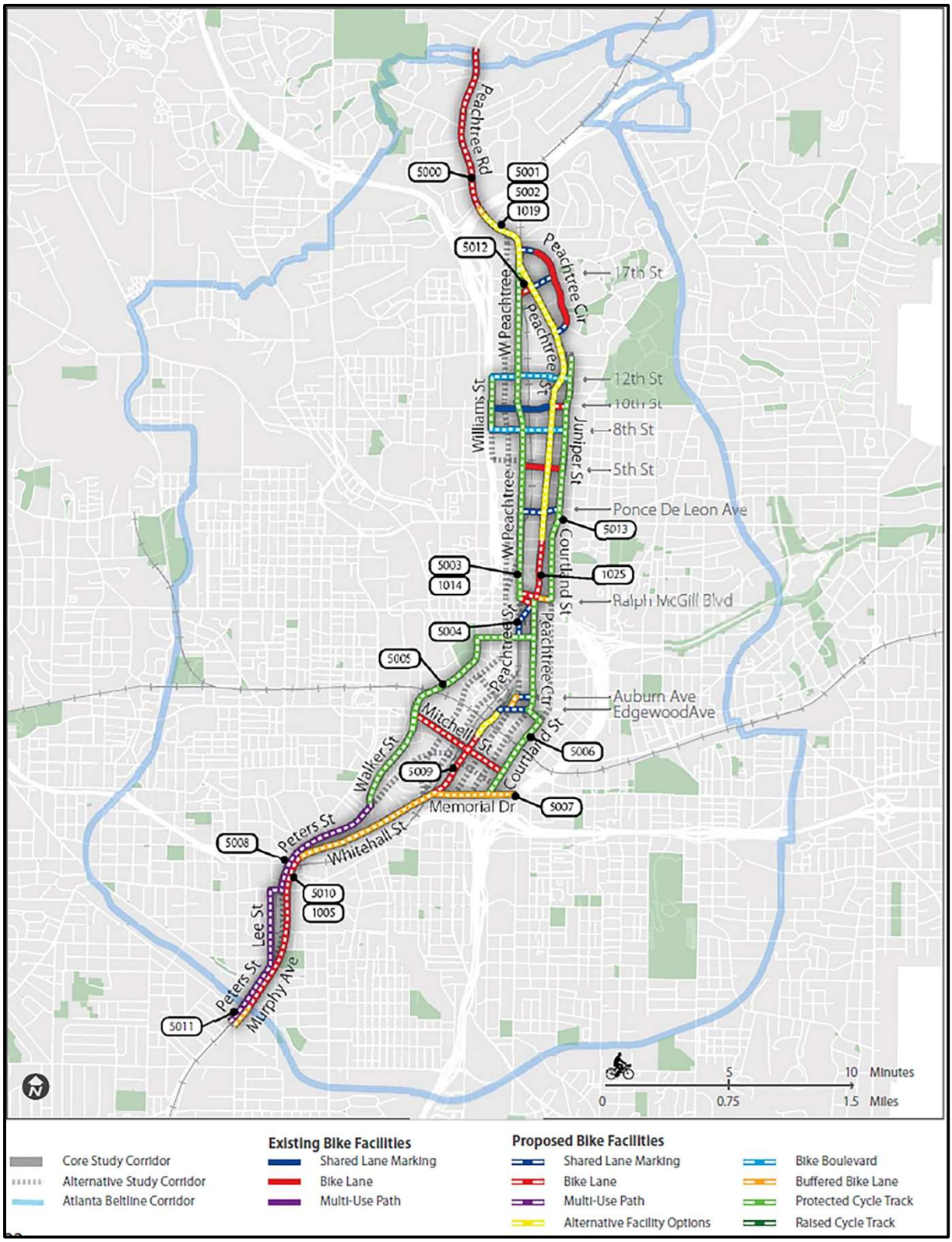
[9] Baker Street 2-Way Conversion Project Briefing, https://ctycms.com/ga-atlanta/docs/-2-way-conversion-stakeholder-project-briefing.pdf.

2.3.6 Cycle Atlanta

The City of Atlanta completed the Cycle Atlanta study in 2015, which aimed to increase connectivity by creating a network of high-quality bicycle facilities. Since then, the city has installed and funded 94 percent of planned bikeways including a two way cycle track along Peachtree Center Ave (Figure 2.16).[10] As noted in the study, the Peachtree corridor provides an opportunity to connect Downton to Midtown, the West End business district, Eight MARTA stations and various destinations in between. In Downtown, the primary north/south facilities will diverge off of Peachtree Street to avoid the streetcar pathway and provide designated space for bicyclists along Peachtree Center Avenue/Glimer Street/Courtland Street/Washington Street. These facilities will provide pathway connections to Peachtree Street, Ralph McGill Boulevard and Memorial Drive.

[10] City of Atlanta 2017 Annual Bicycle Report: https://www.atlantaga.gov/home/showdocument?id=34089.

Figure 2.16 Cycle Atlanta Bicycle Facilities



Source: Cycle Atlanta: Phase 1.0 Study.

3.0 Commuter Bus Services

Downtown Atlanta is served by a number of regional and local transit agencies, including local bus service, heavy rail, streetcar, and commuter bus service. The agencies operating in Downtown Atlanta include CobbLinc, GCT, Xpress, and MARTA. All commuter bus agencies operate Monday through Friday with morning services starting as early as 5:30 a.m. and afternoon services starting around 1:00 p.m. The following section provides a quick overview of each agency.

3.1 CobbLinc

CobbLinc is operated by Cobb County and primarily provides service within the County as well as select express routes to/from Downtown and Midtown Atlanta. The service includes three express routes, nine local routes, two free circulator routes, and three FLEX zones, with a total annual ridership of more than 328,000 passengers in 2018 (Table 3.1).

Table 3.1 CobbLinc Commuter Bus Annual Agency Profile
2018

Annual Vehicle Revenue Hours	20,802
Annual Vehicle Revenue Miles	491,291
Number of Commuter Buses	29
Operating Expenses per Vehicle Revenue Hour	$140.75
Annual Unlinked Trips	328,614

Source: Federal Transit Administration, National Transit Database (NTD) Transit Agency Profiles.

CobbLinc routes serve six park and ride lot locations throughout Cobb County. The express routes are operated using 29 over-the-road coaches and include Routes 100 and 101, which serve Downtown and Midtown, and 102, which only serves Midtown. These routes operate inbound during a morning peak period between 5:30 a.m. and 10:00 a.m., and outbound during an evening peak period between 1:00 p.m. and 7:45 p.m.

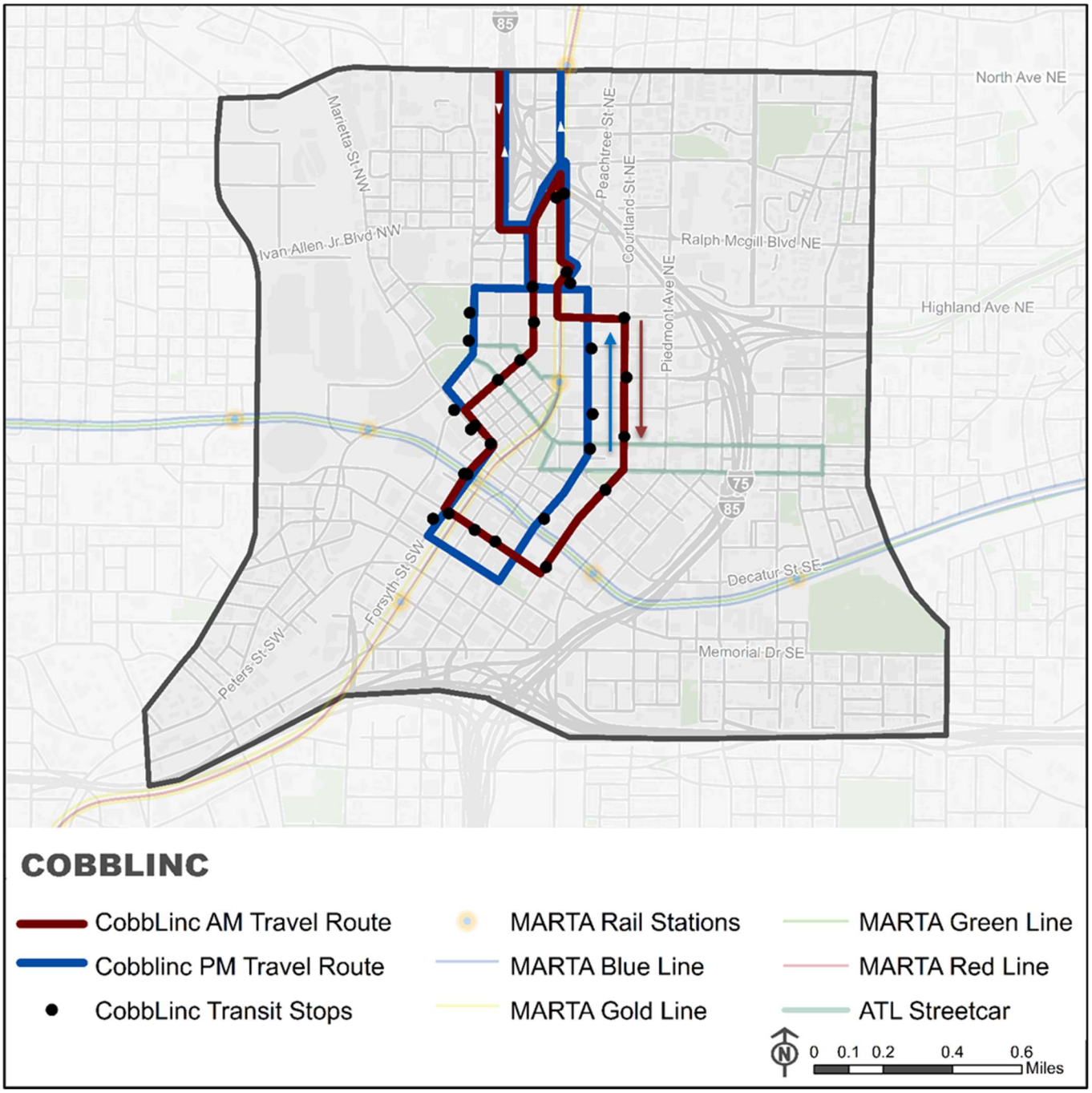
In 2018 (prepandemic), the two routes which serve Downtown had an average daily ridership of over 400 passengers (Table 3.2). The two routes follow similar patterns through Downtown (Figure 3.1), entering near Civic Center looping through Downtown on a series of one-way streets. Many of the stops are therefore in a different location in the morning and evening peak periods.

Table 3.2 CobbLinc Downtown Routes

Operating Routes in Downtown	Average Daily Ridership (2018–2020)	Inbound Trips per Day (Fall 2019)
Route 100: Busbee Park and Ride to Downtown Atlanta	292	11
Route 101: Marietta Transfer Center to Downtown Atlanta	139	5

Source: Cobb County.

Figure 3.1 CobbLinc Travel Paths and Stops in Downtown



3.2 Gwinnett County Transit

GCT operates five commuter express bus routes, six local bus routes, and paratransit service within Gwinnett County as well as select routes to/from Downtown, Midtown, and the Emory University/Center for Disease Control (CDC) area. Across these services, GCT has a total annual ridership of over 400,000 passengers (Table 3.3). The five commuter express routes operate Monday through Friday using the high-occupancy toll lane on I-85 using 33 over-the-road coaches from three park and ride lots located in Gwinnett County. GCT offers a unique reverse flow commuter express route between Downtown and Sugarloaf Mills.

Table 3.3 GCT Commuter Bus Annual Agency Profile
2018

Annual Vehicle Revenue Hours	35,246
Annual Vehicle Revenue Miles	735,103
Number of Commuter Buses	33
Operating Expenses per Vehicle Revenue Hour	$170.42
Annual Unlinked Trips	403,391

Source: Federal Transit Administration, NTD Transit Agency Profiles.

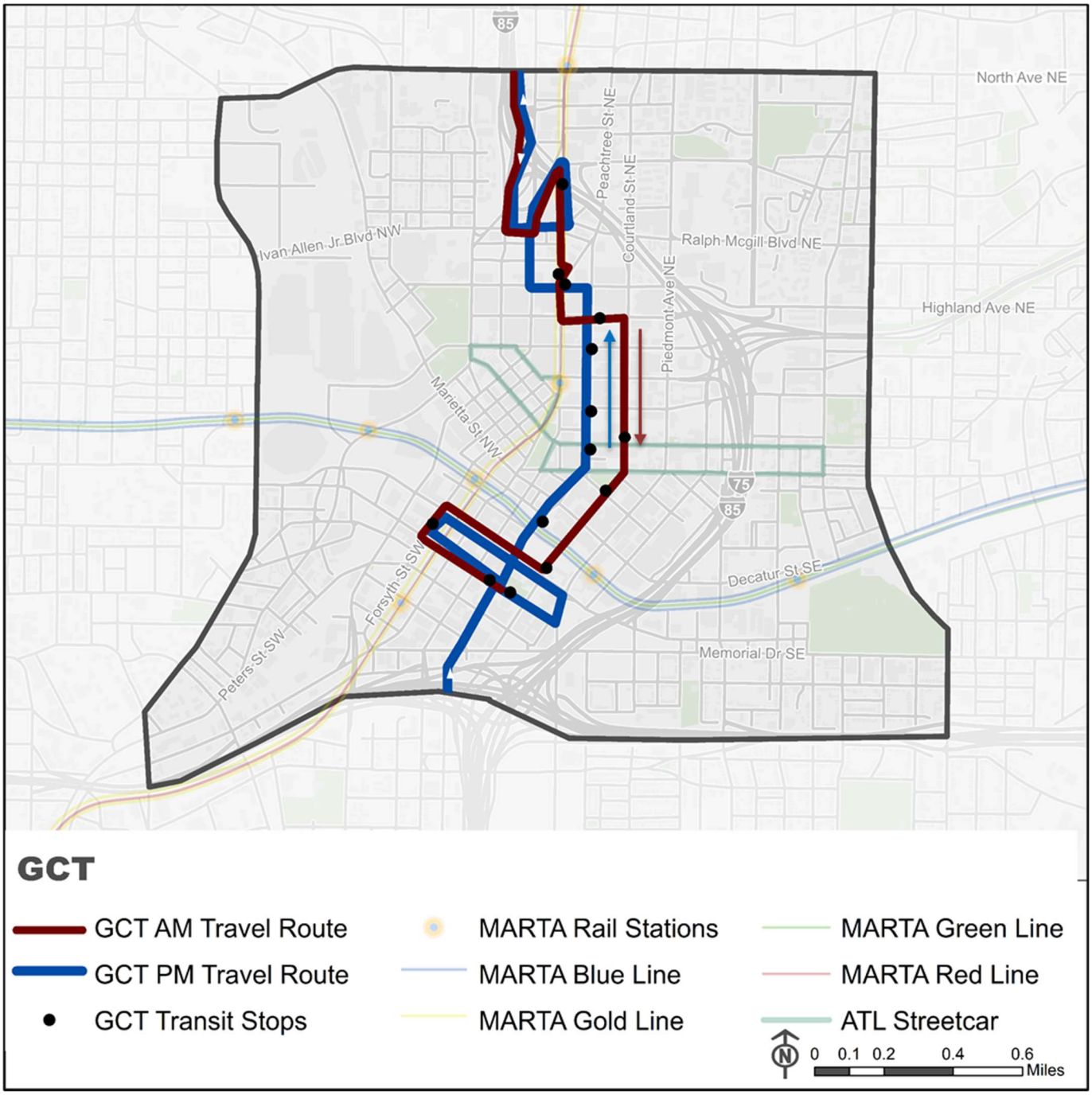
The four commuter bus routes that operate Downtown serve over 1,400 passengers daily (Table 3.4). The inbound routes follow similar patterns through Downtown (Figure 3.2), entering near Civic Center looping through Downtown by traveling north/south on Peachtree Center Ave and Courtland St, and east/west on Martin Luther King Drive and Mitchell Street. These routes operate inbound during a morning peak period between 5:30 a.m. and 10:00 a.m., and outbound during an evening peak period between 1:00 p.m. and 7:45 p.m. The reverse commute route (Route 103A) does not currently have high ridership (Table 3.4). Outbound service can be provided at little additional cost, since the buses have to make the return journey anyway.

Table 3.4 GCT Routes

Operating Routes in Downtown	Average Daily Ridership (2019)	Inbound trips per Day (Fall 2019)
Inbound Route 101 (Zone 2): I-985 Park and Ride to Downtown	356	10
Inbound Route 102 (Zone 1): Indian Trail Park and Ride to Downtown	190	6
Inbound Route 103 (Zone 2): Sugarloaf Mills Park and Ride to Downtown	866	20
Outbound Route 103A (Zone 1): Sugarloaf Mills Park and Ride to Downtown	2	2

Source: Gwinnett County.

Figure 3.2 GCT Travel Paths and Stops in Downtown



3.3 Xpress

Using a fleet of 125 over-the-road coaches, the ATL provides commuter bus services known as Xpress to 12 counties within the state to connect Downtown, Midtown, and other regional employment centers. Xpress operates Monday through Friday primarily during the morning and afternoon/evening commute times and each route provides connections to MARTA rail stations.

Table 3.5 Xpress Commuter Bus Annual Agency Profile 2017

Annual Vehicle Revenue Hours	110,328
Annual Vehicle Revenue Miles	2,498,086
Number of Commuter Buses	125
Operating Expenses per Vehicle Revenue Hour	$202.49
Annual Unlinked Trips	1,626,252

Source: Federal Transit Administration, NTD Transit Agency Profiles.

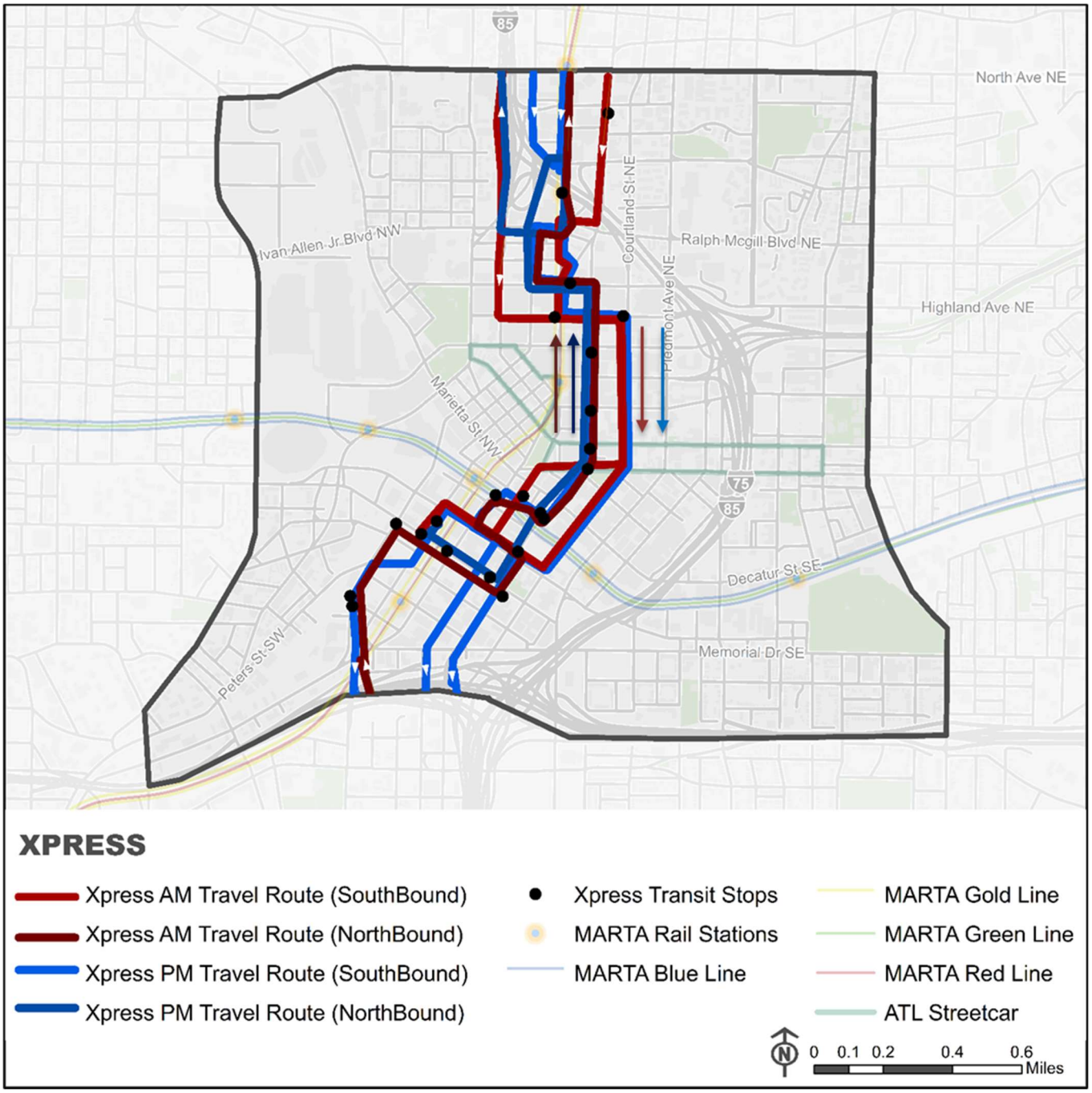
These routes operate inbound during a morning peak period between 5:30 a.m. and 10:00 a.m., and outbound during an evening peak period between 1:00 p.m. and 7:45 p.m. The 13 commuter bus routes that operate Downtown serve over 4,600 passengers daily (Table 3.6), with routes serving the north end of Downtown at Civic Center, and the southern portion of Downtown. Travel between the two ends of Downtown occurs on the Peachtree Center Ave and Courtland St (Figure 3.3). It is essential to note that the Route 426: Easy Conyers/West Conyers/Panola Road to Downtown has the highest average daily ridership of all Xpress routes, yet has no easy access to a MARTA rail station.

Table 3.6 Xpress Routes

Operating Routes in Downtown	Average Daily Ridership (2019)	Inbound trips per Day (Fall 2019)
400: Cumming to Downtown	170	3
413: Hamilton Mill/Mall of Georgia to Downtown	223	5
416: Dacula to Downtown	283	6
419: Snellville/Hewatt Road/Stone Mountain to Downtown	595	10
426: East Conyers/West Conyers/Panola Road to Downtown	809	15
430: McDonough to Downtown	388	8
432: Stockbridge to Downtown	463	10
440/441: Hampton/Jonesboro to Downtown/Midtown	331 / 209	6/5
442: Riverdale to Downtown	142	5
453: Newnan/Union City to Downtown/Midtown	298	8
476: Hiram/Powder Springs to Downtown/Midtown	347	9
480: Acworth/ Town Center to Downtown	208	5
490: Canton/Woodstock to Downtown	170	4

Source: GRTA/SRTA.

