LAST MILE CONNECTIVITY STUDY

Draft Report

Prepared for

SANDY SPRINGS GEORGIA

PERIMETER COMMUNITY IMPROVEMENT DISTRICTS

Brookhaven GEORGIA

City of Dunwoody Georgia

Prepared by

GRESHAM SMITH AND PARTNERS

In collaboration with

Sprinkle Consulting

vhb

TABLE OF CONTENTS

Executive Summary **1**

1. Introduction **4**

2. Background **8**

A. Defining Last Mile Connectivity 8

B. Study Area 8

3. Study Process/Methodology **11**

A. Prior Plans and Studies 11

B. Project List 11

C. Mapping Existing Facilities/Services and Previously Planned/Programmed Projects 14

D. Transportation Provider Coordination 14

E. Stakeholder and Public Engagement 15

4. Existing Conditions **16**

A. Overview 16

B. Employers and Employment Density 17

C. Population and Residential Density 23

D. 2013 Perimeter Travel Survey Results 25

E. Existing Bicycle and Pedestrian Network 26

F. Existing Roadway Network 32

G. Existing Transit Services in Study Area 34

5. Stakeholder Coordination and Public Outreach **41**

A. Summary of Public Open House and Public Comments 41

B. Community Feedback on Priorities 41

6. Overall Vision and Unified Master Plan **45**

A. Overview 45

B. Vision and Goals 45

C. Bicycle and Pedestrian Plan: Sidewalks, Trails, Multi-Use Paths, and Bicycle Facilities 47

I. Planned and Programmed Projects 47

II. Identification of Gaps and Inconsistencies 48

III. Recommendations to Fill Gaps and Complement Transit 53

IV. Bicycle and Pedestrian Network Strategies 57

D. Roadway Plan 59

I. Planned and Programmed Projects 59

II. Identification of Gaps and Inconsistencies....60
III. Recommendations to Fill Gaps and Complement Transit....62
IV. Roadway Network Strategies....64
E. Transit Plan and Vision....65
I. Overview of Previously Planned Transit Projects and Service....65
II. Transit Gaps and Needs Assessment....67
III. Future Inter-Perimeter Transit Vision....71
IV. Transit Supportive Strategies....78
7. Implementation and Next Steps....82
A. Considerations for Developing Capital Project Lists and Prioritizing Projects....82
B. Potential Funding Sources for Last Mile Connectivity Projects....84
C. Next Steps....84
8. Appendices....85

LIST OF FIGURES

Figure ES-1. Aerial Image of Area Around Perimeter Community Improvement Districts 1
Figure 1. Covered Walkway between Sandy Springs MARTA Station and Northpark Office Complex 4
Figure 2. Study Area 5
Figure 3. View of Dunwoody MARTA Station seen from Hammond Dr 6
Figure 4. Components of Last Mile Connectivity 8
Figure 5. Illustrations of Node Connectivity and Last Mile Connectivity 9
Figure 6. Project Methodology 13
Figure 7. Locations of Top 50 Employers within PCIDs 19
Figure 8. Proposed and Planned Development Projects within PCIDS 20
Figure 9. Employment Density 22
Figure 10. Residential Density within the Study Area 24
Figure 11. Local Circulator Factors 25
Figure 12. Likeliness to Use Facilities or Services in Perimeter 26
Figure 13. Lack of Sidewalk along Central Pkwy 27
Figure 14. Existing Sidewalk within the Study Area 28
Figure 15. Existing Bicycle Facilities and Multi-use Paths or Trails 29
Figure 16. Likely or Desirable Paths between Employers and Transit 31
Figure 17. Existing Transit 35
Figure 18. Map of GRTA Xpress Route 401 through Perimeter 37
Figure 19. Map of GRTA Xpress Route 428 through Perimeter 38
Figure 20. Transit Service within PCIDs 40
Figure 21. Attendees Talk with the Consultant Project Manager During the Public Open House 41
Figure 22. Attendees Review Displays During the Public Open House 41
Figure 23. Planned and Programmed Bicycle and Pedestrian Projects (Short-Term) 50
Figure 24. Planned and programmed Bicycle and Pedestrian Projects (Mid-Term) 51
Figure 25. Planned and Programmed Bicycle and Pedestrian Projects (Long-Term) 52
Figure 26. New Bicycle and Pedestrian Project Recommendations 56
Figure 27. Conceptual Diagram of Perimeter Area Greenbelt 58
Figure 28. Planned and Programmed Roadway Projects 61
Figure 29. New Roadway Project Recommendations 63
Figure 30. Previously Planned and Programmed Transit Service 66
Figure 31. Examples of Large-Block and Campus-Style Development Patterns 69
Figure 32. Last Mile Connectivity Gaps and Connections 70
Figure 33. Illustration of NACTO Queue Jumper Design Guidance 73
Figure 34. Rapid Transit Modes Considered 75
Figure 35. Transit Last Mile Connectivity Recommendations 77