Figure 3.3 Xpress Travel Paths and Stops in Downtown



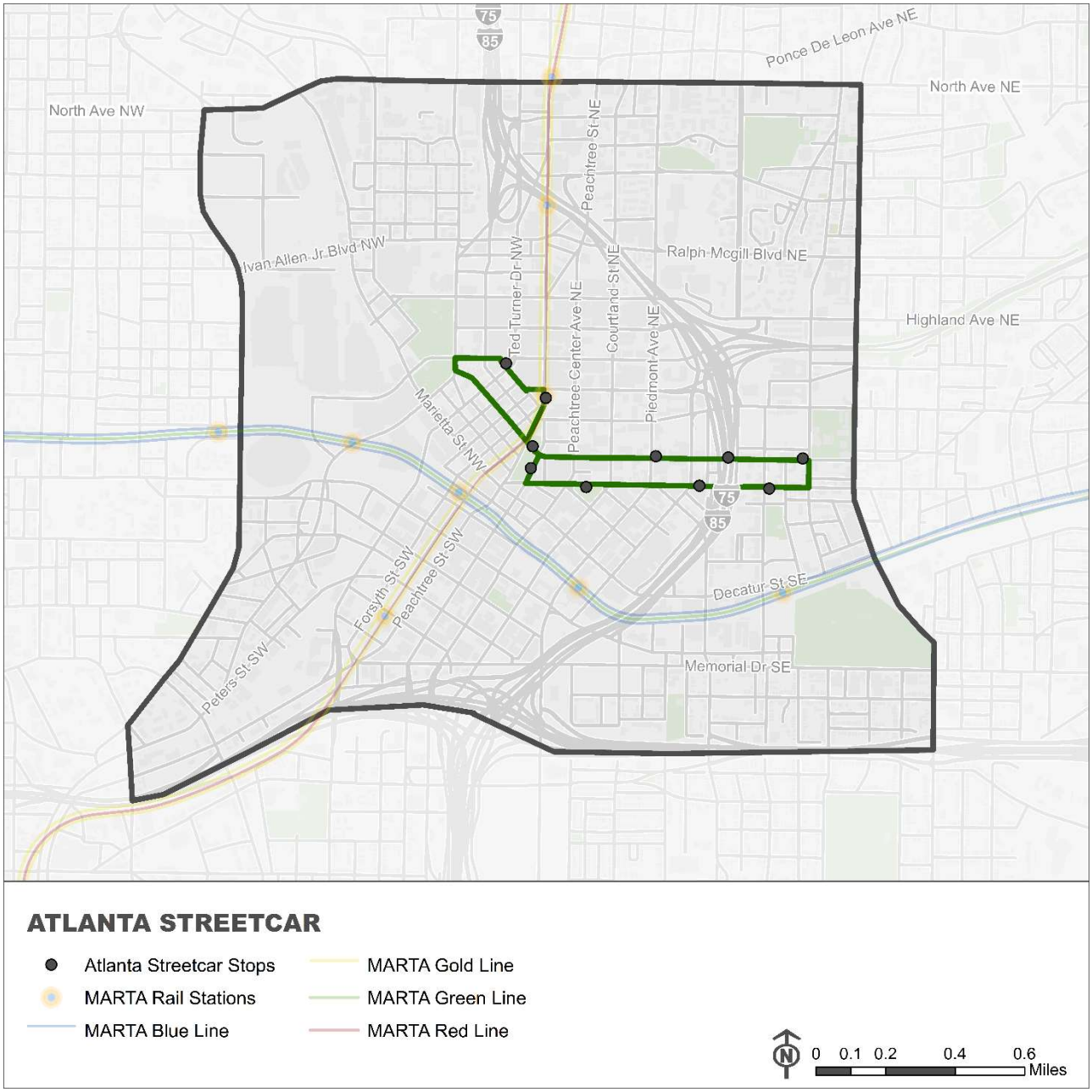
3.4 MARTA and the Atlanta Streetcar

The Metro Atlanta Regional Transit Authority (MARTA) operates four rail lines (Gold, Red, Green, and Blue), the Atlanta Streetcar, and over 103 bus routes. Its jurisdiction includes Fulton, DeKalb, and Clayton Counties, carrying passengers from areas as far away as Alpharetta to the north and Union City to the southwest, into Downtown Atlanta. Within the study area boundary, MARTA rail includes the Red and Gold lines (operating north to south) with stops at Civic Center Station, Peachtree Center Station, and Garnett Station, and the Green and Blue lines (operating east to west) with stops at Georgia State Station and

GWCC/CNN Center Station. All lines intersect at Five Points Station, which serves as a major multimodal and transit hub, with each rail line arriving approximately every 10 minutes.[11] The Atlanta Streetcar consists of a 2.7-mile East-West loop that runs approximately every 10 to 15 minutes depending on ridership demand and traffic conditions (Figure 3.4). The route provides connections to major attractions and destinations, and will soon be expanded to connect to the Atlanta Beltline, adjacent neighborhoods, and future developments. MARTA's local bus service is not the focus of this study, but it is important to note that extensive service exists Downtown, and commuter buses and local buses must share space in travel lanes, at curbs for stops, and away from traffic for staging.

[11] Train frequency is now approximately 20 minutes based on service changes due to COVID-19.

Figure 3.4 Atlanta Streetcar Route



3.5 Commuter Bus Operations

With 21 commuter bus routes operating almost 200 trips during the peak period (Table 3.7) in such a small area, commuter buses make up a significant component of traffic in Downtown Atlanta. Operating in mixed traffic, the commuter buses move relatively slowly through Downtown, and their sheer numbers can obstruct the flow of other vehicles in some locations. As highlighted in Table 3.8, around half of these trips occur within a single hour during each peak, further concentrating their operational impacts to the roadway network.

Table 3.7 Bus Volumes During the Peak Periods

Agency	Morning (5:30 a.m. to 10:00 a.m.)	Evening (1:00 p.m. to 7:45 p.m.)
CobbLinc	16	17
GCT	38	46
Xpress	139	118
Total	193	181

Source: General Transit Specific Feeds; CobbLinc: 2019-09-08—2020-09-08, GCT: 2018-06-11—2020-01-01; Xpress: 2019-09-18—2019-12-18.

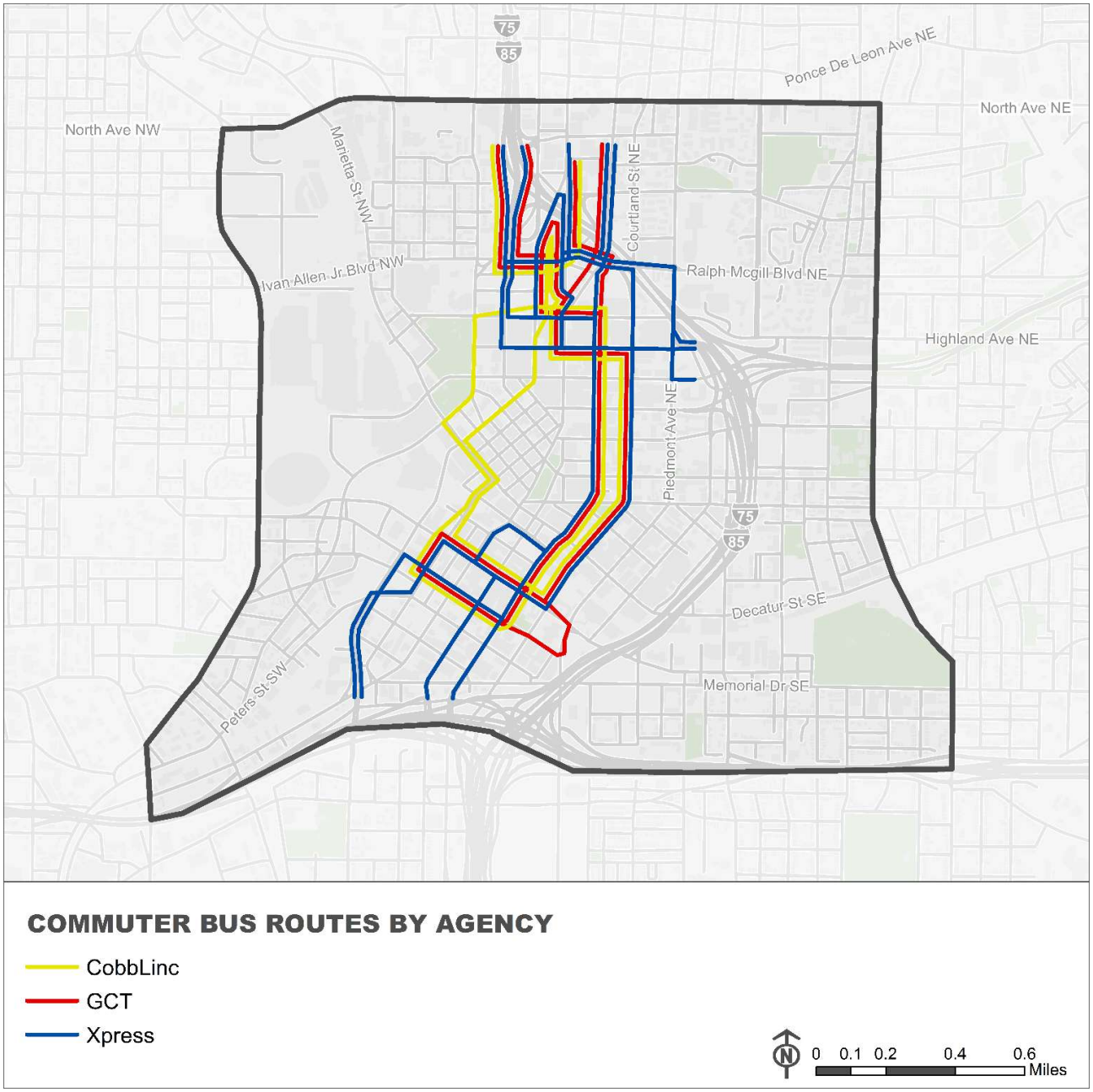
Table 3.8 Bus Volumes During the Peak Hours

Agency	Morning (7:00 a.m. to 8:00 a.m.)	Evening (4:30 p.m. to 5:30 p.m.)
CobbLinc	8	8
GCT	12	18
Xpress	76	76
Total	96	102

Source: General Transit Specific Feeds; CobbLinc: 2019-09-08—2020-09-08, GCT: 2018-06-11—2020-01-01; Xpress: 2019-09-18—2019-12-18.

Commuter bus operators also try to provide the most convenient and direct door to door service for riders, resulting in many routes that traverse a long path through Downtown, stopping an average of nine times. The routing of commuter buses is further complicated by the network of one-way streets in Downtown which can require long loops and differing routing in the morning and the evening peaks. Figure 3.5 illustrates how much overlap there is in the commuter bus routing, and how the majority of roadways in Downtown are currently required to accommodate commuter buses.

Figure 3.5 Commuter Bus Services in Downtown



The combined frequencies of the many commuter bus routes result in high levels of bus traffic on the Downtown street network during the peak hours. Figure 3.6 and Figure 3.7 highlight the number of commuter buses operating on the street network during the morning and evening peak hours, respectively, and do not include additional local buses that may be operating in the study area as well. During both peak hours, the highest bus volumes are found near Civic Center, which must accommodate more than 65 buses an hour, or a bus less than 60 seconds apart, during the evening peak. Roadways near Five Points and Peachtree Center Ave also must accommodate more than 30 buses per hour. This level of commuter bus volumes, combined with the frequency of stops can interfere with traffic operations of a general purpose travel lane, making it so that the right-most lane is primarily only usable by buses and turning vehicles.

Figure 3.6 Commuter Bus Volumes during the Morning Peak Hour

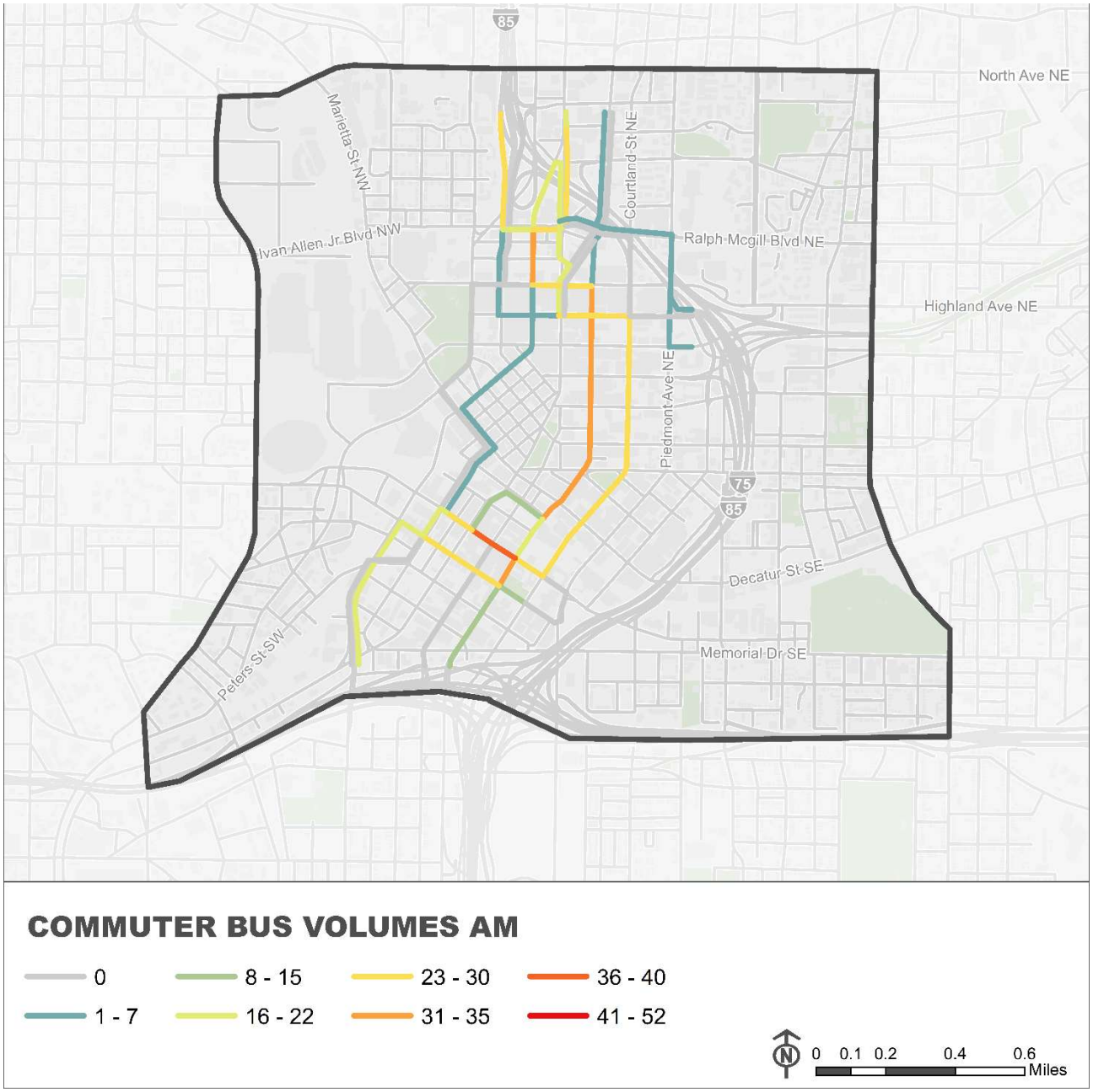
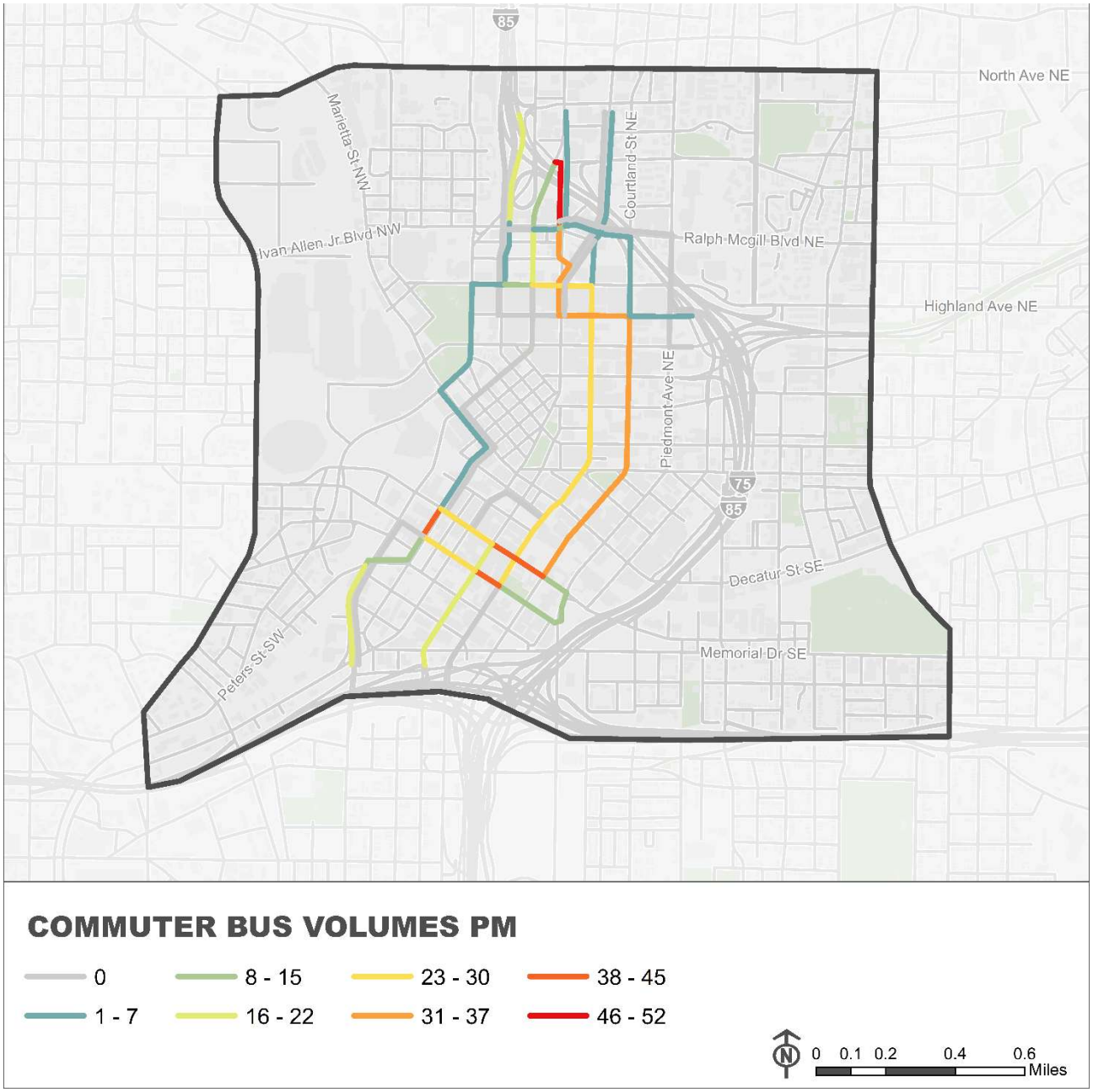


Figure 3.7 Commuter Bus Volumes during the Afternoon Peak Hour



Despite a Downtown area of only 3.5 square miles, each commuter bus route travels an average of 2.4 miles through the district, requiring an average of seven turns along their route, primarily at signalized intersections which can add significant delay for buses. On average, there is only 800 feet, or less than a fifth of a mile between stops; this is much closer stop spacing than is typically recommended for this type of bus service. The Transit Capacity and Quality of Service Manual recommends stop spacing of a quarter mile only for local service, with refinement recommended to account for actual walking

On Average, each Commuter Bus Route:

- *Travels 2.4 miles in Downtown.*
- *Makes 7 turns.*
- *Stops every 800 feet.*
- *Spends 18 minutes traveling in Downtown.*
- *Travels 7.7 miles per hour.*

distances and street connectivity.[12] The number of stops, number of turns, and congestion result in each commuter bus spending an average of 18 minutes to traverse Downtown, moving at less than 8 miles per hour.

3.6 Commuter Bus Ridership

Figure 3.8 highlights commuter bus alightings during the morning peak period on all three commuter bus operators. Complete data was not available for boardings in the evening peak period, but an assumption of symmetry can be reasonably applied: the vast majority of people are likely to board the bus in the evening very close to where they were dropped off in the morning. As shown, there are three clusters of boardings and alightings in Downtown:

- Civic Center Station is the single most used commuter bus stop, accounting for 30.3 percent of all alightings in the morning peak. For many commuter bus routes, Civic Center is the first opportunity for passengers to transfer to MARTA services to connect to other destinations in the City of Atlanta. The high level of ridership at this station despite the relatively low level of employment in the immediate vicinity indicates that many passengers are transferring to other services or walking to reach their final destination. Table 3.9 highlights that based on 2019 from MARTA that the rate of transfers varies by operator and time of day, but that on average ranges between 46 percent and 58 percent—although almost all Cobb County passengers alighting at Civic Center are transferring to MARTA.

Table 3.9 Transfers between Commuter Buses and MARTA at Civic Center Station

	Cobb	Xpress	GCT	Total
Morning				
Commuter Bus Alightings	37	399	205	641
Transfers to MARTA	34	168	91	293
Percent	92%	42%	44%	46%
Evening				
Commuter Bus Boardings	65	619	213	897
Transfers from MARTA	63	308	150	521
Percent	97%	50%	70%	58%

Source: MARTA, 2019 Average Weekday.

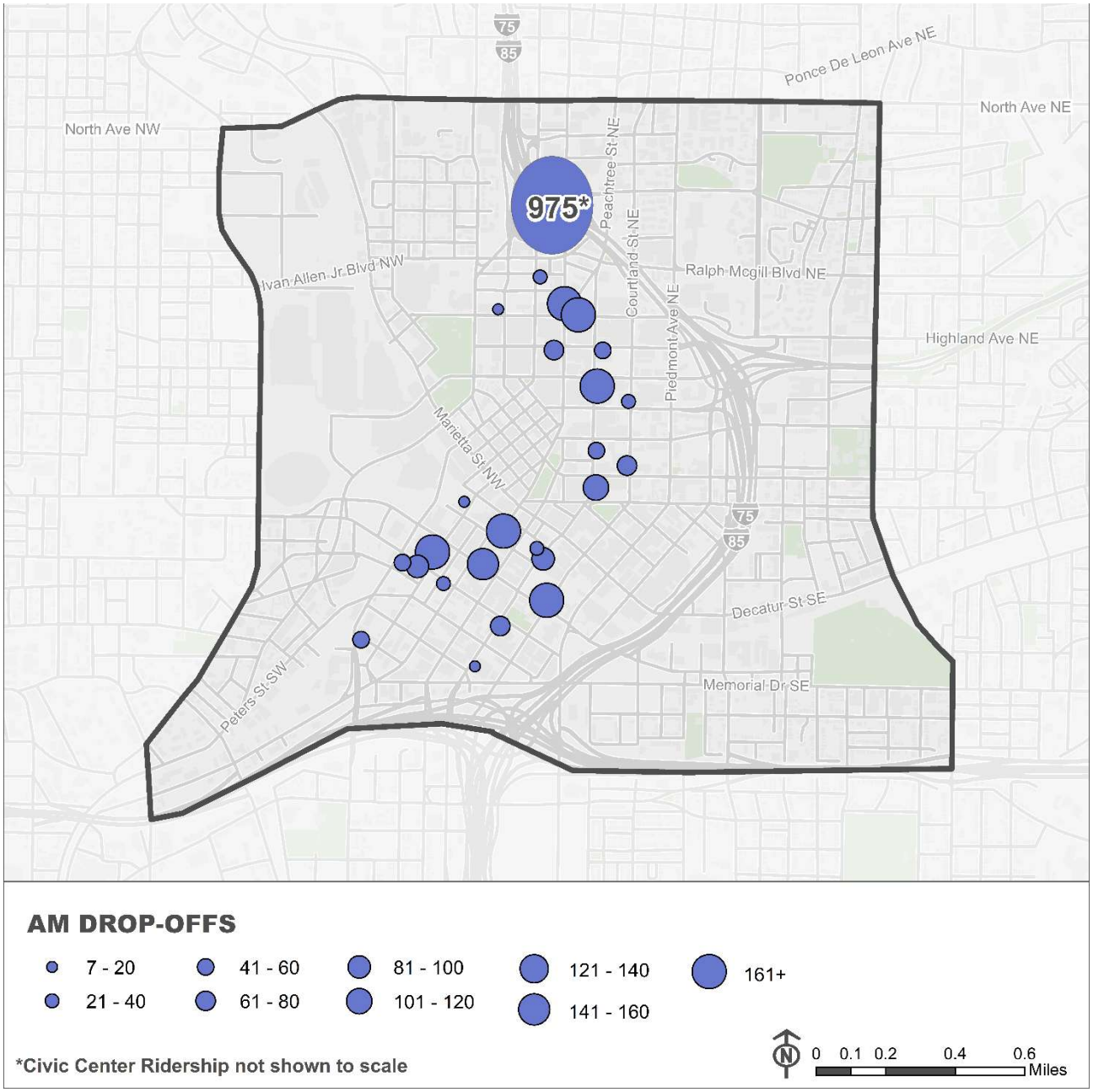
- Northern Downtown (roughly between Baker Street and Ellis Street), which accounts for 16.7 percent of all alightings in the morning peak. Major attractions at SunTrust Plaza and Peachtree Center account for most of this ridership, although in total there are more than nine stops clustered within a 1.6-square mile area.

- Southern Downtown, including Five Points, the Federal Building, and the State Capitol, which account for 38.3 percent of all alightings in the morning peak. This ridership is divided among more than 27 stops within this cluster.

[12] The Transit Capacity and Quality of Service Manual, page 206.

Additionally, a relatively small number of alightings occur between the northern and southern clusters, and many of the stops in the west of Downtown near the Centennial Park District (served primarily by CobbLinc along Marietta Street, Ted Turner Drive and Centennial Olympic Park Drives) show only minimal usage.

Figure 3.8 Commuter Bus Passenger Volumes during the Morning Peak



4.0 Operating Challenges

The infrastructure in Downtown Atlanta was not necessarily designed to accommodate the large number of commuter buses that are currently operating in the area. As Downtown continues to evolve and develop, providing better infrastructure will help ease operations and make travel by all modes safer, more comfortable, and more seamless. This section highlights how complicated it is to balance the needs of multiple modes within the dense core of Downtown Atlanta.

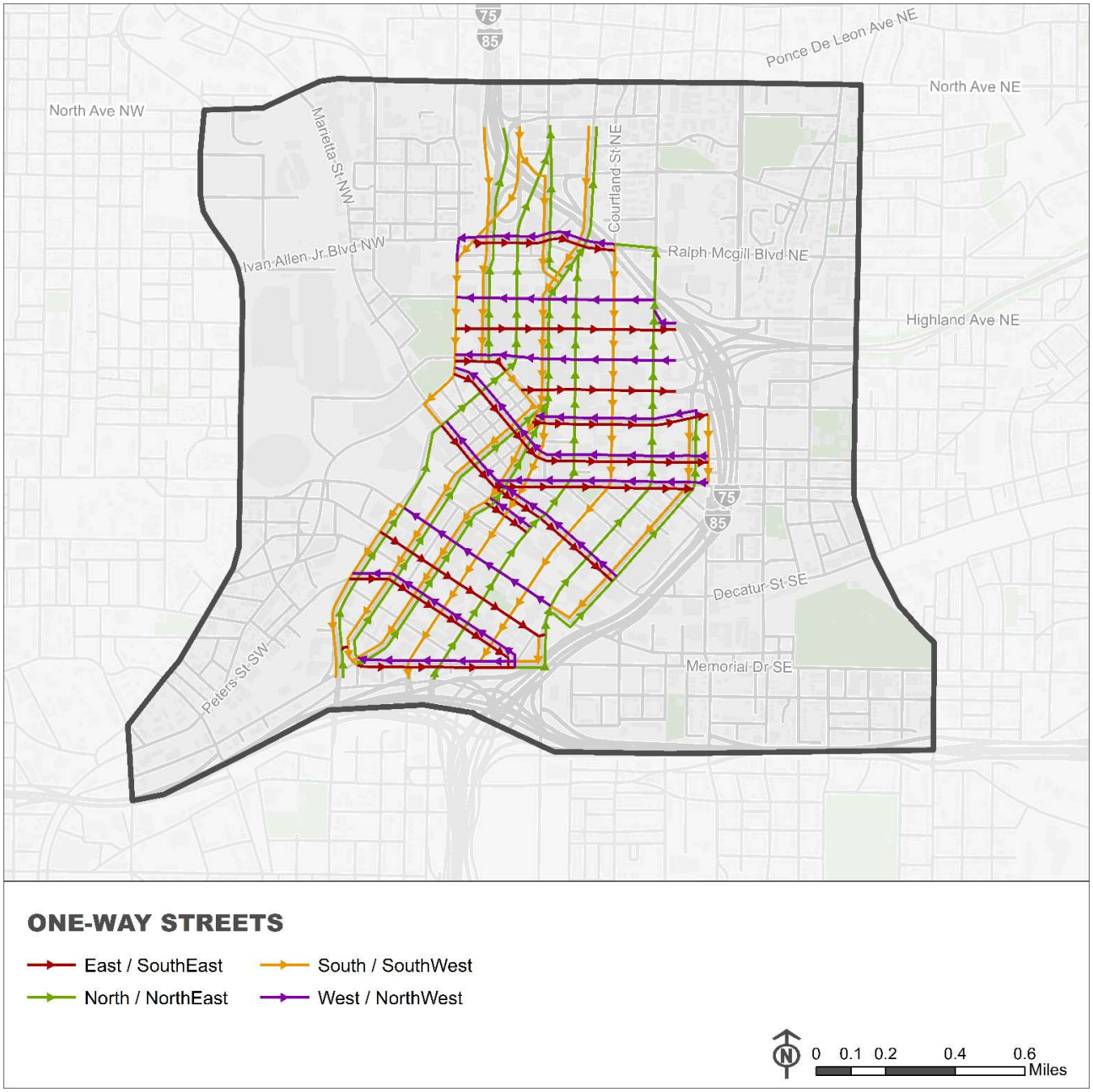
4.1 One-Way Streets

Downtown Atlanta's roadway network includes a large number of one-way streets as shown in Figure 4.1, which can complicate commuter bus operations in a number of ways. One-way street grids:

1. Offer fewer circulation options for buses, by limiting the number of potential paths in any direction and requiring larger looping patterns.
2. Necessitate different routing in the morning and evening peaks, making it harder for passengers to find/access stops, and possibly increasing walking distances.
3. Can encourage higher vehicle speeds and often do not include median islands, which can make the network uninviting to pedestrians and bicyclists.

The one-way streets along Martin Luther King Jr Drive and Mitchell Street have become a core part of all transit commuter routes, making a loop in the southern part of Downtown.

Figure 4.1 One-Way Streets in Downtown



4.2 Bicycle Facilities

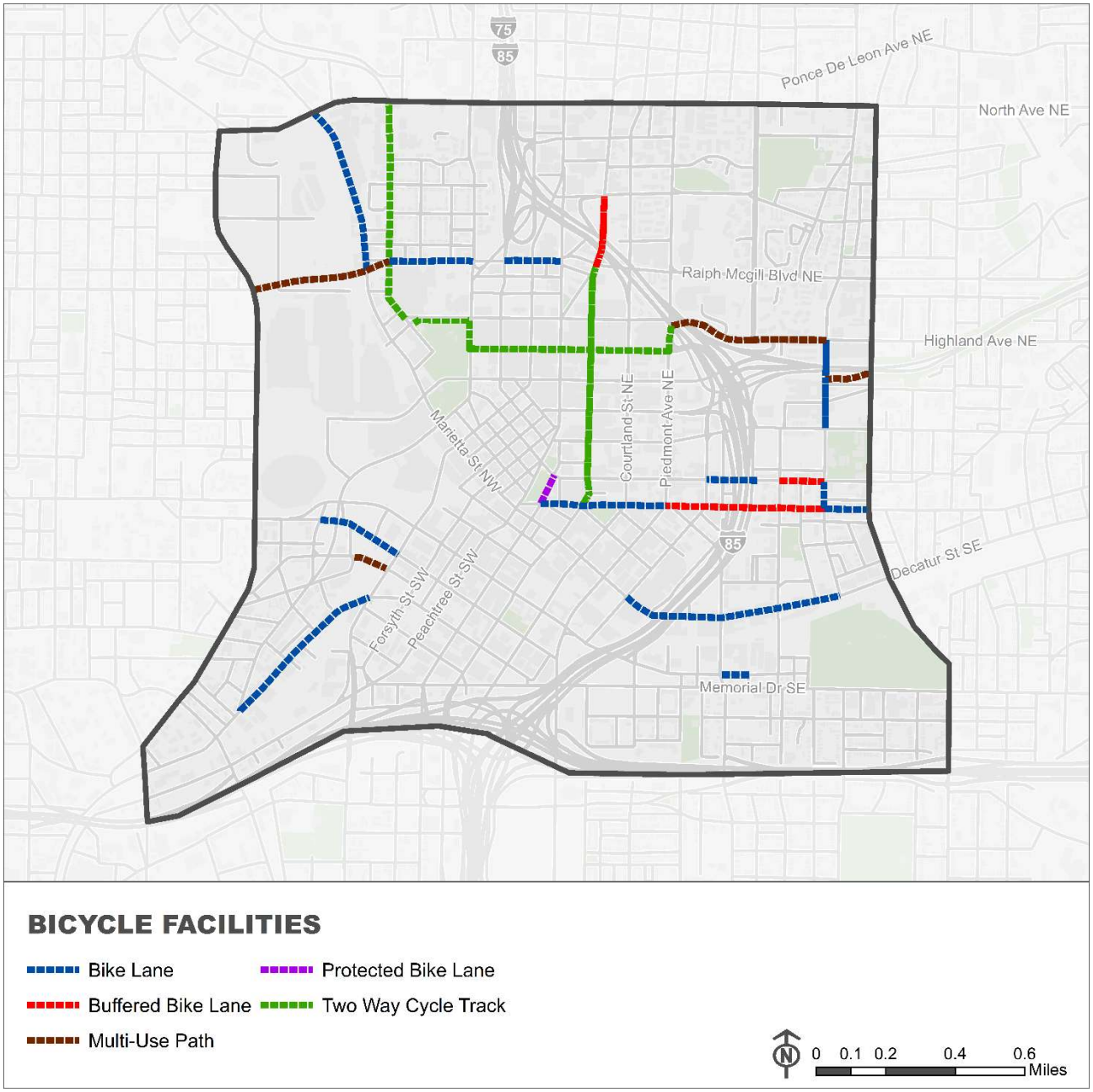
The Downtown Atlanta Master Plan has established a vision to provide alternative modes of travel through the integration of safety, public health, and sustainability. A key part of achieving this vision is ensuring that there are safe, dedicated spaces for bicyclists to use when traveling to and through Downtown. Integrating bicycles with transit services supports a transportation network that fosters mobility and creates livable communities that can improve the quality of transit services so that active transportation can easily be combined with bus transit for longer regional trips.[13] Unfortunately, heavy bus volumes and frequent bus

[13] Atlanta Regional Commission, Bike-Pedestrian Plan—Walk, Bike, Thrive!

stops can conflict with these types of dedicated facilities, creating operational concerns where buses must cross into a bike lane to access stops or make a turn. Because roadway space is limited in Downtown, it may be beneficial to bicyclists, bus riders, and drivers to allocate dedicated spaces for each mode on different corridors within Downtown. As noted by stakeholders, bus drivers can easily get overwhelmed while trying to operate on narrow streets that include bicycle lanes and changes to bike infrastructure has led to concern from many drivers.

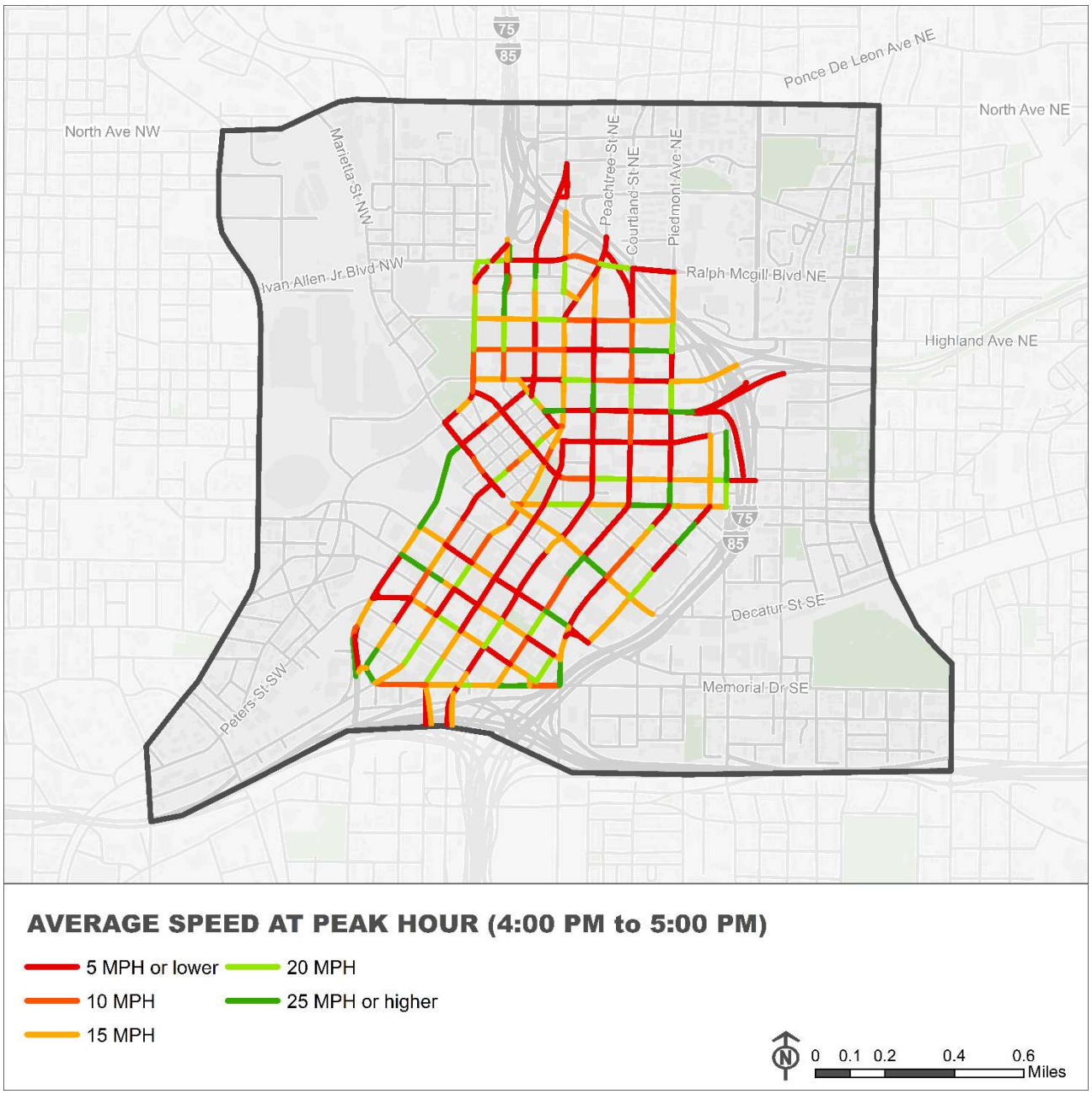
Figure 4.2 shows the locations of existing bike facilities in Downtown, many of which are also corridors with significant volumes of commuter buses during the peak periods (especially Peachtree Center Ave). Many stakeholders have expressed the continued need to expand this bike infrastructure in such a way that will accommodate safe and efficient operations for both bikes and buses. As bicycle facilities and routes increase in Downtown Atlanta, transit agencies will need to work side by side with bicycle/pedestrian planners to address these difficulties and place emphasis on creating a transportation network that is safe for all road users.

Figure 4.2 Existing Bicycle Facilities in Downtown



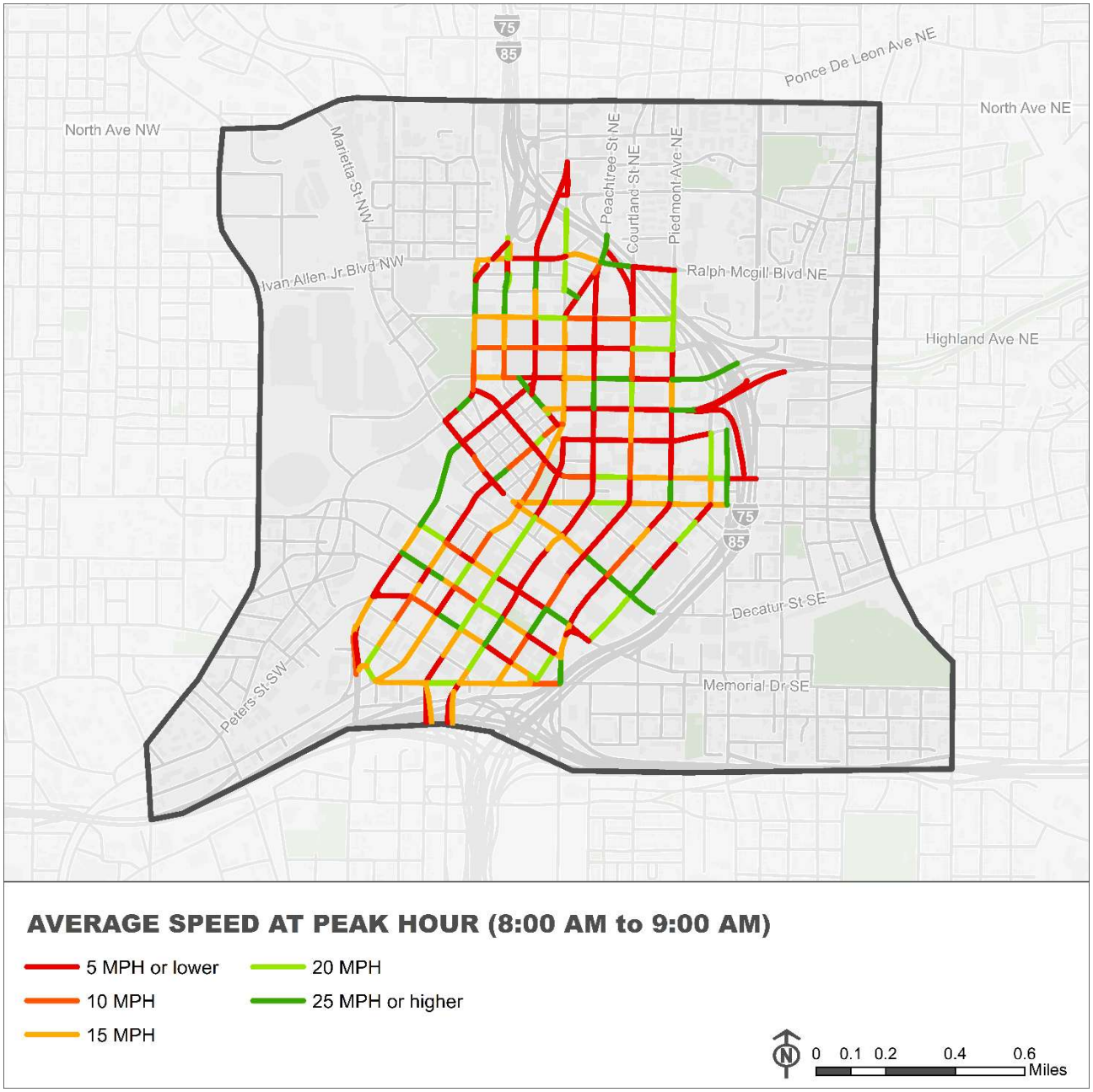
4.3 Roadway Congestion

Congestion can have a real impact on buses' ability to carry passengers efficiently as shown in Figure 4.3 and Figure 4.4 congestion in Downtown is particularly acute during the peak hours. Downtown vehicular speeds during morning and evening peak hours are fairly low, with many roadways operating below 15 miles per hour. In fact, the average speed during the evening peak hour (4:00 p.m. to 5:00 p.m.) in Downtown is 5 mph or less



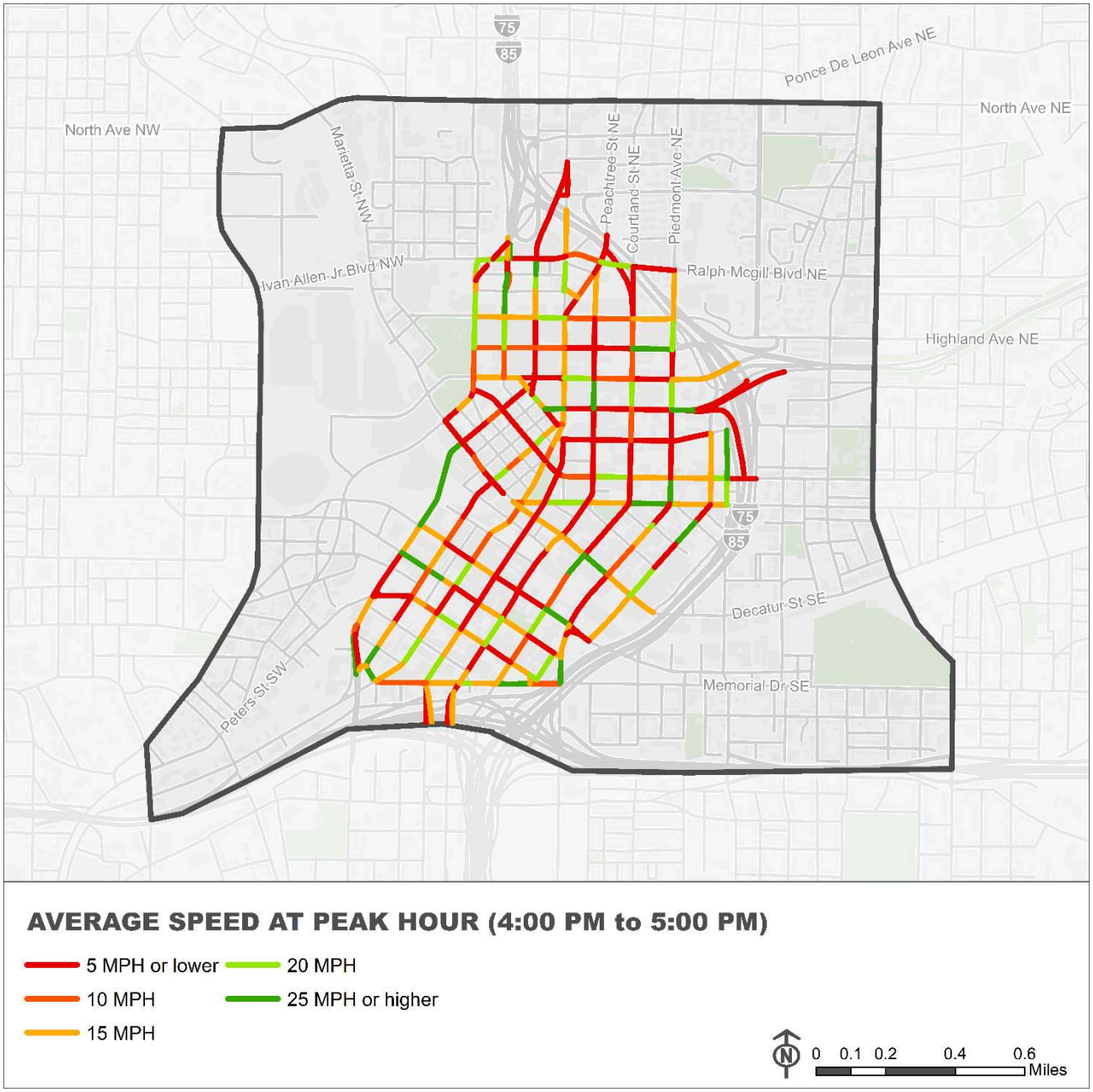
in many locations. This is not surprising due to the level of development, street widths, and the number of intersections throughout the Downtown area. Streets with higher average speeds are primarily towards the outskirts of the heart of Downtown with lower density, such as Ted Turner Drive and Jesse Hill Jr Drive. In addition to slowing travel speeds, this level of congestion can make it difficult to meet schedules, and accurately predict when buses will arrive at specific stops Downtown. Stakeholders have reported customer dissatisfaction and impatience in the unpredictability.

Figure 4.3 Average Speed of Vehicular Travel During the Morning Peak Hour



Source: Streetlight Data, January to December 2019.

Figure 4.4 Average Speed of Vehicular Travel During the Afternoon Peak Hour



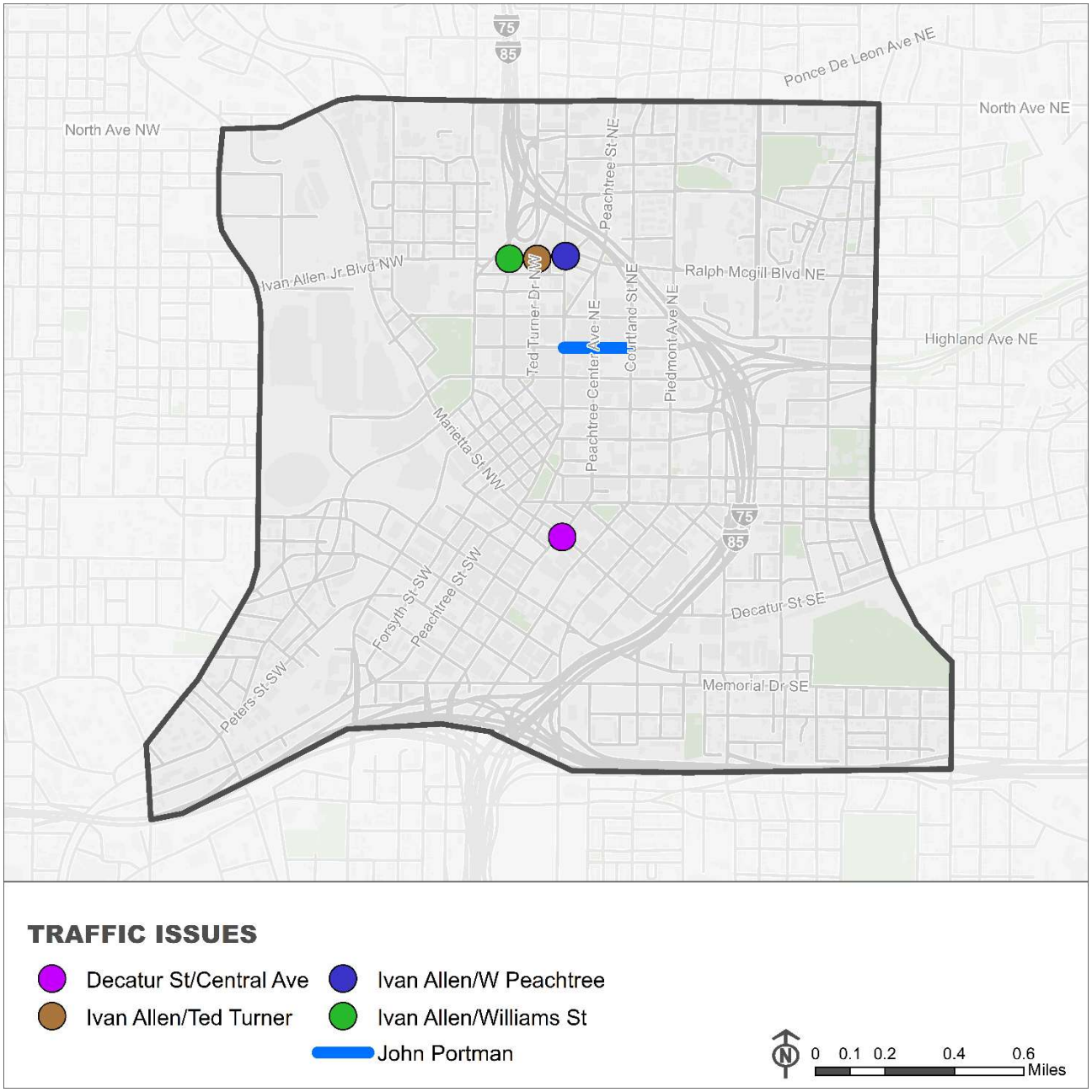
Source: Streetlight Data, January to December 2019.