LIST OF TABLES

Table 1. Key Corridors for Node Connectivity within Study Area 10
Table 2. List of Studies Reviewed 12
Table 3. Top Employers with 300 or More Employees 18
Table 4. Functional Classification of Key Corridors 32
Table 5. Average Daily Traffic Volumes on Select Key Corridors 34
Table 6. Short-term Recommended Bicycle and Pedestrian Projects to Fill Gaps 53
Table 7. Mid-term Recommended Bicycle and Pedestrian Projects to Fill Gaps 54
Table 8. Long-term Recommended Bicycle and Pedestrian Projects to Fill Gaps 55
Table 9. Recommended Roadway Projects to Fill Gaps 62
Table 10. Node Connection Projects 72

EXECUTIVE SUMMARY

The Perimeter area is a premier destination in the Atlanta region, serving as a major hub of employment, retail development, and a growing residential population. Located just north of Atlanta at the intersection of three cities, two counties, and two highways, with access to four Metropolitan Atlanta Rapid Transit Authority (MARTA) rail stations, this activity center draws daily commuters from long distances as well as from the neighboring cities of Brookhaven, Dunwoody, and Sandy Springs.

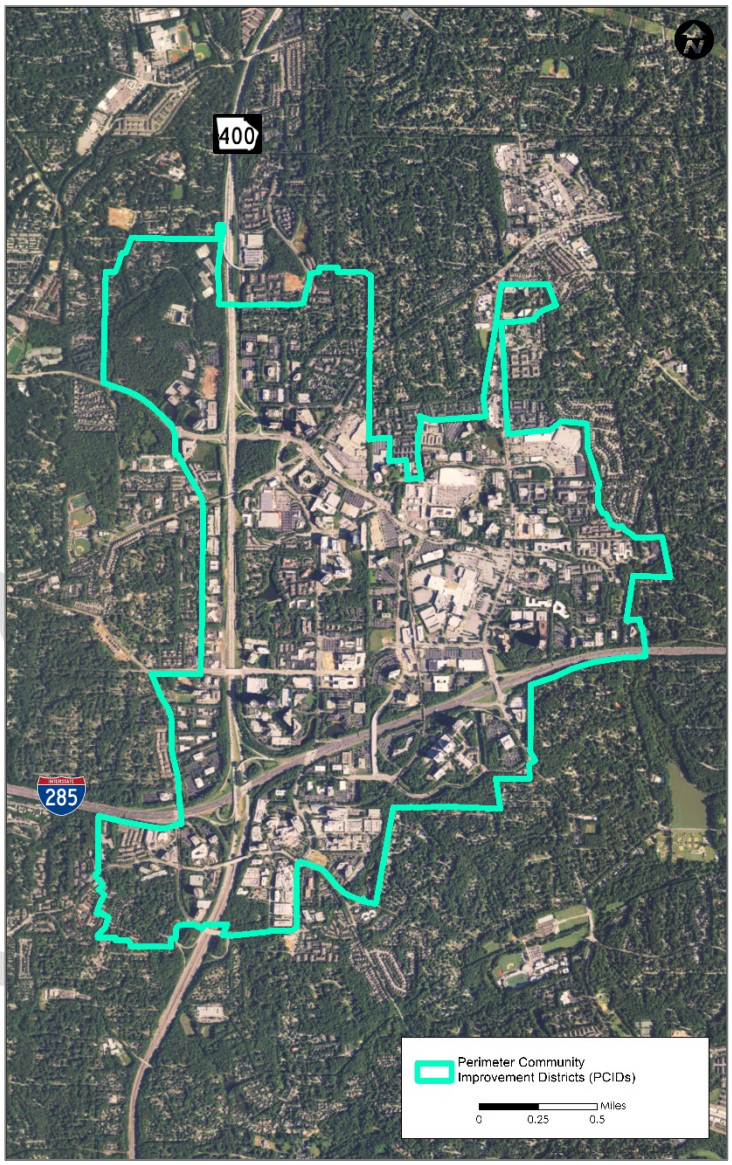


FIGURE ES-1. AERIAL VIEW OF PERIMETER COMMUNITY IMPROVEMENT DISTRICTS (PCIDS)