In addition to this roadway congestion, stakeholders and bus operators have identified a number of locations in Downtown where additional delays occur due signal delays and/or difficult turns. As identified in Figure 4.5, these locations include:

- High-occupancy vehicle exit at Williams Street onto Ivan Allen Jr. Blvd: No protected left turn and the connected intersection at West Peachtree Street can become congested (identified in purple in Figure 4.5).

- Left Turn at Ted Turner Dr and Ivan Allen Jr. Blvd: Exiting to the Civic Center can be very difficult and can take up to 10 minutes to complete the turn (identified in brown in Figure 4.5).
- Intersection of Decatur Street and Central Avenue around Georgia State: Congestion issues and conflicts with traveling trucks, vehicles, bikes, pedestrians, and other bus routes (Identified in pink in Figure 4.5).
- John Portman Blvd between Peachtree Center and Courtland Street: insufficient curb space (Identified in blue in Figure 4.5).

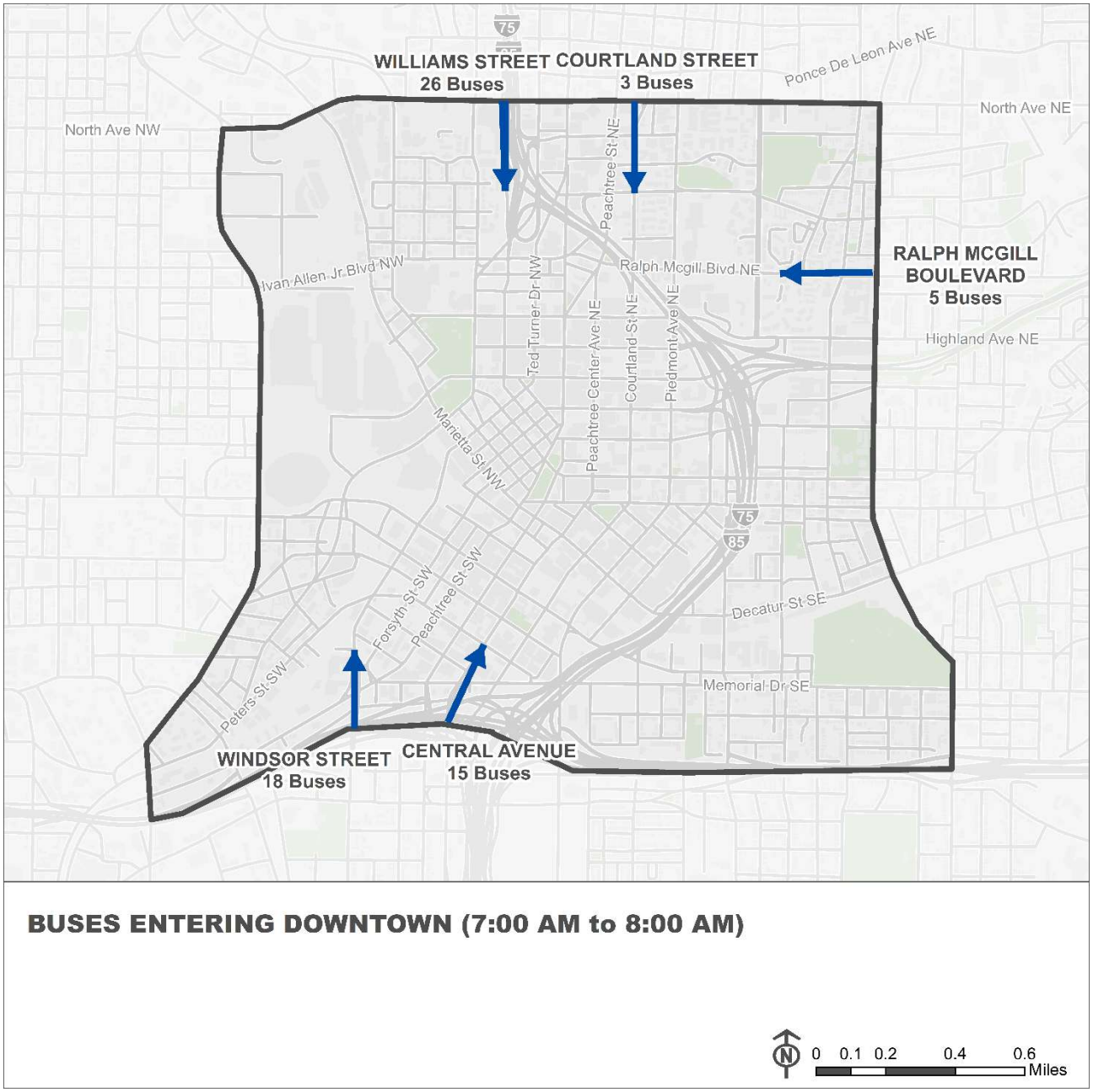
Figure 4.5 Stakeholder Identified Traffic Issues



4.4 Lack of Dedicated Staging

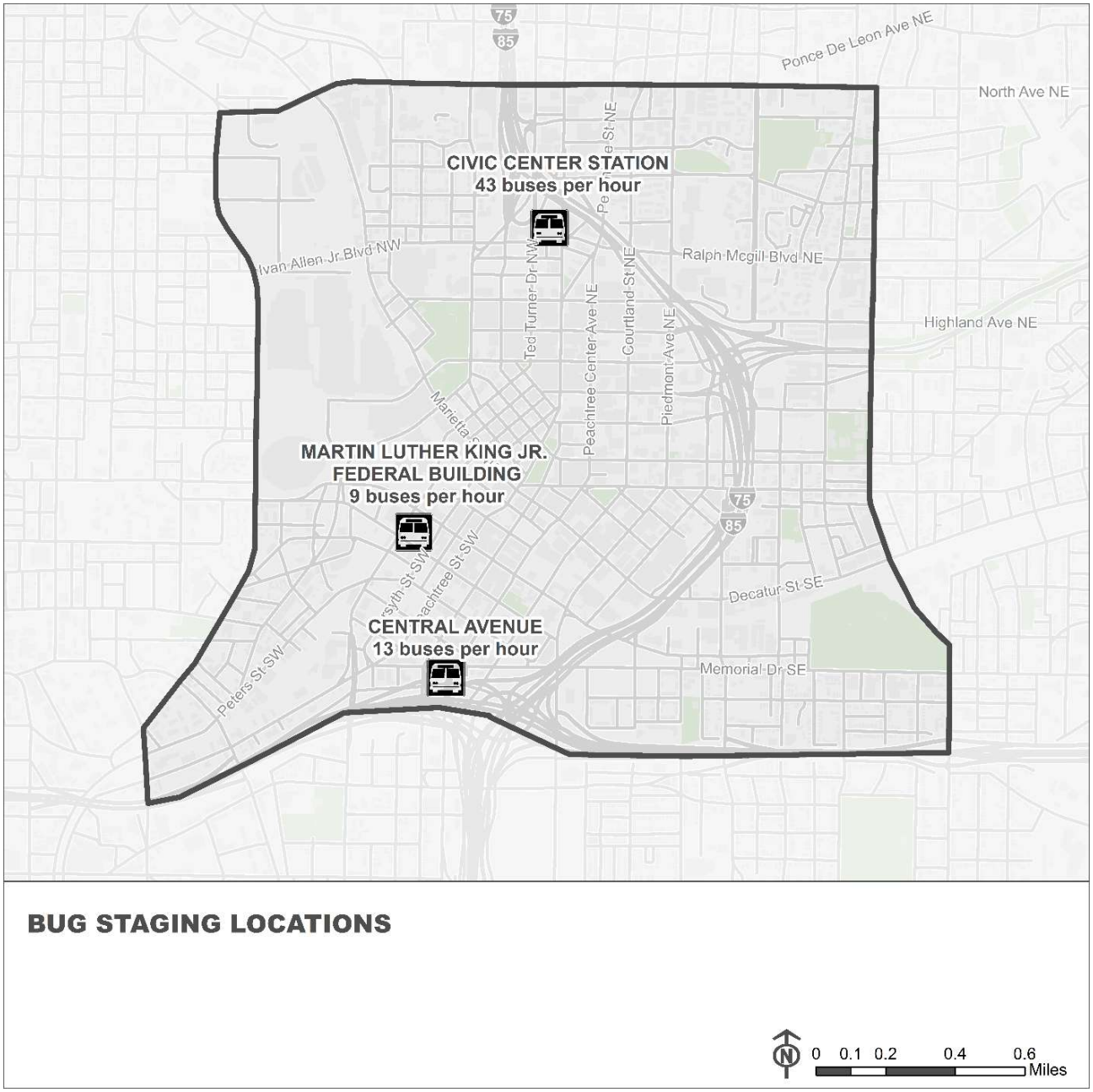
The many commuter bus routes that serve Downtown enter the study area from five primary entry points: southbound via Williams Street and Courtland Street; westbound via Ralph McGill Boulevard; northbound via Central Avenue; and eastbound via Windsor Street (Figure 4.6). These entry points are the logical gateways either from Midtown or from the interstates which bring the commuter buses in from the suburbs. Because of the number of commuter buses coming in from so many directions and serving so many locations in Downtown and in adjacent neighborhoods (especially Midtown) it can be difficult to identify streamlined routing that serve the needs of all routes. Additionally, in the evening peak, many of the buses entering Downtown require a staging location in order to ensure that they begin their trips on schedule. As shown in Figure 4.6, staging for a large number of buses is required at both the northern and southern ends of Downtown.

Figure 4.6 Commuter Buses Entering Downtown in the Peak Hour



Three different staging locations in Downtown Atlanta are used by the commuter bus providers to stage an estimated 65 buses per hour (Figure 4.7). The bus providers endeavor to have their buses arrive 10 to 15 minutes before their scheduled start time, but even this short amount of time requires that a large number of buses are waiting to start service during the evening peak, particularly around Civic Center. None of the locations being used for staging were actually designed to accommodate this many parked vehicles, resulting in buses parked in travel lanes, parking lanes, and other undesignated locations.

Figure 4.7 Bus Staging Locations and Volumes



Civic Center station was also not designed to accommodate so many commuter buses loading and unloading simultaneously; lack of space at the platforms results in operational difficulties during platforms, requiring on-sight management and oversight to ensure passengers can safely access their buses from the platform. The issue is further complicated as space is also dedicated to other services, such as Megabus and Transportation Network Companies. At many of the locations used for staging, the weight and heat of the large number of commuter buses has caused the conventional asphalt pavement to warp and generate wave-shaped hills or hummocks along the length of a bus stop of idling location (Figure 4.8). This phenomenon has occurred on some of the streets surrounding Civic Center, in addition to along Forsyth Street.

Figure 4.8 Pavement Warping Examples

5.0 Summary of Needs and Next Steps

This report has highlighted some of the commuter bus challenges associated with achieving the stated vision of a Downtown Atlanta that provides safe, efficient, and convenient mobility for all modes. The existing street grid does not adequately support the operations of all modes and presents particular challenges for commuter buses. As Downtown continues to evolve through new development and improvements to the transportation network, these challenges will only become more pronounced unless solutions are developed and implemented.

Based on the analysis presented in this report, interviews with stakeholders, and a stakeholder work-session, a number of challenges have been identified to the efficient and safe operation of commuter buses within the multimodal transportation ecosystem of Downtown Atlanta. These needs have been distilled into the following categories:

- Dedicated Bus Staging Location(s): The three existing, informal staging areas in Downtown are insufficient for the needs of commuter bus operations in the area. Efficient, on-time operations of the commuter bus system depends on staging locations of sufficient capacity located near the starting points of the routes. Lack of staging locations can also impede other traffic circulation in Downtown, when buses are forced to stage in facilities meant to be used for other purposes.

- Adequate space and amenities at stops and station platforms: Platform capacity is particularly a concern at Civic Center and John Portman Boulevard. Most commuter bus stops Downtown do not have shelters or benches, unless they are co-located with a MARTA stop. The Atlanta Regional Commission (ARC) is leading a project to develop a uniform bus stop signage design standard.

- Travel Speed and Reliability through Downtown: Issues related to travel speeds and reliability are caused by a number of factors, including roadway congestion, intersection delays, a large number of turns, and frequent stops. Turning movements are notoriously troublesome for on-time performance, both because the bus must slow down a considerable amount to turn on tight urban streets, and because pedestrians and other conflicts exist which require the utmost care and attention of bus operators. Simplification of routing through Downtown and consolidation of some stops could help alleviate these issues, but must be balanced with the need to provide access to destinations for passengers. Other improvements that could help address these issues include dedicated bus plans, and signal enhancements that improve operations at intersections.

- Accommodating All Transportation Modes: The Downtown street network needs to accommodate hundreds of commuter and local buses, thousands of personal vehicles, bicyclists and pedestrians in a limited amount of space. By identifying facilities in Downtown that prioritize the movement of each mode can help improve operations and mobility for all users. In addition to improving travel speeds and reliability, consolidating commuter bus routing along fewer corridors in conjunction with the implementation of dedicated bus lanes would make it so that other roadways could be used to prioritize travel for other modes, including cyclists.

- Asphalt Condition: Pavement warping caused by idling buses can be mitigated through the installation of concrete pads at any established staging areas.

All of these needs must be considered within the context of meeting the primary objectives of the commuter bus services: to provide convenient, reliable transit service from the suburbs to destinations Downtown that

encourages commuters to use transit instead of single-occupancy vehicles. Key stakeholders have indicated that while all of these needs are important, the highest priorities include staging locations and limiting commuter bus conflicts with other modes of travel.

These needs and potential solutions will be studied further in the next phase of this study, which will identify recommendations to improve commuter bus service in Downtown.

CAMBRIDGE SYSTEMATICS

Atlanta Downtown Commuter Bus Routing & Infrastructure Study

Recommendations

prepared for

CAP/ADID

prepared by

Cambridge Systematics, Inc.

March 2021

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date

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1.0 Introduction

Downtown Atlanta serves as the economic, logistical, and cultural core of the greater Atlanta region. As a major employment center, numerous commuter bus routes are operated by three agencies which carry passengers between Downtown and the suburbs. These buses operate in this constrained area with little to no dedicated infrastructure, resulting in congestion, operational conflicts and delays for buses and passenger cars alike. Meanwhile, the street network in Downtown needs to comfortably and safely accommodate a range of modes and trips, including pedestrians, bicyclists, streetcar, local buses, trucks, and general traffic.

A thorough review of the operating and infrastructure conditions in Downtown has identified a number of recommendations designed to improve operations of the commuter buses in Downtown Atlanta. These recommendations have been built off of detailed data analysis and interviews with key stakeholders in Downtown, including the commuter bus operators. The sections in this document include:

- **Summary of Recommendations**: Overview of the recommendations.
- **Infrastructure Recommendations**: Recommended infrastructure improvements including the addition of bus lanes, Transit Signal Priority (TSP), staging locations, and other signalization changes.
- **Operating Recommendations**: Recommended changes to the routing of commuter bus routes in Downtown, including changes to bus stop locations.
- **Costs, Impacts, and Benefits**: Analysis and quantification of the impacts of the recommendations.

2.0 Summary of Recommendations

The recommendations developed as part of this study are focused on providing high-quality transit service in Downtown Atlanta, improving operations and efficiency for the commuter bus providers, and encouraging the growth and development of Downtown as a neighborhood where all modes can coexist comfortably and safely. Overall, the recommendations include:

- Development of bus lanes along Courtland Street in the southbound direction and Central Avenue/Peachtree Center Avenue in the northbound direction to help keep buses out of general traffic in order to make travel speeds faster and more reliable for passengers. The bus lane along Courtland Street should be developed first due to the relative ease of constructing the bus lane and the projected impact the bus lane will have on bus speeds.

- Implement Transit Signal Priority (TSP) along Central Avenue/Peachtree Center Avenue, to better facilitate north-south bus travel in the corridor.

- Encourage the cooperation of commuter buses and MARTA BRT buses along Mitchell Street and Martin Luther King Jr. Drive once the Summerhill BRT has launched and bus lanes have been established along these roadways.

- Streamline bus travel paths to take advantage of the new bus infrastructure and make the routes more legible to potential customers.

- Consolidate bus stops to take advantage of the presence of the recommended infrastructure improvements and improve operational efficiency.

- Implement TSP and other signal improvements in specific locations Downtown that present major difficulties for operators.

3.0 Infrastructure Recommendations

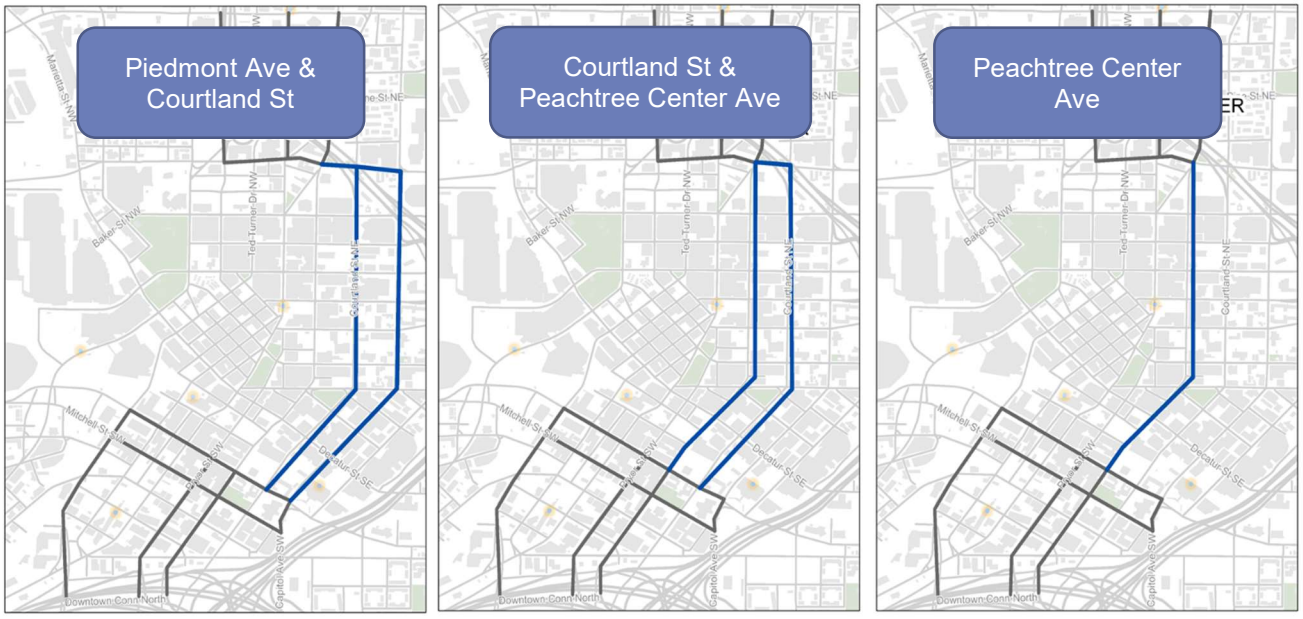
As detailed in the Existing Conditions Report, commuter buses move relatively slowly through Downtown, at an average speed of 7.7 miles per hour. These slow speeds are partially due to traffic congestion, but also due to the large number of turns (an average of seven) and closely spaced stops (on average 800 ft apart) which don't allow the buses to get up to speed.

In recent years, major cities have implemented various strategies to reduce traffic congestion, enhance transit service reliability, and efficiently move passengers through dense street networks. Bus lanes can reduce delays for transit and private vehicles. Designated bus lanes paired with TSP and enforcement can speed up travel times while simultaneously improving overall network mobility throughout Downtown. Other infrastructure improvements are also recommended that could improve operations at specific pain points in Downtown.

3.1 Dedicated Bus Lanes

In order to improve the Commuter Bus operator's ability to efficiently provide high quality service to passengers with destinations in both the northern and southern portions of Downtown, dedicated bus lanes were considered in several potential corridors as shown in Figure 1.

Figure 1 Locations Considered for Bus Lanes

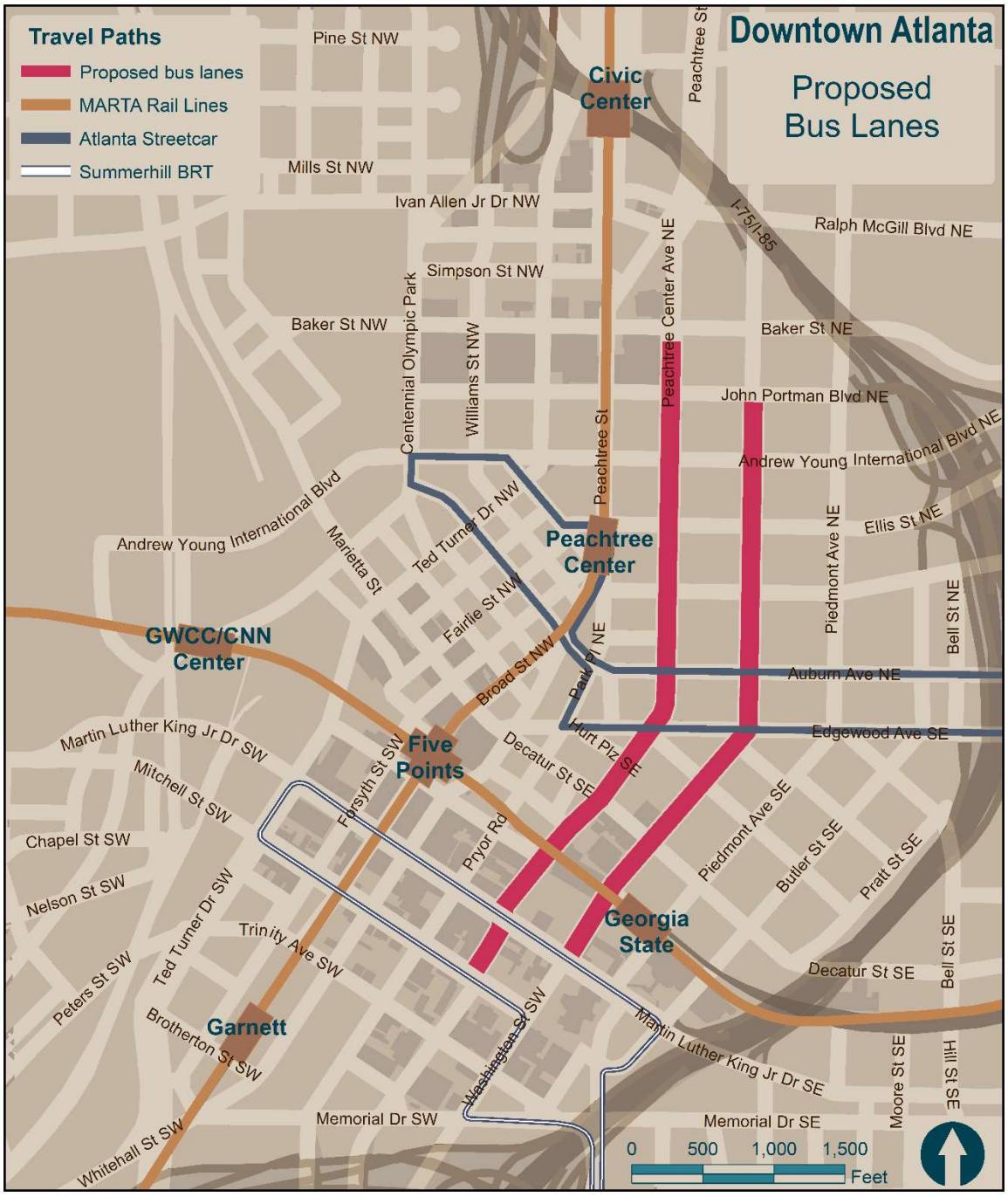


Based on street geometry and the proximity to major employment locations within Downtown, dedicated bus lanes are recommended as shown in Figure 2.

- Southbound on Courtland Street between the far side of the intersection with John Portman Boulevard, where many commuter buses turn right onto Courtland Street, and Martin Luther King Jr. Drive, where many of the commuter buses turn right.

- Northbound on Central Avenue/Peachtree Center Avenue between the far side of the intersection with Mitchell Street, where many commuter buses turn left onto Central Avenue, and Baker Street, where many of the commuter buses turn left.

Figure 2 Proposed Bus Lanes

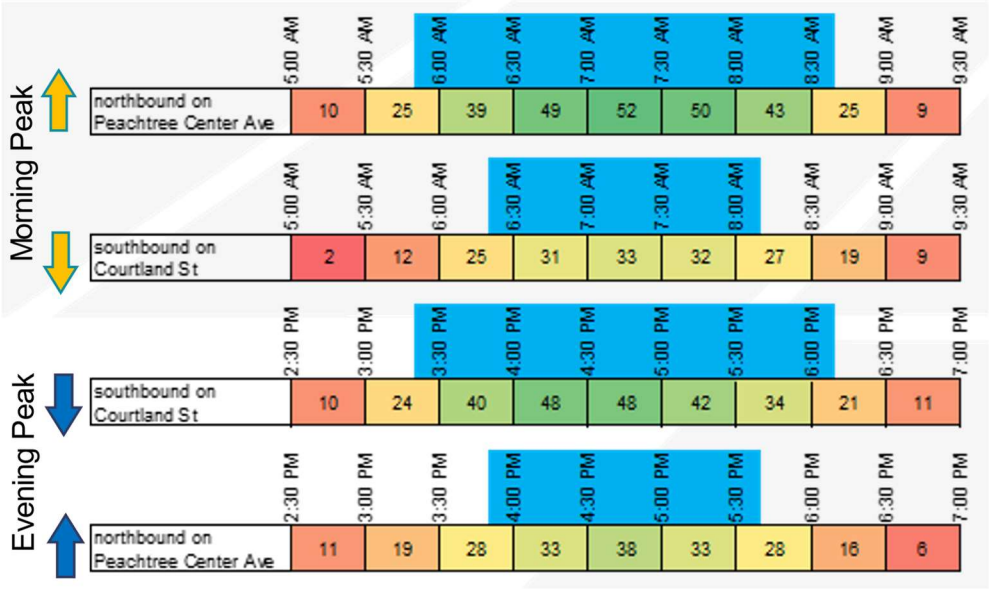


The lanes should be painted to indicate the bus priority, in addition to signage erected along the corridors. Private vehicles making right-turns can be accommodated with breaks in the paint a certain distance before intersections, as well as signage that indicates the ability to use the lane only for short distances before the

turn. Detailed design will need to consider these issues, location and design of stops, and the ideal treatments at each intersections along these corridors.

The volume of buses that would use these bus lanes is shown in Figure 3. These volumes incorporate the routing recommendations outlined in Section 4.

Figure 3 Commuter Bus Volumes During Peak Periods



Source: General Transit Specific Feeds; CobbLinc: 2019-09-08—2020-09-08, GCT: 2018-06-11—2020-01-01; Xpress: 2019-09-18—2019-12-18.

Based on the volumes and schedules of the commuter buses, the bus lanes only need to be implemented during the peak periods, as outlined in Table 1. These represent the minimum timeframe for the dedicated bus lanes; longer morning hours could be imposed on Courtland Street in order to provide more symmetrical hours of operations that are simpler for the public to understand and remember. During the off-peak hours, the lanes could be used for on-street parking and/or loading zones. However, the operation of time-dependent bus lanes can be a challenge for enforcement, and the efficacy of various enforcement techniques will need to be considered before a final decision can be made on the operation of the bus lanes.

Table 1 Recommended Bus Lane Hours of Operation

Bus Lane Hours of Operation	Courtland Street (southbound)	Central Avenue and Peachtree Center Avenue (northbound)
Morning start time	6:00 AM	5:30 AM
Morning end time	8:00 AM	9:30 AM
Afternoon start time	3:00 PM	3:00 PM
Afternoon end time	6:00 PM	6:00 PM

In addition to these proposed north-south bus lanes, dedicated bus lanes are also planned for both Mitchell Street and Martin Luther King Jr. Drive as part of the rollout of the Summerhill BRT project. These bus lanes

should also be made available for use by the commuter buses, both to decrease travel times for the commuter buses, and to make more efficient use of the dedicated infrastructure.

Equally important to design considerations will be working with the City of Atlanta to implement strong enforcement policies that ensure that the bus lanes are only used by authorized vehicles during the designated time periods. Coordination with police, on-street enforcement cameras and even on-board enforcements cameras are all enforcement strategies that have been successfully implemented in other cities. Without strong enforcement, any operational enhancements promised by bus lanes cannot be fully realized.

This network of Downtown bus lanes will bring a range of benefits that should improve operating speeds and reliability for commuter buses. Faster, more reliable buses should in turn help attract more passengers to the commuter bus service.

3.2 Signalization Improvements

Transit Signal Priority (TSP) has the potential to further enhance commuter bus operations in Downtown, by helping buses avoid lengthy delays at intersections and improving speed and reliability beyond dedicated bus lanes alone. TSP is most appropriate on roadways with frequent signals and where a large portion of delay occurs at these signals. By analyzing congestion patterns in Downtown using both 2019 Streetlight data and VISSUM model the analysis determined how much of the delay in the corridor is associated with signals and how much is associated with traffic congestion, as shown in Table 2.

Table 2 Congestion and Signal Delay

		Delay Associated with Signals	Delay Associated with Congestion
Morning Peak	Northbound on Central/Peachtree Center Ave	63%	37%
	Southbound on Courtland Street	25%	75%
Evening Peak	Northbound on Central/Peachtree Center Ave	65%	35%
	Southbound on Courtland Street	18%	82%

Based on this analysis, most of the delay along the Central Avenue/Peachtree Center Avenue corridor occurs at intersections which are spaced close together. Bus lanes alone will not achieve the desired improvements in northbound travel speeds and reliability, and simple changes to signal timings will have limited impacts once the bus lanes are implemented. TSP will enhanced buses' ability to flow steadily along the corridor and not be interrupted by traffic signal delays. Additional analysis, including simulation of the corridors will be necessary in order to ascertain the specific time savings possible for buses at each intersection.

The corridor along Courtland Street does not have the same level of signal delay and would not benefit as much from the investment in TSP infrastructure. After implementation of the Courtland Street bus lane, the question of TSP implementation in the corridor may warrant reconsideration.

In addition to the benefits of TSP, several other locations were identified that cause significant delays for bus operations. While the TSP improvements and the recommended routing changes outlined in Section 4 may solve some of these issues, additional improvements to commuter bus operations are possible simply by implementing protected left-turn cycles at a few locations, especially during the peak periods. The two locations identified include:

- The I-75/I-85 exit at Williams Street onto Ivan Allen Jr. Boulevard, which sees high volumes of left-turning commuter buses from the HOV lane during the morning and evening peak period. Significant recurring delays were reported for left-turning buses.

- Ivan Allen Jr. Blvd at Ted Turner Drive where a large number of commuter buses make a northbound left turn to access the Civic Center area. This movement is particularly important for deadheading vehicles staging at Civic Center before their afternoon runs.

3.3 Staging

Staging is vital for commuter buses beginning their outbound trips in the evening to serve as a location to wait until the route is scheduled to start so the bus can begin on schedule. Staging is particularly complex in Downtown Atlanta, with few areas that can accommodate the volume of commuter buses waiting. Current staging locations have been identified as inadequate by all stakeholders and operators, as the streets around Civic Center MARTA rail station are saturated with waiting buses in the afternoons, often to the detriment of traffic and the condition of the pavement. Improved staging facilities have been identified as a requirement in order to continue providing high quality commuter bus service to and from Downtown. Without it there are major questions about how commuter bus service should operate in the future, including the suggestion that commuter buses stop serving Downtown directly and instead connect to the MARTA system outside of Downtown which would require passengers to transfer from bus to rail. Because this option would not provide better service to passengers, this study recommends developing the necessary staging infrastructure to support the current and planned levels of commuter bus service.

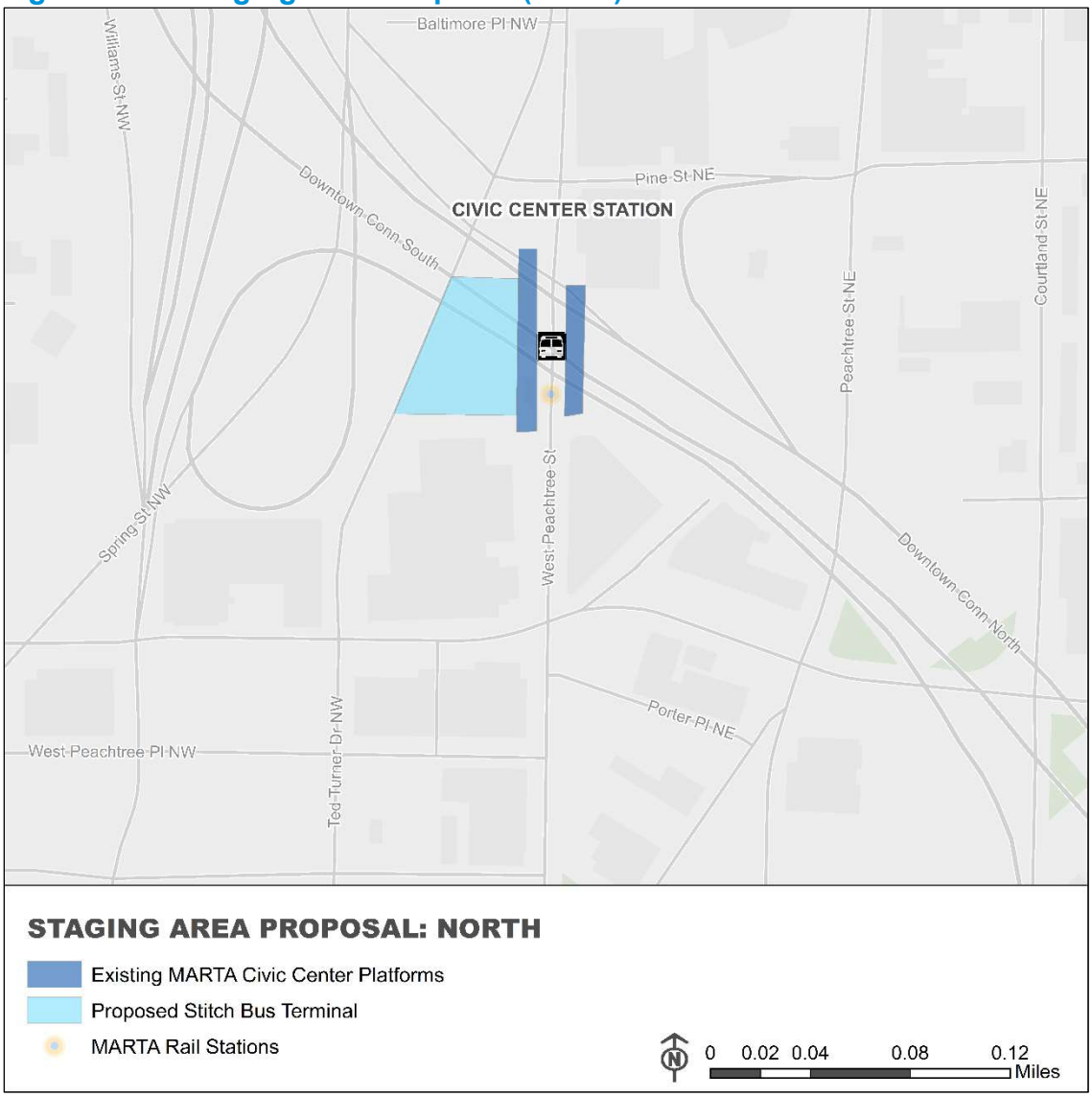
The selected staging location(s) must not greatly impede other vehicular traffic, be easy to navigate for commuter bus coaches, not block business access, and be large enough to handle upwards of 43 buses per hour. A location that also provides drivers with access to support facilities would also be desirable. In addition, having the staging location fairly close to the first stop location would also improve on-time performance. All identified staging locations should be equipped with concrete pads to avoid warping the asphalt pavement, as has been observed in numerous locations around Downtown.

Based on the routing and travel patterns of the commuter bus services, Downtown would be best served by two different staging areas, one located at the north end of Downtown and the another at the south end.

3.3.1 Northern Staging Location

The Civic Center MARTA Station currently stages an average of 43 buses per hour, far more than its capacity. This results in staging buses spilling out onto the adjacent streets during the peak periods. Additional designated staging areas are needed in this area to safely accommodate existing and future commuter bus operations. The bus terminal platform identified in the Stitch Vision (Figure 4) could serve this need while also providing more platform space for buses to load and unload.

Figure 4 Staging Area Proposal (North)



3.3.2 Southern Staging Location

Approximately 24 buses start their trip at the southern end of the study area during the peak half-hour, depending on how the operators schedule their runs and stage their buses. There could be up to 13 buses staging at the same time in the area, even though there is currently no designated space for buses to stage. Operators currently stage in curbside travel lanes on wider, lower volume roadways south of I-20, particularly Central Avenue as shown in Figure 5.

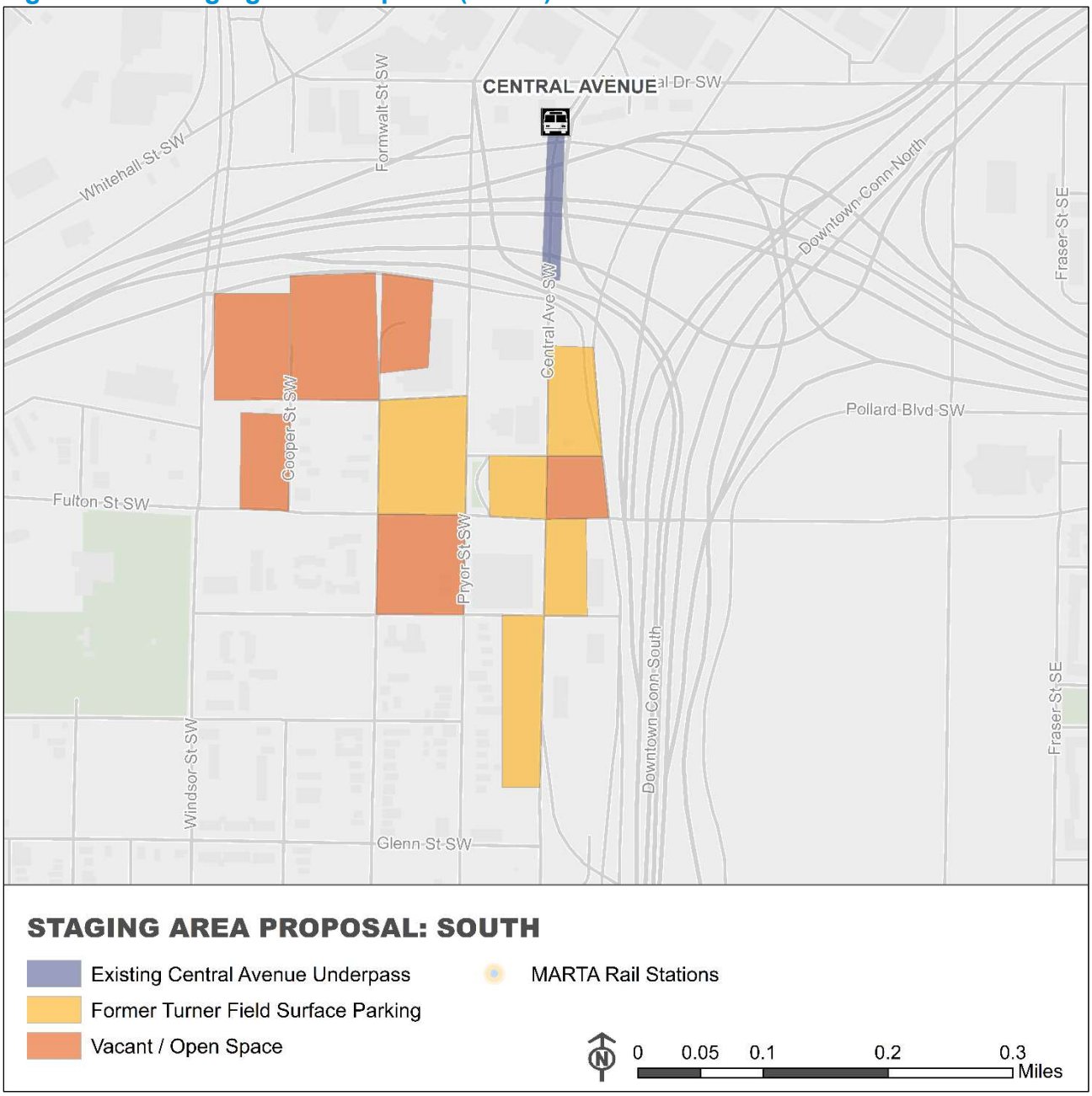
Central Avenue is a good option for staging, as it is a northbound, four lane roadway which makes it easier for operators to approach the route's starting point. The roadway width allows for staging without greatly impeding traffic (unlike other roads in the area such as Capitol Ave or Ted Turner Dr). The segment under the freeway is also not heavily used by pedestrians and is approximately 650 feet long between Rawson

Street and the I-85 off-ramp. However, if this location continues to operate as a staging location, it should be made official with signage and other infrastructure to improve safety for vehicles and buses.

Figure 5 Commuter buses staging in a travel lane on Central Avenue

There are also a few possibilities for a more permanent, designated off-street southern staging location south of I-20, as shown in Figure 6. These options include parcels that are open space as well as surface parking lots that are not fully utilized, including ones that were previously dedicated to Turner Field. Turning these into a paved, staging space would reduce any vehicular conflicts and traffic while also providing drivers opportunities for amenities such as restrooms. Pursuing this option would require additional investigation and partnerships between the land owners, CAP/ADID, the community, and the bus operators.

Figure 6 Staging Area Proposal (South)



4.0 Operating Recommendations

On average, each Commuter Bus Route currently:

- *Travels 2.4 miles in Downtown.*
- *Makes 7 turns.*
- *Stops every 800 feet.*
- *Spends 18 minutes traveling in Downtown.*
- *Travels 7.7 miles per hour.*

The review of existing conditions identified a number of challenges to efficiently operating commuter bus service in Downtown Atlanta while balancing the need for dedicated space for multiple modes including private cars, pedestrians, and bicyclists. Other challenges include a roadway network with many one-way streets, roadway congestion and high volumes of vehicle traffic, and the lack of dedicated staging space. Given these challenges, there are limited options for commuter bus operations, and commuter buses tend to move slowly through Downtown, getting stuck in traffic, stopping frequently, and making a large number of turns.

The implementation of the infrastructure improvements highlighted in Section 3 will provide a faster and more reliable north-south path through Downtown. The completion of the Summerhill BRT and the associated bus lanes will provide those same types of enhancements for east-west travel in the southern portion of Downtown. Combined, this network of dedicated bus lanes provides new opportunities for better, faster, and more reliable commuter bus service for passengers, while simultaneously improving operations of the Downtown street grid for all modes. In order to make the most of the infrastructure investments, some adjustments are recommended to the commuter bus routes including travel path adjustments and stop consolidations.

Based on the analysis of existing operating conditions, traffic levels, and ridership, this section presents recommended changes to routing and stop locations. These recommendations should be planned for implementation in coordination with the infrastructure improvements outlined in Section 3. None of these recommendations have yet gone through a public review processes which will be necessary before any changes are actually implemented. This review process may result in additional changes. For the purposes of this report, all routes that follow similar patterns are grouped together in the following sections.

4.1 Xpress Routes 419 and 426

These routes originate in Gwinnett and Rockdale counties, traveling northbound in the morning through Downtown and southbound in the evening. They enter Downtown from Windsor Street/Ted Turner Drive off of I-20 in the morning and exit Downtown in the same location in the evening. They solely serve Downtown, and do not serve Midtown. No routing changes are recommended to these routes, as they are already located to take advantage of both the Summerhill BRT bus lanes on Mitchell St/ Martin Luther King Jr. Dr and on Courtland St and Peachtree Center Ave as shown in Figure 7. There are some changes recommended to stop locations, particularly moving stops to the far sides of intersections to better take advantage of the proposed TSP as shown in Table 3 and Table 4.

Table 3 Xpress Routes 419 and 426 AM Stop Recommendations (Northbound)

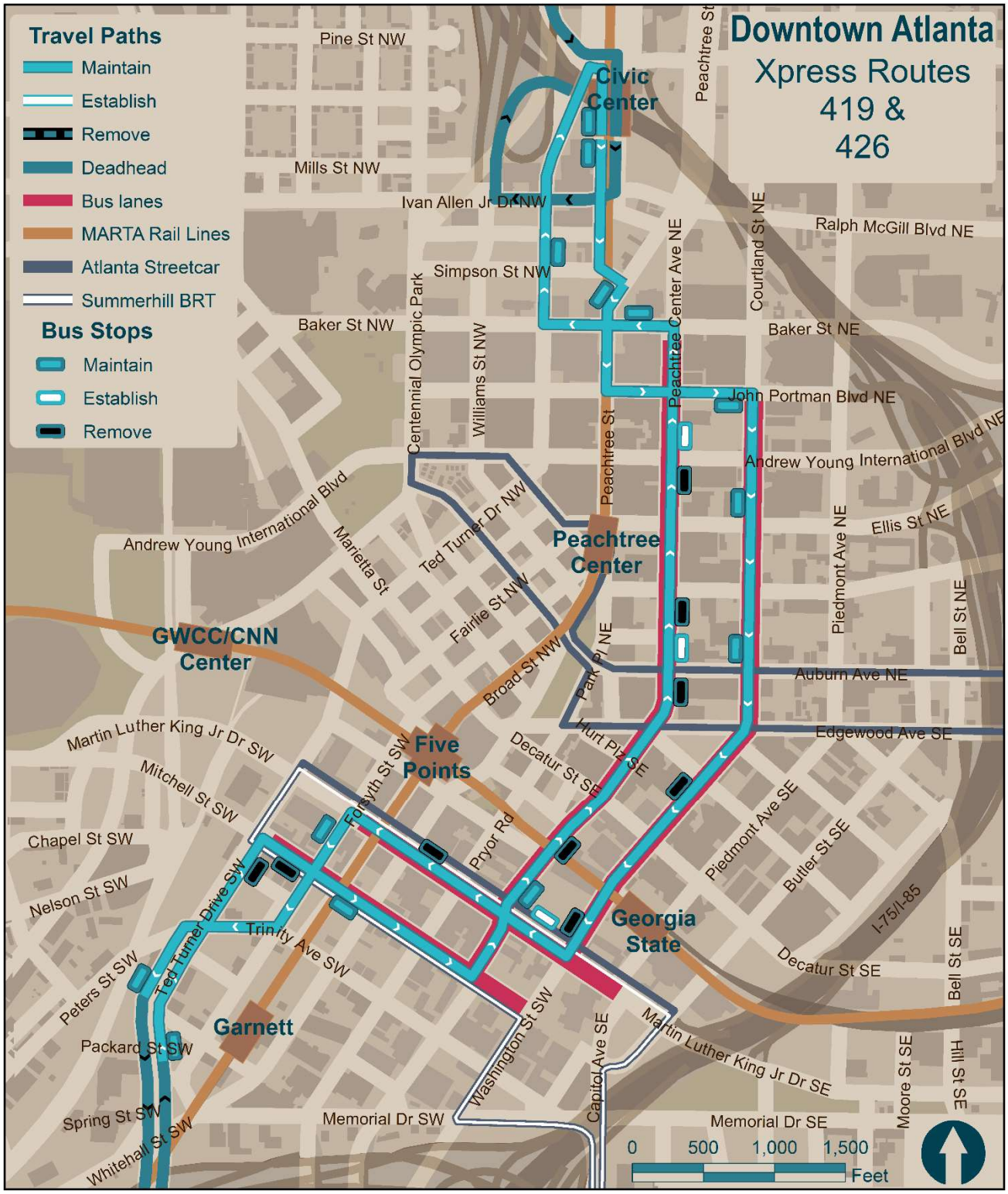
Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Ted Turner Dr @ Brotherton St	Maintain	Ted Turner Dr @ Brotherton St	
Ted Turner Dr @ Mitchell St	Remove		*consolidate stops*

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Mitchell St @ Forsyth St	Remove		*consolidate stops*
Mitchell St @ Peachtree St	Maintain	Mitchell St @ Peachtree St	
Central Ave @ Martin Luther King Jr. Dr	Maintain	Central Ave @ Martin Luther King Jr. Dr	
Central Ave @ Wall St	Remove		*consolidate stops*
Peachtree Center Ave @ Auburn Ave (nearside)	Replace	Peachtree Center Ave @ Auburn Ave (farside)	*relocate as farside stop*
Peachtree Center Ave @ John Wesley Dobbs Ave	Replace		*relocate as farside stop*
Peachtree Center Ave @ Andrew Young Int'l Blvd (nearside)	Replace	Peachtree Center Ave @ Andrew Young Int'l Blvd (farside)	*relocate as farside stop*
Baker St @ Peachtree St	Maintain	Baker St @ Peachtree St	
Ted Turner Dr @ W Peachtree Pl	Maintain	Ted Turner Dr @ W Peachtree Pl	
Civic Center MARTA Station (SB)	Maintain	Civic Center MARTA Station (SB)	

Table 4 Xpress Routes 419 and 426 PM Stop Recommendations (Southbound)

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Civic Center MARTA Station (SB)	Maintain	Civic Center MARTA Station (SB)	
Peachtree St @ Baker St	Maintain	Peachtree St @ Baker St	
John Portman Blvd @ Courtland St	Maintain	John Portman Blvd @ Courtland St	
Courtland St @ Ellis St	Maintain	Courtland St @ Ellis St	
Courtland St @ Auburn Ave	Maintain	Courtland St @ Auburn Ave	
Courtland St @ Gilmer St	Remove		*consolidate stops*
Washington St @ Martin Luther King Jr. Dr	Replace	Martin Luther King Jr. Dr @ Washington St	*relocate as farside stop*
Martin Luther King Jr. Dr @ Peachtree St	Remove		*consolidate stops*
Martin Luther King Jr. Federal Building	Maintain	Martin Luther King Jr. Federal Building	
Ted Turner Dr @ Brotherton St	Maintain	Ted Turner Dr @ Brotherton St	

Figure 7 Xpress Routes 419 and 426



4.2 Xpress Routes 463 and 476

These routes travel northbound in the morning through Downtown and southbound in the evening. They originate in Douglas, Spalding, and Cobb counties, they enter Downtown from Windsor Street/Ted Turner Drive off of I-20 in the morning and exit Downtown in the same location in the evening (Figure 8). They serve both Downtown and Midtown. No routing changes are recommended to these routes, as they are already located to take advantage of both the Summerhill BRT bus lanes on Mitchell St/ Martin Luther King Jr. Dr and on Courtland St and Peachtree Center Ave. There are some changes recommended to stop locations, particularly moving stops to the far sides of intersections to better take advantage of the proposed TSP as shown in Table 5 and Table 6.