As the area continues to add jobs and housing opportunities, transportation and access are becoming increasingly important issues for Perimeter and the surrounding communities. For this reason, the cities of Brookhaven, Dunwoody, and Sandy Springs and the Perimeter Community Improvement Districts (PCIDs) partnered to conduct a study of last mile connectivity. Notably, last mile connectivity is a critical need, given the variety and number of forms of transportation offered within the Perimeter area. Last mile connectivity addresses the connections between activity centers or transit stops and stations and final destinations such as residences, offices, and retail areas. Rather than measure a specific distance, the first or last "mile" of a trip refers to the initial or final leg of a journey between home and a given destination. Making safe, comfortable trips between destinations and transit as well as connections to the nearby downtowns/activity centers of Brookhaven, Dunwoody, and Sandy Springs is critical to maintaining and enhancing the economic competitiveness and livability of the area.

There are a number of reasons for conducting this type of study in this area. Perhaps chief among them are two main objectives: to provide safe, comfortable non-automobile options for short-distance trips within the Perimeter area; and to make it easier and more convenient for people to take advantage of existing transit service for travel between the Perimeter area and other destinations.

Through a process of information-gathering, reconciliation of the results of previous planning efforts, and identification of gaps, this study offers a cohesive menu of recommendations for improving last mile connectivity and increasing transit usage. It includes including specific infrastructure investments, policy recommendations, and additional studies as well as strategies that can be pursued to support and complement last mile connectivity. One primary task of this study is to develop a consolidated project list to guide multimodal investment in the Perimeter area. Each recommendation related to last mile connectivity in previous plans and studies conducted by or for the project partners underwent a thorough review to determine whether it should be part of the consolidated project list. Some recommendations were determined to no longer have community support. Others were no longer viable due to land use and development patterns that had changed since the approval of the plan or study. These projects were removed from consideration. Following this process, each project was analyzed in relation to other recommendations in the study area. Within the boundaries of the PCIDs, there were some instances with multiple projects along the same corridor that did not complement each other, due to disparities in facility type or termini. In addition, at municipal boundaries, there was often some disconnect between planned improvements among the cities. These project inconsistencies were reconciled in the refinement of the project list. Upon an examination of all the projects in the study area, it was also determined that there were "gaps" in coverage, or places where facilities were lacking, and there were no identified projects to address connectivity needs. In these areas, recommendations were made to fill these gaps in order to provide consistent last mile connectivity across the study area.

The resulting consolidated list of projects represents an ambitious but comprehensive set of projects the cities of Brookhaven, Dunwoody, and Sandy Springs and the PCIDs can consider as part of future development and planning initiatives. In addition, the report includes strategies that can be pursued to support last mile connectivity and development of safe, comfortable biking and walking facilities and routes. The project list (Appendix A) includes previously planned projects as well as new project recommendations.

The project list is sorted into tiers by timeframe and includes a general description of each project, along with information about potential challenges to the projects, probable costs, and the source plan from which the project originated.

Recommendations and strategies are intended to cultivate the conditions that will encourage alternative modes of travel within the study area as well as to make it easier and to encourage people to take advantage of services already provided by partner agencies, such as MARTA, GRTA, and private shuttle operators. Specific projects include filling sidewalk gaps, applying complete street treatments to key corridors, adding wayfinding, and redesigning MARTA rail stations to be more people-friendly and intuitive.

A summary list of recommendations is provided below.