Table 5 Xpress Routes 463 and 476 AM Stop Recommendations (Northbound)

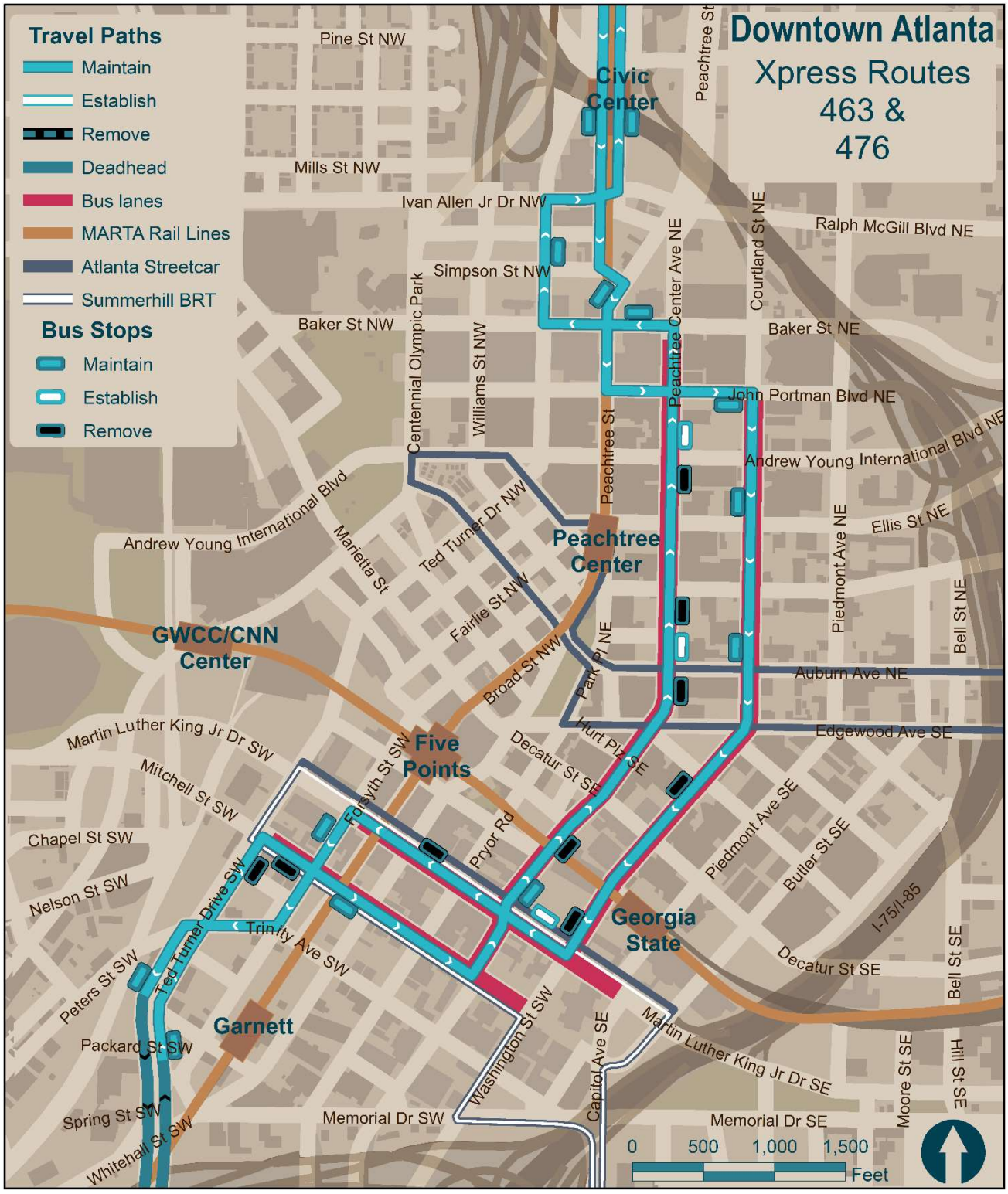
Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Ted Turner Dr @ Brotherton St	Maintain	Ted Turner Dr @ Brotherton St	
Ted Turner Dr @ Mitchell St	Remove		*consolidate stops*
Mitchell St @ Forsyth St	Remove		*consolidate stops*
Mitchell St @ Peachtree St	Maintain	Mitchell St @ Peachtree St	
Central Ave @ Martin Luther King Jr. Dr	Maintain	Central Ave @ Martin Luther King Jr. Dr	
Central Ave @ Wall St	Remove		*consolidate stops*
Peachtree Center Ave @ Auburn Ave (nearside)	Replace	Peachtree Center Ave @ Auburn Ave (farside)	*relocate as farside stop*
Peachtree Center Ave @ John Wesley Dobbs Ave	Replace		*relocate as farside stop*
Peachtree Center Ave @ Andrew Young Int'l Blvd (nearside)	Replace	Peachtree Center Ave @ Andrew Young Int'l Blvd (farside)	*relocate as farside stop*
Baker St @ Peachtree St	Maintain	Baker St @ Peachtree St	
Ted Turner Dr @ W Peachtree Pl	Maintain	Ted Turner Dr @ W Peachtree Pl	
Civic Center MARTA Station (NB)	Maintain	Civic Center MARTA Station (NB)	

Table 6 Xpress Routes 463 and 476 PM Stop Recommendations (Southbound)

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Civic Center MARTA Station (SB)	Maintain	Civic Center MARTA Station (SB)	
Peachtree St @ Baker St	Maintain	Peachtree St @ Baker St	

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
John Portman Blvd @ Courtland St	Maintain	John Portman Blvd @ Courtland St	
Courtland St @ Ellis St	Maintain	Courtland St @ Ellis St	
Courtland St @ Auburn Ave	Maintain	Courtland St @ Auburn Ave	
Courtland St @ Gilmer St	Remove		*consolidate stops*
Washington St @ Martin Luther King Jr. Dr	Replace	Martin Luther King Jr. Dr @ Washington St	*relocate as farside stop*
Martin Luther King Jr. Dr @ Peachtree St	Remove		*consolidate stops*
Martin Luther King Jr. Federal Building	Maintain	Martin Luther King Jr. Federal Building	
Ted Turner Dr @ Brotherton St	Maintain	Ted Turner Dr @ Brotherton St	

Figure 8 Xpress Routes 463 and 476



4.3 Xpress Routes 400 and 416

These routes travel southbound in the morning through Downtown Atlanta and northbound in the evening (Figure 9). They originate in Forsyth and Gwinnett counties, they enter Downtown from Peachtree Street in the morning after serving Midtown, and exit Downtown in the same location in the evening to serve Midtown before heading back to their origins. There are some changes recommended to stop locations, particularly moving stops to the far sides of intersections to better take advantage of the proposed TSP as shown in Table 7 and Table 8. Only one small change in routing is recommended based on low ridership at the first southbound stop at Ivan Allen Jr. Blvd and Alexander Street. The buses can travel straight southbound on Peachtree Street until the stop at Baker Street, rather than turning onto Ivan Allen Jr. Blvd and West Peachtree Street. The remainder of the routing is recommended to stay the same, as they are already located to take advantage of both the Summerhill BRT bus lanes on Mitchell St/ Martin Luther King Jr. Dr and on Courtland St and Peachtree Center Ave.

Table 7 Xpress Routes 400 and 416 AM Stop Recommendations (Southbound)

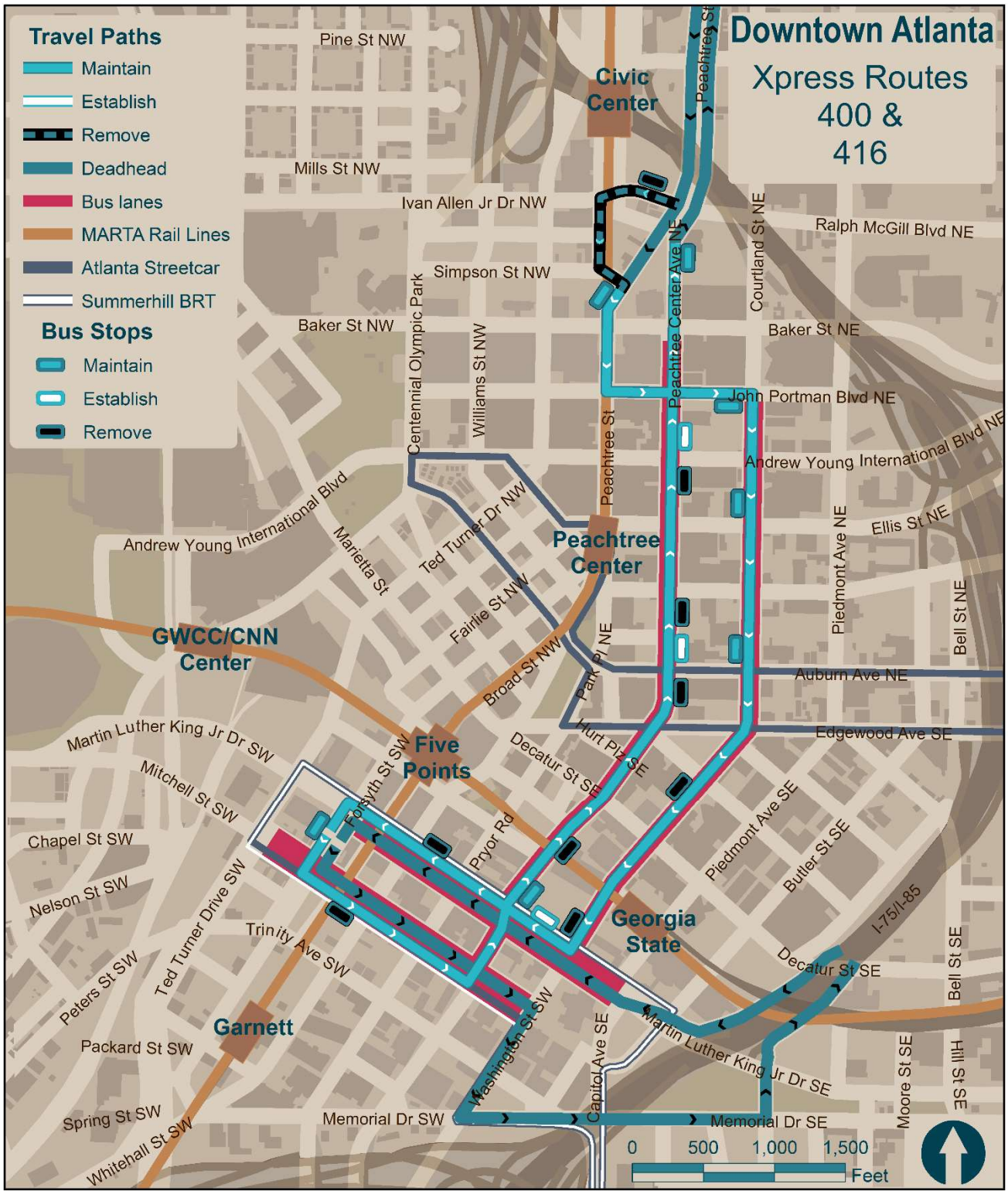
Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Ivan Allen Jr. Blvd @ Alexander St	Remove		*consolidate stops*
Peachtree St @ Baker St	Maintain	Peachtree St @ Baker St	
John Portman Blvd @ Courtland St	Maintain	John Portman Blvd @ Courtland St	
Courtland St @ Ellis St	Maintain	Courtland St @ Ellis St	
Courtland St @ Auburn Ave	Maintain	Courtland St @ Auburn Ave	
Courtland St @ Gilmer St	Remove		*consolidate stops*
Washington St @ Martin Luther King Jr. Dr	Replace	Martin Luther King Jr. Dr @ Washington St	*relocate as farside stop*
Martin Luther King Jr. Dr @ Peachtree St	Remove		*consolidate stops*
Martin Luther King Jr. Federal Building	Maintain	Martin Luther King Jr. Federal Building	

Table 8 Xpress Routes 400 and 416 PM Stop Recommendations (Northbound)

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Martin Luther King Jr. Federal Building	Maintain	Martin Luther King Jr. Federal Building	
Mitchell St @ Peachtree St	Remove		*consolidate stops*
Central Ave @ Martin Luther King Jr. Dr	Maintain	Central Ave @ Martin Luther King Jr. Dr	

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Central Ave @ Wall St	Remove		*consolidate stops*
Peachtree Center Ave @ Auburn Ave (nearside)	Replace	Peachtree Center Ave @ Auburn Ave (farside)	*relocate as farside stop*
Peachtree Center Ave @ John Wesley Dobbs Ave	Replace		*relocate as farside stop*
Peachtree Center Ave @ Andrew Young Int'l Blvd (nearside)	Replace	Peachtree Center Ave @ Andrew Young Int'l Blvd (farside)	*relocate as farside stop*
Peachtree Center Ave @ Peachtree St	Maintain	Peachtree Center Ave @ Peachtree St	

Figure 9 Xpress Routes 400 and 416



4.4 Xpress Routes 413, 480, and 490

These routes travel southbound in the morning through Downtown Atlanta and northbound in the evening (Figure 10). They originate in Gwinnett, Cobb, and Cherokee counties, and enter Downtown from Williams Street off of I-75/I-85 in the morning and exit Downtown in the same location in the evening. They solely serve Downtown, and do not serve Midtown. No routing changes are recommended to these routes, as they are already located to take advantage of both the Summerhill BRT bus lanes on Mitchell St/ Martin Luther King Jr. Dr and on Courtland St and Peachtree Center Ave. There are some changes recommended to stop locations, particularly moving stops to the far sides of intersections to better take advantage of the proposed TSP as shown in Table 9 and Table 10.

Table 9 Xpress Routes 413, 480, and 490 AM Stop Recommendations (Southbound)

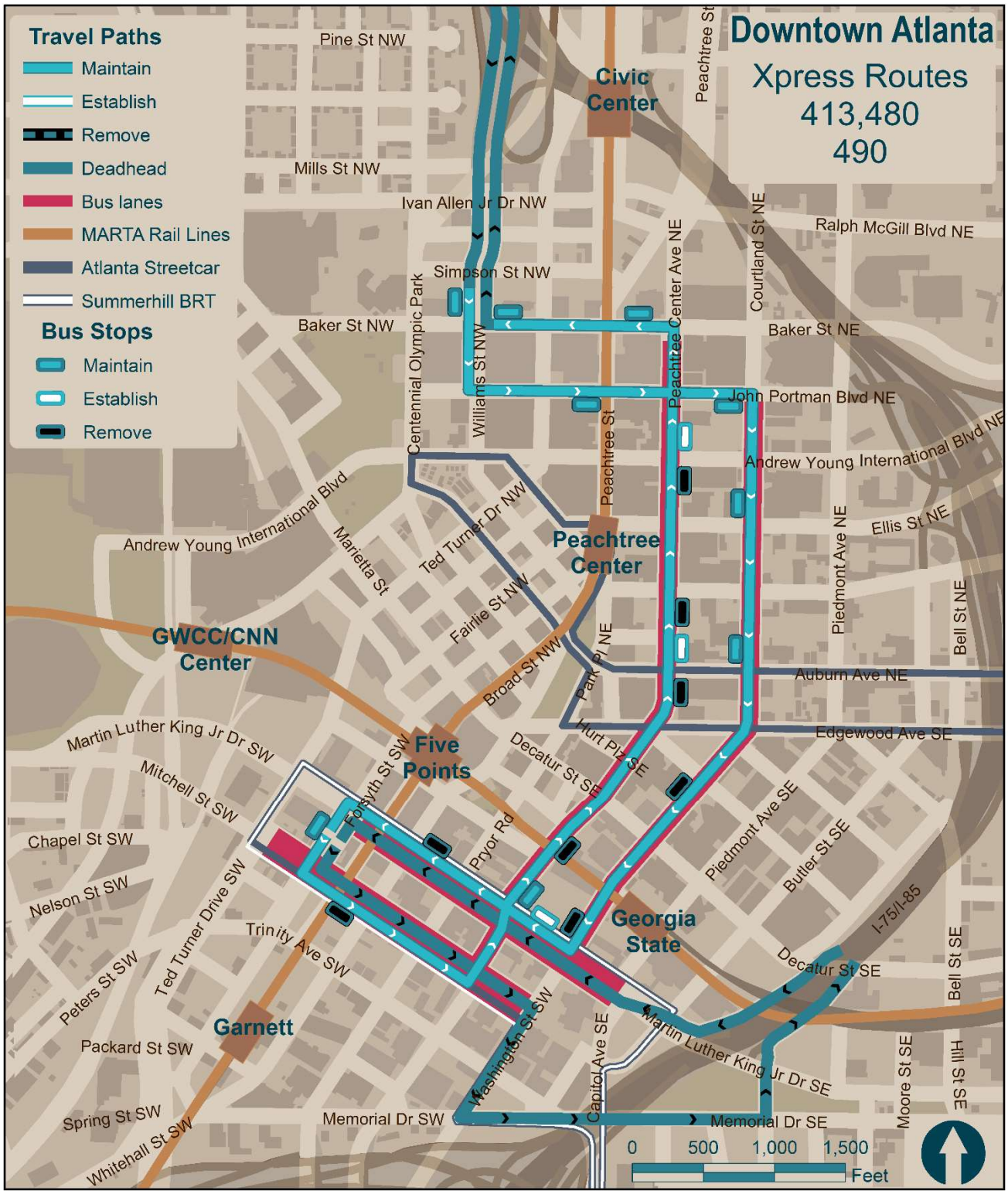
Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Williams St @ Baker St	Maintain	Williams St @ Baker St	
John Portman Blvd @ Peachtree St	Maintain	John Portman Blvd @ Peachtree St	
John Portman Blvd @ Courtland St	Maintain	John Portman Blvd @ Courtland St	
Courtland St @ Ellis St	Maintain	Courtland St @ Ellis St	
Courtland St @ Auburn Ave	Maintain	Courtland St @ Auburn Ave	
Courtland St @ Gilmer St	Remove		*consolidate stops*
Washington St @ Martin Luther King Jr. Dr	Replace	Martin Luther King Jr. Dr @ Washington St	*relocate as farside stop*
Martin Luther King Jr. Dr @ Peachtree St	Remove		*consolidate stops*
Martin Luther King Jr. Federal Building	Maintain	Martin Luther King Jr. Federal Building	

Table 10 Xpress Routes 413, 480, and 490 PM Stop Recommendations (Northbound)

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Martin Luther King Jr. Federal Building	Maintain	Martin Luther King Jr. Federal Building	
Mitchell St @ Peachtree St	Remove		*consolidate stops*
Central Ave @ Martin Luther King Jr. Dr	Maintain	Central Ave @ Martin Luther King Jr. Dr	
Central Ave @ Wall St	Remove		*consolidate stops*

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Peachtree Center Ave @ Auburn Ave (nearside)	Replace	Peachtree Center Ave @ Auburn Ave (farside)	*relocate as farside stop*
Peachtree Center Ave @ John Wesley Dobbs Ave	Replace		*relocate as farside stop*
Peachtree Center Ave @ Andrew Young Int'l Blvd (nearside)	Replace	Peachtree Center Ave @ Andrew Young Int'l Blvd (farside)	*relocate as farside stop*
Baker St @ Peachtree St	Maintain	Baker St @ Peachtree St	
Baker St @ Williams St	Maintain	Baker St @ Williams St	

Figure 10 Xpress Routes 413, 480, and 490



4.5 Xpress Routes 430, 432, 440, 441, 442, and 453

These routes travel northbound in the morning through Downtown and southbound in the evening. They originate in Henry, Clayton, Coweta, and Fulton counties and enter Downtown from Central Avenue off of I-85 in the morning and exit Downtown on Pryor Avenue in the evening. Some of the these routes solely serve Downtown, while others serve both Midtown and Downtown.

The recommendations for these route include:

- Take advantage of the Martin Luther King Jr. Drive bus lane when the Summerhill BRT is implemented.
- Take advantage of the proposed bus lanes on Courtland Street and Peachtree Center Avenue.
- Consolidate stops and move some stops to the far sides of intersections as outlined in Table 11 and Table 12.
- Adjustment to the portion of the travel path for the northbound morning buses that use Peachtree Street near the Five Points MARTA station. This portion of Peachtree Street is currently planned for a series of changes that will narrow the road and make travel for buses more difficult. Once implemented, it is recommended that the buses stay on Central Avenue and serve customers using stops along that roadway as shown in Figure 11.

  An alternative routing option for this portion of the route is included in the Appendix if this Central Avenue routing should prove to be undesirable for riders looking to access the Federal Building further west.

Table 11 Xpress Routes 430, 432, 440, 441, 442, and 453 AM Stop Recommendations (Northbound)

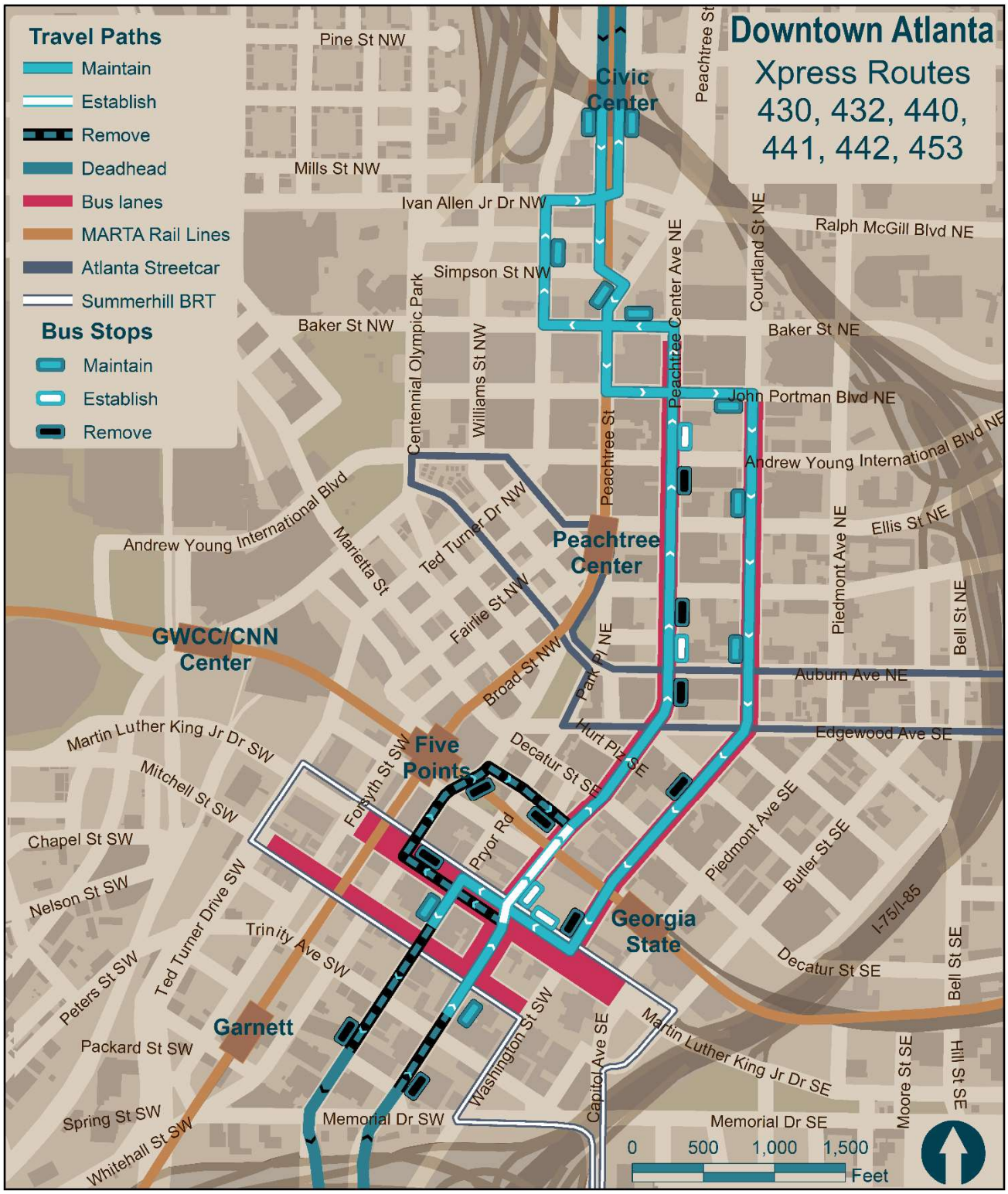
Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Central Ave @ Garnett St	Remove		*consolidate stops*
Central Ave @ Mitchell St	Maintain	Central Ave @ Mitchell St	
Martin Luther King Jr. Dr @ Peachtree St	Remove		*streamline travel path*
Peachtree St @ Five Points MARTA Station	Replace	Central Ave @ Martin Luther King Jr. Dr	*streamline travel path*
Wall St @ Central Ave	Replace		*streamline travel path*
Peachtree Center Ave @ Auburn Ave (nearside)	Replace	Peachtree Center Ave @ Auburn Ave (farside)	*relocate as farside stop*
Peachtree Center Ave @ John Wesley Dobbs Ave	Replace		*relocate as farside stop*

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Peachtree Center Ave @ Andrew Young Int'l Blvd (nearside)	Replace	Peachtree Center Ave @ Andrew Young Int'l Blvd (farside)	*relocate as farside stop*
Baker St @ Peachtree St	Maintain	Baker St @ Peachtree St	
Ted Turner Dr @ W Peachtree Pl	Maintain	Ted Turner Dr @ W Peachtree Pl	
Civic Center MARTA Station (NB)	Maintain	Civic Center MARTA Station (NB)	

Table 12 Xpress Routes 430, 432, 440, 441, 442, and 453 PM Stop Recommendations (Southbound)

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Civic Center MARTA Station (SB)	Maintain	Civic Center MARTA Station (SB)	
Peachtree St @ Baker St	Maintain	Peachtree St @ Baker St	
John Portman Blvd @ Courtland St	Maintain	John Portman Blvd @ Courtland St	
Courtland St @ Ellis St	Maintain	Courtland St @ Ellis St	
Courtland St @ Auburn Ave	Maintain	Courtland St @ Auburn Ave	
Courtland St @ Gilmer St	Remove		*consolidate stops*
Washington St @ Martin Luther King Jr. Dr	Replace	Martin Luther King Jr. Dr @ Washington St	*relocate as farside stop*
Pryor St @ Mitchell St	Maintain	Pryor St @ Mitchell St	
Pryor St @ Garnett St	Remove		*consolidate stops*

Figure 11 Xpress Routes 430, 432, 440, 441, 442, and 453



4.6 CobbLinc Routes 100 and 101

These routes travel clockwise in the morning through Downtown Atlanta, southbound on Courtland Street, westbound on Martin Luther King Jr. Drive, and northbound on Spring Street/Ted Turner Drive (Figure 12 and Figure 13). These routes travel counterclockwise in the evening, southbound on Centennial Olympic Park Drive, eastbound on Mitchell Street, and northbound on Peachtree Center Avenue. They originate in Cobb County and enter Downtown from Williams Street off of I-75/I-85 in the morning and exit Downtown in the same location in the evening. They solely serve Downtown, and do not serve Midtown.

The recommendations for these route include:

- Take advantage of the Mitchell Street and Martin Luther King Jr. Drive bus lanes when the Summerhill BRT is implemented.
- Take advantage of the proposed bus lanes on Courtland Street and Peachtree Center Avenue.
- Consolidate stops and move some stops to the far sides of intersections as outlined in Table 13 and Table 14.
- Streamline and simplify the route by removing the western portion of the route which has very low ridership. Most of the ridership along this western portion can be accommodated with relatively short walks with a few changes to the bus stops.
- The morning service should continue along Courtland Street and Martin Luther King Jr. Drive, but end instead at the Martin Luther King Jr. Federal Building. The only stop with significant ridership not already within a short walk of other stops is the last stop, and the ridership there can be accommodated by the addition of a stop along Ivan Allen Jr. Boulevard prior to the previous first stop at the Civic Center MARTA station. The bus would then travel past Ted Turner Drive and turn north onto West Peachtree Street, avoiding the turn onto Ted Turner Drive that has been a source of delays for these buses. After dropping off passengers at the northbound bus stop for Civic Center MARTA station, the bus can make two right turns to travel back to the second stop at Baker Street.
- After terminating at the Federal Building, the bus can either head back to its origin along surface streets or head eastbound on Mitchell Street to access the interstate.
- For the afternoon travel path, the first stop would be at the Federal Building. For the bus operators to deadhead to this location, they could use the slip ramp from the interstate to Courtland Street, and then take advantage of the bus lane there once it has been constructed. After the new first stop at the Federal Building, the bus would follow the remainder of the travel path that it serves today.

Table 13 CobbLinc Routes 100 and 101 AM Stop Recommendations (Southbound)

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
	Establish	Ivan Allen Jr. Blvd @ Ted Turner Dr	*replacement stop*
Civic Center MARTA Station (SB)	Maintain	Civic Center MARTA Station (NB)	
Peachtree St @ Baker St	Maintain	Peachtree St @ Baker St	
John Portman Blvd @ Courtland St	Maintain	John Portman Blvd @ Courtland St	
Courtland St @ Ellis St	Maintain	Courtland St @ Ellis St	
Courtland St @ Auburn Ave	Maintain	Courtland St @ Auburn Ave	
Courtland St @ Gilmer St	Remove		*consolidate stops*
Washington St @ Martin Luther King Jr. Dr	Replace	Martin Luther King Jr. Dr @ Washington St	*relocate as farside stop*
Martin Luther King Jr. Dr @ Peachtree St	Remove		*consolidate stops*
Martin Luther King Jr. Dr @ Forsyth St	Replace	Martin Luther King Jr. Federal Building	*simplify route*
Forsyth St @ Five Points MARTA Station (NB)	Remove		*simplify route*
Marietta St @ Ted Turner Dr	Remove		*simplify route*
Ted Turner Dr @ Luckie St	Remove		*simplify route*
Ted Turner Dr @ John Portman Blvd	Remove		*simplify route*
Ted Turner Dr @ Baker St	Remove		*simplify route*
Ted Turner Dr @ W Peachtree Pl	Remove		*simplify route*

Table 14 CobbLinc Routes 100 and 101 PM Stop Recommendations (Northbound)

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Civic Center MARTA Station (SB)	Remove		*consolidate stops*
Peachtree St @ Baker St	Remove		*consolidate stops*
Centennial Olympic Park Dr @ John Portman Blvd	Remove		*simplify route*
Centennial Olympic Park Dr @ Andrew Young Int'l Blvd	Remove		*simplify route*
Marietta St @ Spring St	Remove		*simplify route*
Marietta St @ Cone St	Remove		*simplify route*
Marietta St @ Fairlie St	Remove		*simplify route*
Forsyth St @ Five Points MARTA Station (SB)	Remove		*simplify route*
Martin Luther King Jr. Federal Building	Maintain	Martin Luther King Jr. Federal Building	
Central Ave @ Wall St	Replace	Central Ave @ Martin Luther King Jr. Dr	*relocate as farside stop*
Peachtree Center Ave @ Auburn Ave (nearside)	Replace	Peachtree Center Ave @ Auburn Ave (farside)	*relocate as farside stop*
	Establish	Peachtree Center Ave @ Andrew Young Int'l Blvd (farside)	*standardize stops*
Baker St @ Peachtree St	Maintain	Baker St @ Peachtree St	
Ted Turner Dr @ W Peachtree Pl	Maintain	Ted Turner Dr @ W Peachtree Pl	
Civic Center MARTA Station (NB)	Maintain	Civic Center MARTA Station (NB)	

Figure 12 CobbLinc Routes 100 and 101 (AM)

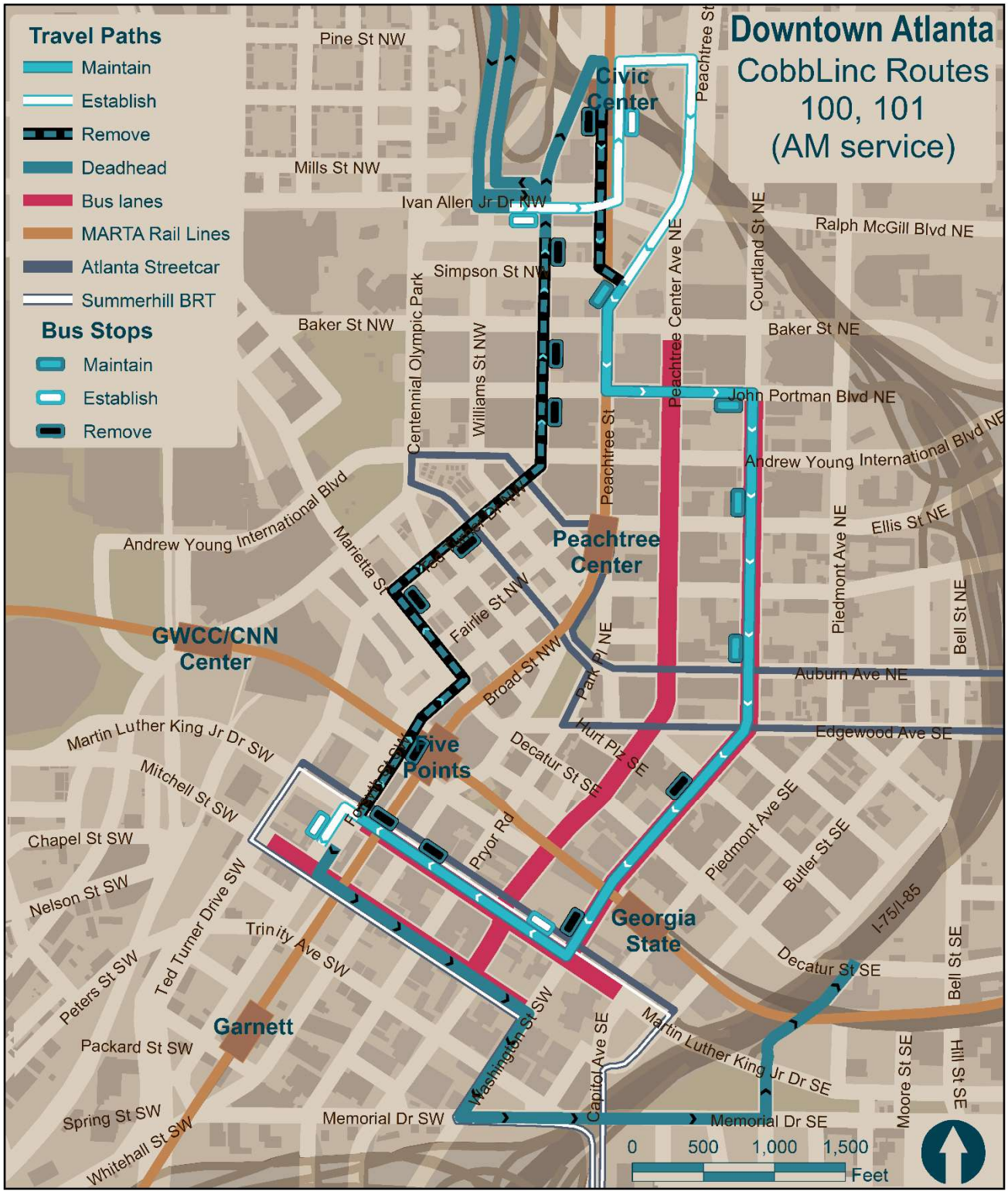
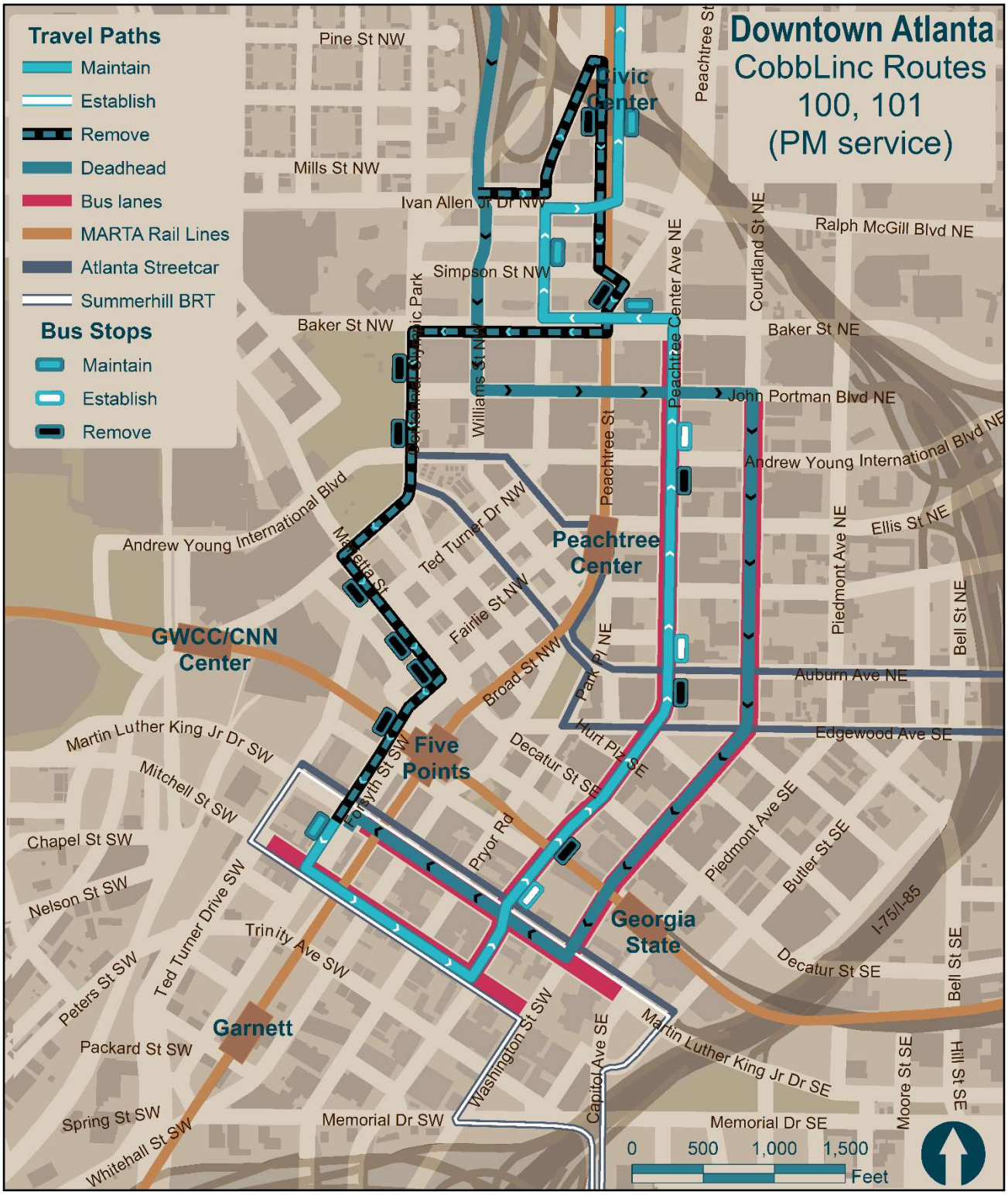


Figure 13 CobbLinc Routes 100 and 101 (PM)



4.7 Gwinnett County Transit Routes 101, 102, and 103

These routes travel southbound in the morning through Downtown and northbound in the evening (Figure 14 and Figure 15). They originate in Gwinnett County and enter Downtown from Williams Street off of I-75/I-85 in the morning and exit Downtown in the same location in the evening. They solely serve Downtown, and do not serve Midtown.

The recommendations for these route include:

- Take advantage of the Mitchell Street and Martin Luther King Jr. Drive bus lanes when the Summerhill BRT is implemented.
- Take advantage of the proposed bus lanes on Courtland Street and Peachtree Center Avenue.
- Consolidate stops and move some stops to the far sides of intersections as outlined in Table 15 and Table 16.
- The afternoon travel path is currently on a new detour due to restrictions on Capitol Square that began in the summer of 2020 and adds extra distance to the route. In order to avoid the additional travel distance without inconveniencing customers with too great a walk, the travel path can be streamlined so that the bus travels north on Central Avenue and then turns left onto Martin Luther King Jr. Drive, not using any of the streets east of Central Avenue. The first stop would be at the Federal Building, and customers that usually use the stops east of Central Avenue can be accommodated by the stop on Central Avenue @ Martin Luther King Jr. Drive.

Table 15 Gwinnett County Transit Routes 101, 102, and 103 AM Stop Recommendations (Southbound)

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Civic Center MARTA Station (SB)	Maintain	Civic Center MARTA Station (SB)	
Peachtree St @ Baker St	Maintain	Peachtree St @ Baker St	
John Portman Blvd @ Courtland St	Maintain	John Portman Blvd @ Courtland St	
Courtland St @ Ellis St	Maintain	Courtland St @ Ellis St	
Courtland St @ Auburn Ave	Maintain	Courtland St @ Auburn Ave	
Courtland St @ Gilmer St	Remove		*consolidate stops*
Washington St @ Martin Luther King Jr. Dr	Replace	Martin Luther King Jr. Dr @ Washington St	*relocate as farside stop*
Martin Luther King Jr. Dr @ Peachtree St	Remove		*consolidate stops*
Martin Luther King Jr. Federal Building	Maintain	Martin Luther King Jr. Federal Building	

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Mitchell St @ Central Ave	Remove		*consolidate stops*
Mitchell St @ Washington St	Remove		*consolidate stops*

Table 16 Gwinnett County Transit Routes 101, 102, and 103 PM Stop Recommendations (Northbound)

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Mitchell St @ Central Ave	Remove		*consolidate stops*
Mitchell St @ Washington St	Remove		*simplify route*
Martin Luther King Jr. Dr @ Washington St	Remove		*simplify route*
Martin Luther King Jr. Dr @ Peachtree St	Remove		*simplify route*
Martin Luther King Jr. Federal Building	Maintain	Martin Luther King Jr. Federal Building	
Central Ave @ Wall St	Replace	Central Ave @ Martin Luther King Jr. Dr	*relocate as farside stop*
Peachtree Center Ave @ Auburn Ave (nearside)	Replace	Peachtree Center Ave @ Auburn Ave (farside)	*relocate as farside stop*
Peachtree Center Ave @ John Wesley Dobbs Ave	Replace		*relocate as farside stop*
Peachtree Center Ave @ Andrew Young Int'l Blvd (nearside)	Replace	Peachtree Center Ave @ Andrew Young Int'l Blvd (farside)	*relocate as farside stop*
Baker St @ Peachtree St	Maintain	Baker St @ Peachtree St	
Civic Center MARTA Station (SB)	Maintain	Civic Center MARTA Station (SB)	
Mitchell St @ Central Ave	Remove		*consolidate stops*

Figure 14 Gwinnett County Transit Routes 101, 102, and 103 (AM)

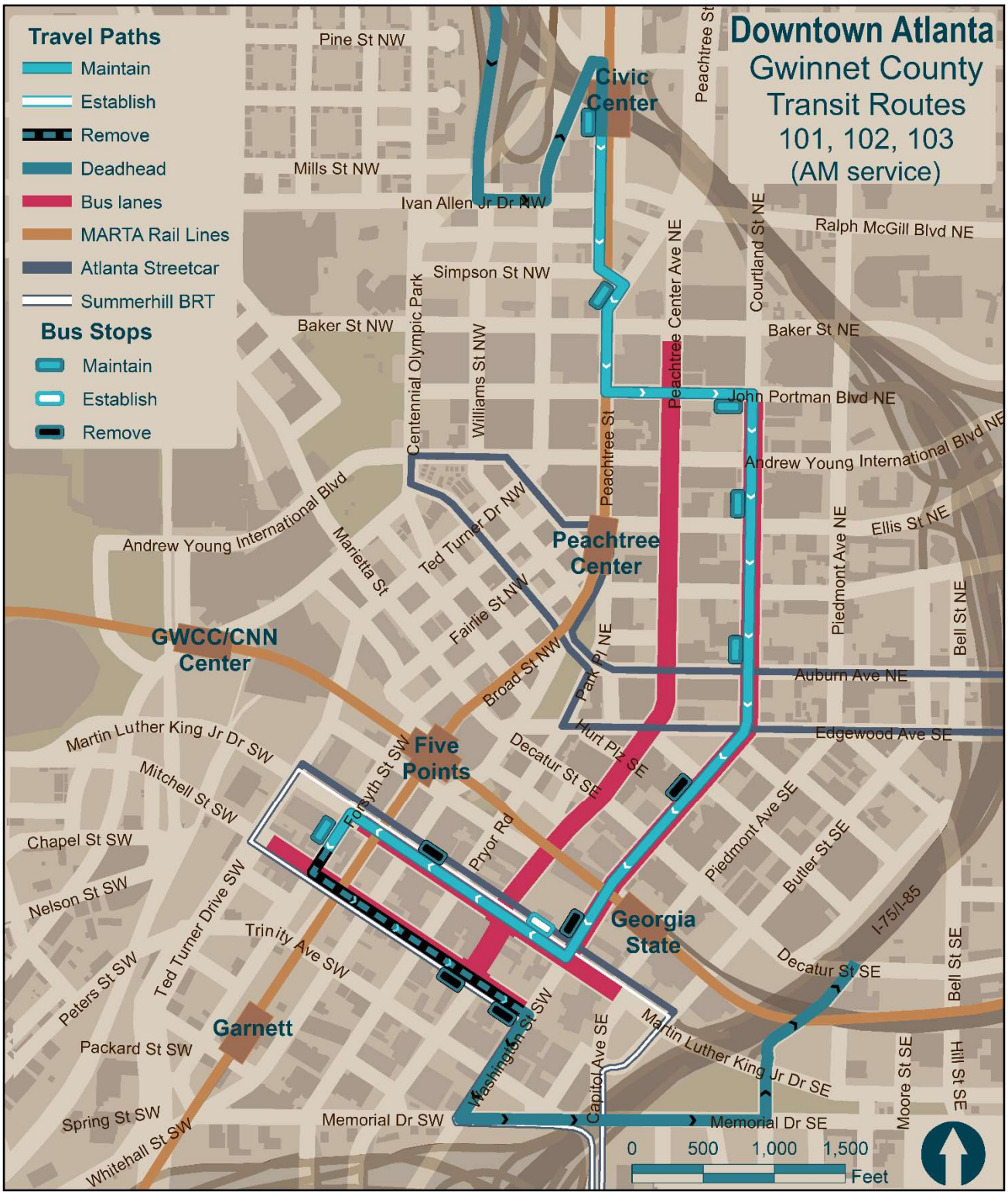
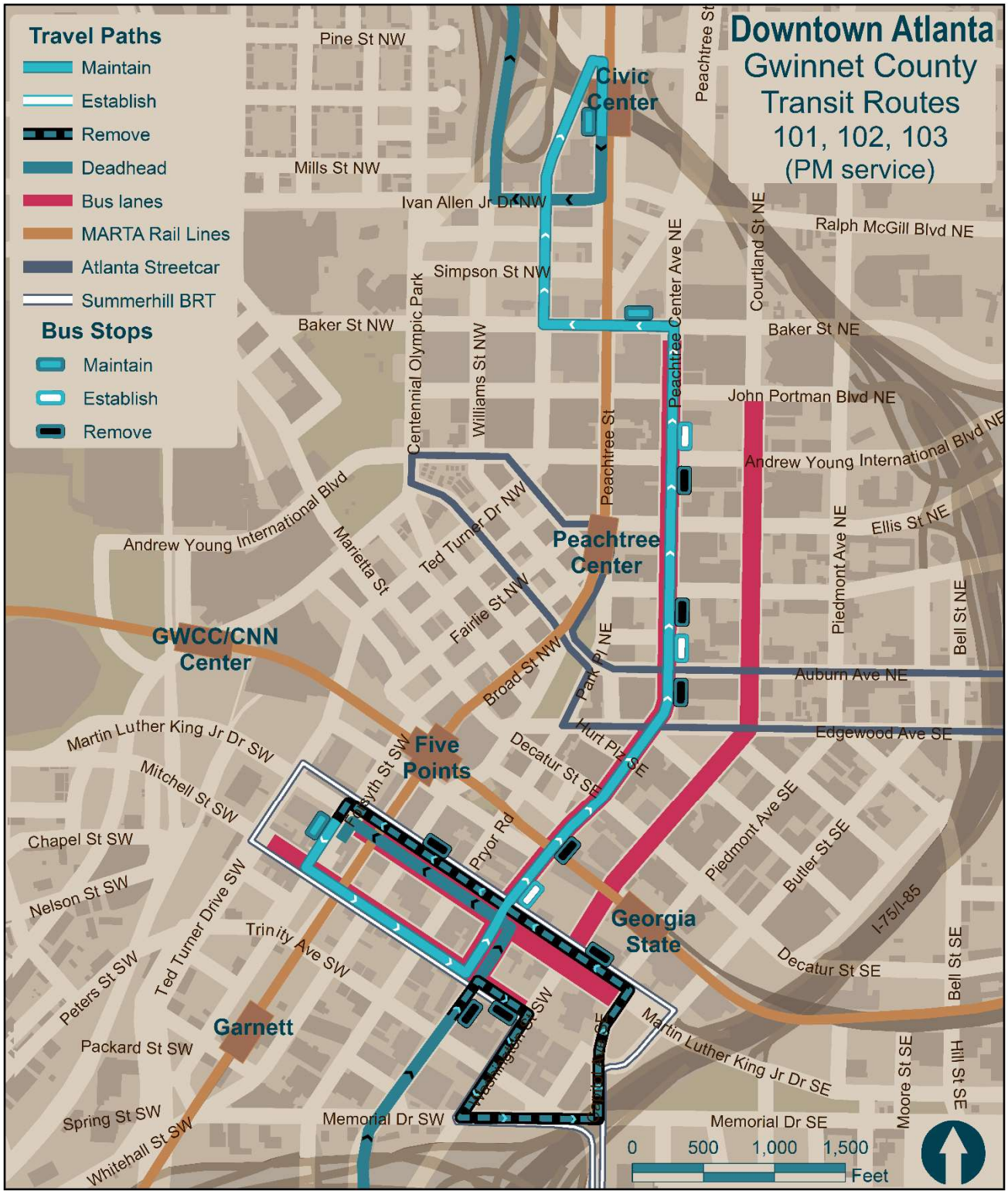


Figure 15 Gwinnett County Transit Routes 101, 102, and 103 (PM)



5.0 Costs, Impacts, and Benefits

5.1 Access to Jobs

One of the key benefits of the commuter bus system is to provide access to the large numbers of employment opportunities clustered around Downtown. For this analysis, access to jobs was measured based on a maximum quarter-mile walk distance from bus stops. This is a relatively conservative estimate as this distance generally equates to a 5-minute walk from a bus stop to the final destination. Often passengers are willing to walk significantly further if the quality of the pedestrian environment is good. The current bus stop locations provide access to an estimated 101,817 total jobs within a quarter-mile. The recommended routing and stop changes outlined in Section 4 would result in a one percent decrease in this measure, but would still provide quarter-mile access to 100,796 total jobs. The difference in accessibility is shown in Figure 16.

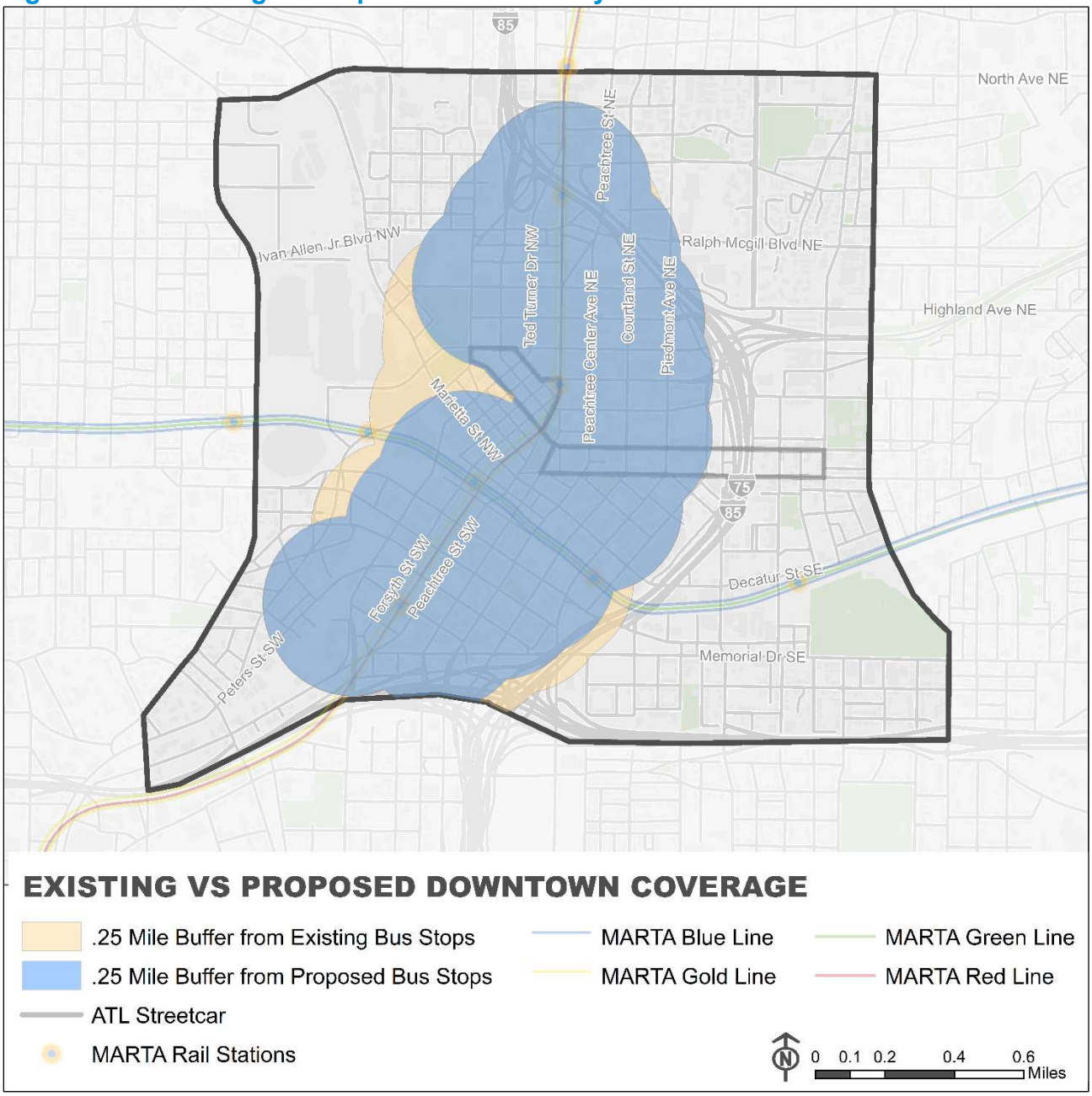
The majority of stops that are recommended for removal have replacement stops located within a quarter-mile:

- 15 proposed stops are less than 1,000 feet away from the existing stop
- 21 proposed stops are between 1,000 to 2,000 feet away from the existing stop

There are three bus stops that have been moved more than 2,000 feet away from the existing stop, but these relocations are justified due to extremely low volumes of ridership.

- CobbLinc Ted Turner Dr/Luckie St to MARTA Five Points Station SB – 2,450 ft (Zero Average Daily Boardings)
- CobbLinc Centennial Olympic Park Dr/John Portman Blvd to Baker St @ Peachtree St – 2,350 ft (<1 Average Daily Boardings)
- CobbLinc Centennial Olympic Park Dr/Andrew Young International Blvd to Baker St @ Peachtree St – 2,900 ft (Zero Average Daily Boardings)

Figure 16 Existing vs Proposed Accessibility



5.2 Operational Benefits

The recommendations outlined in Section 3 and 4 of this report will lead to operational benefits for the operating agencies, as well as benefits to their customers and other stakeholders. The main benefit of the infrastructure improvements and the associated operating improvements will be faster, more reliable bus service for customers and operators. Faster bus service is not only more cost efficient to operate, but is more attractive to potential passengers.

On average, each Commuter Bus Route could be improved to:

- *Reduce miles traveled in Downtown from 2.4 to 2.1.*
- *Reduce number of turns from 7 to 5.5.*
- *Increase distance between stops from 800 feet to 1285.*
- *Reduce time spent traveling in Downtown from 18 minutes to 14 minutes.*
- *Increase travel speed from 7.7 miles per hour to 8.7.*

The corridor along Courtland Street is five lanes wide for most of the distance in Downtown Atlanta. The corridor is subject to congestion delays along its length, while signal delays are not as a big an impact. It is estimated that with the introduction of bus lanes on Courtland Street, as well as bus stop consolidation, travel times savings of around four to six minutes will be achieved.

The corridor along Central Avenue and Peachtree Center Avenue has three travel lanes along much of its length in Downtown. In addition to this constraint, there are more traffic signals per mile for this corridor than the Courtland Street corridor, resulting in signal delays in addition to congestion delays. It is estimated that with the introduction of bus lanes along this corridor, even coupled with bus stop consolidation, will be insufficient by themselves to realize significant travel times savings. It is recommended that TSP also be deployed in order for travel times savings of around four to six minutes to be achieved.

Other major operational benefits associated with these recommendations:

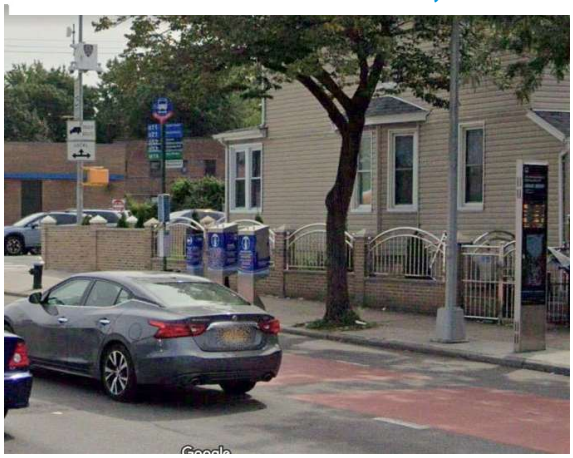
- By developing bus lanes along Courtland Street in the southbound direction and Central/Peachtree Center Avenue in the northbound direction, bus travel time will improve and unnecessary congestion will be avoided.
- By implementing TSP along Central/Peachtree Center Avenue with the bus lane in that corridor, commuter bus speeds will be improved to further reduce travel delays.
- By consolidating travel paths for the commuter buses to use many of the same streets, both existing and planned transit infrastructure will be better utilized.
- By encouraging the cooperation of commuter buses and BRT buses along Mitchell Street and Martin Luther King Jr. Drive, buses will have a greater presence in the area and increase public awareness of transit.
- By implementing two designated staging locations in Downtown, safety for operators and passengers will be improved. Traffic operations on streets that are currently being used as ad hoc staging locations will also be improved.
- By streamlining travel paths and reducing the number of turns, the commuter bus system will become more legible to potential customers.

- By consolidating bus stops, legibility of the system will be improved, and available capital funding for bus stop improvements will yield a greater amount invested per bus stop. Buses will also be able to move faster and spend less time at stops.

- By providing buses access to a bus lane on Courtland Street, some buses that start revenue service at the Federal Building will have a more reliable route to their afternoon staging location. Buses heading to points north from the Federal Building would be able to use the slip ramp from the interstate to the Courtland Street bus lane instead of using the congested interstate.

- By adjusting the travel path of CobbLinc buses in the morning to avoid the troublesome left turn from Ivan Allen Jr. Boulevard onto Ted Turner Drive congestion at the southbound Civic Center MARTA station curb on West Peachtree Street will be relieved. The recommendations will move 16 buses from the southbound curb to the northbound curb, which is less congested.

Figure 17 BRT and Commuter Buses both use this stop along Woodhaven Blvd in Queens, NY.



There are numerous examples from around the country of BRT and commuter buses sharing dedicated bus lanes, including in Richmond, Virginia; Eugene, Oregon; Pittsburgh, Pennsylvania; Las Vegas, Nevada; and New York City. These arrangements help increase the visibility of all types of transit in an area, while increasing travel speeds for passengers. The major operational challenge for BRT and commuter buses sharing a dedicated lane is related to operations and design of the stops; this will also be true in Downtown Atlanta. BRT systems that include substantial stations designed to accommodate even boarding with low-floor vehicles usually cannot be shared by the high-floor over-the-road coaches favored by commuter bus operators. Further, BRT operations often allow all-door boarding to reduce dwell times at stops; commuter buses can be slow to load and unload passengers as they often only have one door. Different solutions have been implemented in different locations. For example, in Eugene and Las Vegas, there are no commuter bus stops along the dedicated runningway. In Richmond, at some locations the commuter bus and BRT stops are directly adjacent to one another, while at others they are separated across an intersection (i.e. one is on the near side of an intersection, the other is on the far side.) Where major station infrastructure is not implemented, it is often much easier for commuter buses and BRT vehicles to share a curbside bus stop.

The implementation of the recommended bus lanes and associated routing changes will also have the impact of consolidating commuter bus operations onto a fewer number of corridors, as shown in Figure 18 and Figure 19. This should have the impact of allowing for better allocation of space for other modes, including bicyclists and pedestrians across Downtown.

Figure 18 Bus Volumes as Recommended – Morning Peak Hour

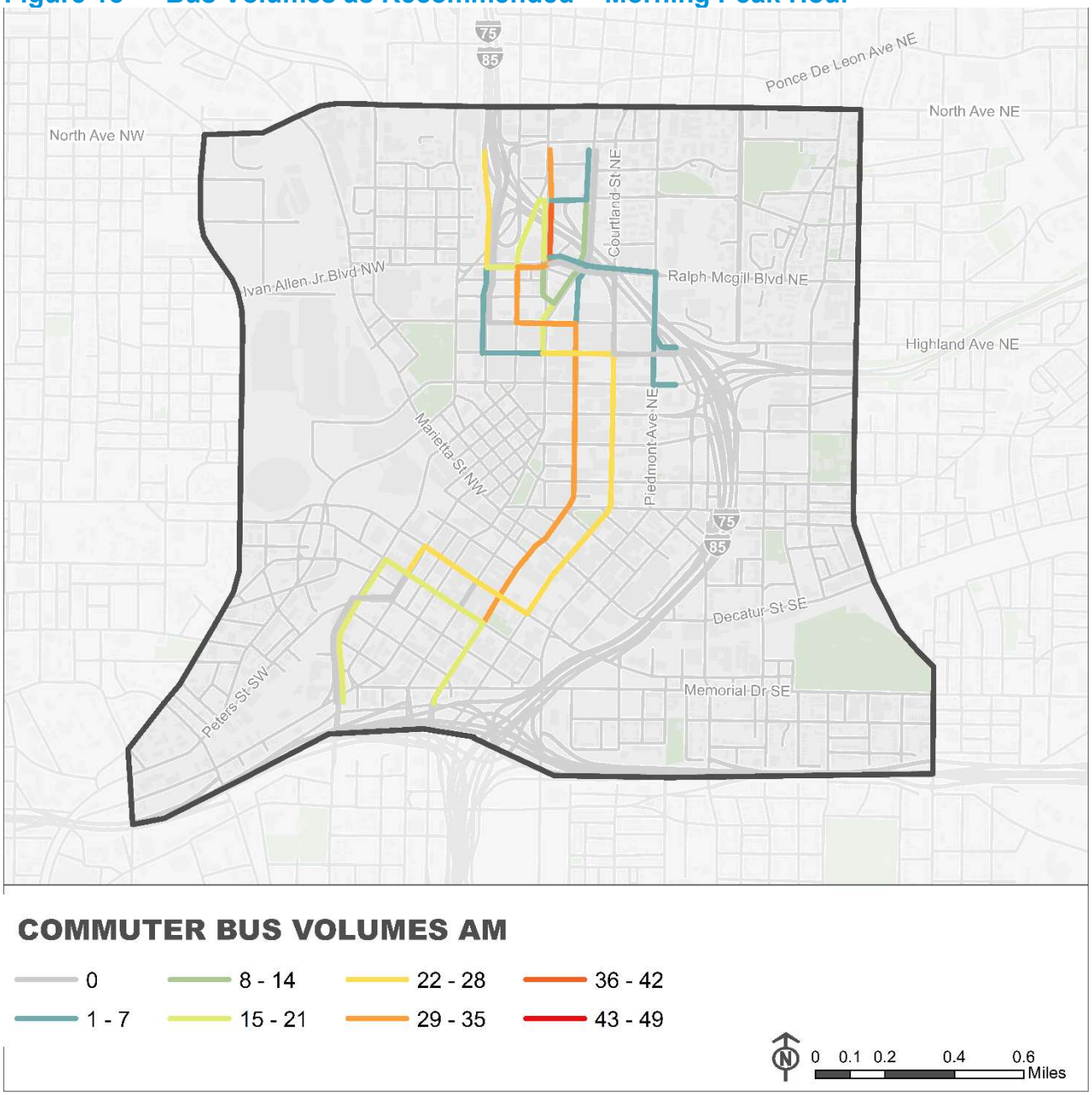
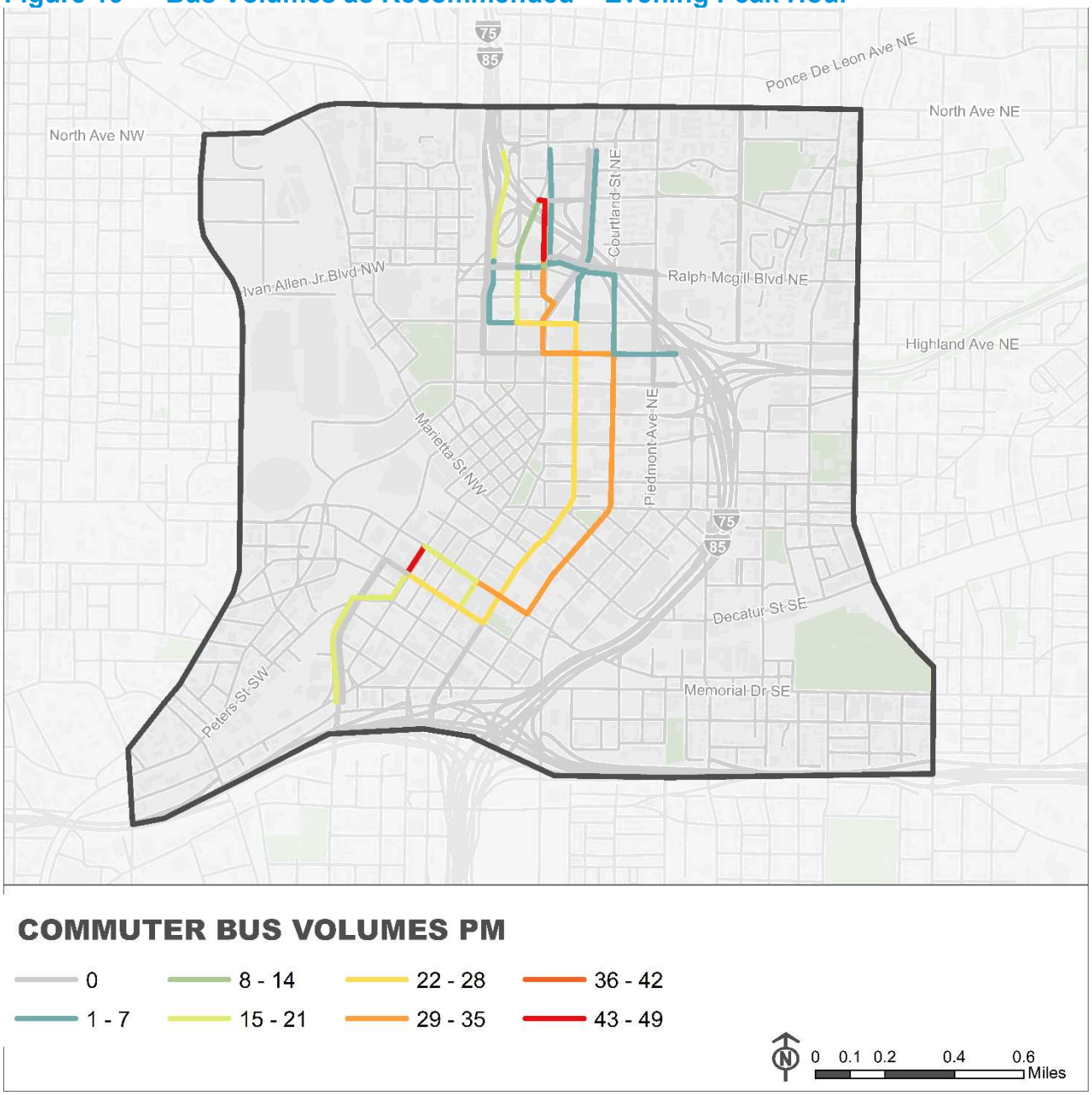


Figure 19 Bus Volumes as Recommended – Evening Peak Hour



5.3 Operating and Capital Costs

The introduction of new infrastructure in the form of bus lanes and TSP will require capital funding, although the total costs will depend on the specific design elements included. A painted bus lane would be both easier and more affordable to implement than fully separated bus lanes. Typical costs for installing painted bus lanes across the US is around $1 million per mile for permanent lane markings.

The adjustments to the commuter bus routes will allow them to make better use of the new infrastructure and should result in lower operating costs for the agencies. Based on the travel time savings of four to six minutes resulting from bus lanes on both corridors mentioned above, as well as savings from bus stop

consolidation and the streamlining of travel paths, it is estimated that the agencies can lower operating costs by reducing the hours spent in operation and the distance traveled. These possible savings are for in-service travel time, and do not include deadheading time, which may stay the same or rise slightly based on the change of the location of the first or last stop in the Downtown area.

Xpress route travel paths remain largely unchanged, and thus the distance traveled would be reduced by less than three percent. However, with stop consolidation and the introduction of bus lanes, it is anticipated that Xpress could save approximately four to five hours of in-service running time each day, or up to nine percent of their in-service hours, once all bus lanes and stop consolidations have been completed.

Gwinnett County Transit routes operate primarily along the same travel paths, but the streamlining of the afternoon travel path from the initial stop through the detour around the Georgia State Capitol Building will allow significant savings, since this detour occupies more than a third of the afternoon in-service travel time in Downtown. Over one mile of aggregate travel distance will be eliminated, or between 11 and 12 percent of in-service travel distance, by deadheading from the Central Avenue staging area in the afternoon directly to the first stop at the Federal Building. The aggregate in-service time savings for these runs will save approximately six to eight hours of in-service running time each day, or up to 30 percent of their in-service hours, once all bus lanes, stop consolidations, and travel path streamlinings have been completed.

CobbLinc routes will see savings from the elimination of the western portion of the routes. The distance traveled will be reduced by approximately a third. With this significant streamlining, as well as stop consolidation in the remainder of the route and the introduction of bus lanes, it is anticipated that CobbLinc could save approximately four to five hours of in-service running time each day, or up to 40 percent of their in-service hours, once all bus lanes, stop consolidations, and travel path streamlinings have been completed.

6.0 Appendix

6.1 Alternative Routing for Xpress Routes 430, 432, 440, 441, 442, and 453

Some Xpress customers are using the bus to access the Martin Luther King Jr. Federal Building on Forsyth Street. The recommended routing changes described in Section 4.5 would take these customers farther from that destination, adding around 800 feet additional walking distance. Encouraging and accommodating this walk by improving the pedestrian environment should be a priority in Downtown. However, if this distance is determined to be too long for customers to walk, service could be provided directly to the Federal Building by routing the buses west on the Martin Luther King Jr. bus lane, turning left onto Forsyth Street, and then traveling east again on the Mitchell Street bus lane to once again head north on Central Avenue (Figure 20). This travel path would add additional distance for the bus, but would reduce the distance for customers walking to their final destination. The details for this alternative are presented below:

Table 17 Alternative Xpress Routes 430, 432, 440, 441, 442, and 453 AM Stop Recommendations (Northbound)

Existing Bus Stop	Recommended Action	Proposed Bus Stop	Notes
Central Ave @ Garnett St	Remove		*consolidate stops*
Central Ave @ Mitchell St	Maintain	Central Ave @ Mitchell St	
Martin Luther King Jr. Dr @ Peachtree St	Remove		*streamline travel path*
	Establish	Martin Luther King Jr. Federal Building	*ensure access*
Peachtree St @ Five Points MARTA Station	Replace	Central Ave @ Martin Luther King Jr. Dr	*streamline travel path*
Wall St @ Central Ave	Replace		*streamline travel path*
Peachtree Center Ave @ Auburn Ave (nearside)	Replace	Peachtree Center Ave @ Auburn Ave (farside)	*relocate as farside stop*
Peachtree Center Ave @ John Wesley Dobbs Ave	Replace		*relocate as farside stop*
Peachtree Center Ave @ Andrew Young Int'l Blvd (nearside)	Replace	Peachtree Center Ave @ Andrew Young Int'l Blvd (farside)	*relocate as farside stop*
Baker St @ Peachtree St	Maintain	Baker St @ Peachtree St	
Ted Turner Dr @ W Peachtree Pl	Maintain	Ted Turner Dr @ W Peachtree Pl	
Civic Center MARTA Station (NB)	Maintain	Civic Center MARTA Station (NB)	

Figure 20 Alternative Xpress Routes 430, 432, 440, 441, 442, and 453