Recommendations
Construct or fill sidewalk gaps on portions of Glenridge Dr, Glenlake Pkwy, and along the south side of Abernathy Rd near GA 400
Work with property owners to encourage filling of sidewalk gaps on Concourse Pkwy
Install bicycle lanes on Peachtree Dunwoody Rd in Sandy Springs
Design and construct a multi-use path along Glenlake Pkwy and Glenridge Dr
Apply additional complete street treatments on several corridors throughout the Perimeter area, including portions of: • Glenridge Dr in Sandy Springs • Mt. Vernon Hwy in Sandy Springs (two locations) • Mt. Vernon Rd in Dunwoody • Johnson Ferry Rd in Sandy Springs (two locations) • Peachtree Dunwoody Rd in Sandy Springs
Identify opportunities to incorporate bicycle and pedestrian improvements into local street projects
Design and construct a pedestrian bridge between North Springs MARTA Station and Glenlake Pkwy
Develop and implement a branded wayfinding program and guidelines throughout Perimeter, with elements targeted at both pedestrians and motorists
Conduct corridor studies to determine future capacity and complete street needs on Abernathy Rd and Glenridge Dr/Glenlake Pkwy
Implement operational improvements on Johnson Ferry Rd in Brookhaven
Implement context-sensitive corridor improvements on Windsor Parkway in Sandy Springs
Explore transit connection between Brookhaven/Oglethorpe MARTA Station and Perimeter area
Establish policies to guide operation of ridesharing or ride-hailing services to ensure efficient operation within the Perimeter area
Work with major employers and large-scale developments to encourage their use of private shuttle services and consider opportunities to standardize or streamline elements of their operation
Conduct a feasibility study to explore an additional east-west transit connection between Sandy Springs MARTA station and City Springs
Explore opportunities to install queue jumpers for transit vehicles along Hammond Dr
Install transit signal priority (TSP) on signals along Hammond Dr that are compatible with MARTA technology
Establish and implement guidelines to create active streets that encourage walking and biking
Establish standards for bicycle and pedestrian facilities that make it easier and more comfortable to use transit
Establish priorities for density, mix of uses, and the urban form of new development to support transit and other alternative modes of travel in appropriate locations
Adopt and apply standards for transit shelters, regardless of agency, and participate in the regional bus stop signage program to standardize sign design and information and provide real-time bus information displays at shelters
Provide dedicated transit lanes on key corridor segments within the Perimeter area, during peak morning and afternoon hours at a minimum
Expand dedicated transit lanes on key corridor segments within Perimeter to connect south to Johnson Ferry Rd and west along Barfield Rd to expand access to more major employers
Implement transit signal priority along key corridors and identify locations to install queue jumpers at critical intersections to allow transit vehicles to pass personal vehicles

1. INTRODUCTION

For people who use transit services, trips do not simply begin or end when they get on or off a bus or train. Trips begin or end with a walk, bike ride, or car trip from home to the station, or from the station to their destination. These connecting trips before or after transit, the "last mile," are often critical links and essential to making transit a viable, convenient choice. These trips can be challenging depending on the surrounding environment and infrastructure. With a rise in vehicular traffic and congestion across many parts of the country, local governments and transit agencies are looking to implement strategies and projects that improve the first and last mile connections to transit services in order to provide a more seamless, convenient travel experience and encourage or attract more riders.

The Perimeter area is a destination in the Atlanta region for jobs and retail with a growing residential population. It is located at the intersection of three cities, two counties, and two highways, with access to four MARTA rail stations. This activity center, just north of Atlanta, draws daily commuters from long distances as well as from neighboring Brookhaven, Dunwoody, and Sandy Springs. Transportation and access are becoming increasingly critical issues facing Perimeter and the surrounding communities. There is a substantial disconnect in last mile connectivity in the heart of the Perimeter area and between Perimeter and the nearby downtowns/activity centers of Brookhaven, Dunwoody, and Sandy Springs.

The Perimeter area, already home to more than 5,000 companies, including several Fortune 500 companies, is growing at a tremendous rate. New developments such as State Farm, Mercedes-Benz and other high-density commercial, residential and mixed-use developments continue to make it an exciting time to live, work, and play in the Perimeter area. All of this growth, however, will place additional strain on the already-congested roadways in the area. Given this growth, it is essential to make sure the Perimeter area has biking, walking, and transit options to keep people moving, and maintain its status as a desirable destination for workers, residents, and visitors.

Transportation, and particularly non-automobile transportation, will play a critical role in the Perimeter area's ability to maintain and strengthen its position as a premier urban market for residents, businesses, and visitors. According to data from the 2011-2015 American Community Survey 5-year estimates, within the Atlanta-Sandy Springs-Roswell Metro Area, 78 percent of all workers over the age of 16 drive alone to work while only three percent use public transportation. This equates to about two million people driving alone to work within the Atlanta/Sandy Springs/Roswell area.

FIGURE 1. COVERED WALKWAY BETWEEN SANDY SPRINGS MARTA STATION AND NORTHPARK OFFICE COMPLEX

It was within this context that, in 2016, the Cities of Sandy Springs, Brookhaven, and Dunwoody, in collaboration with the Perimeter Community Improvement Districts (PCIDs), initiated a study of last mile connectivity within and around the Perimeter area. The *Last Mile Connectivity Study* (the Study) is intended to provide a clear vision to address multi-modal transportation needs in the Perimeter area. The purpose of the study is to produce a consolidated program of investments in bicycle, pedestrian, trail, and roadway facilities, and to explore future transit opportunities to make it easier, safer, and more comfortable for people to

get around the Perimeter area. The study is concentrated on the area within the boundaries of the PCIDs, but also considers connections between activity centers in Brookhaven, Dunwoody, and Sandy Springs and the PCIDs. The study area is shown in Figure 2.

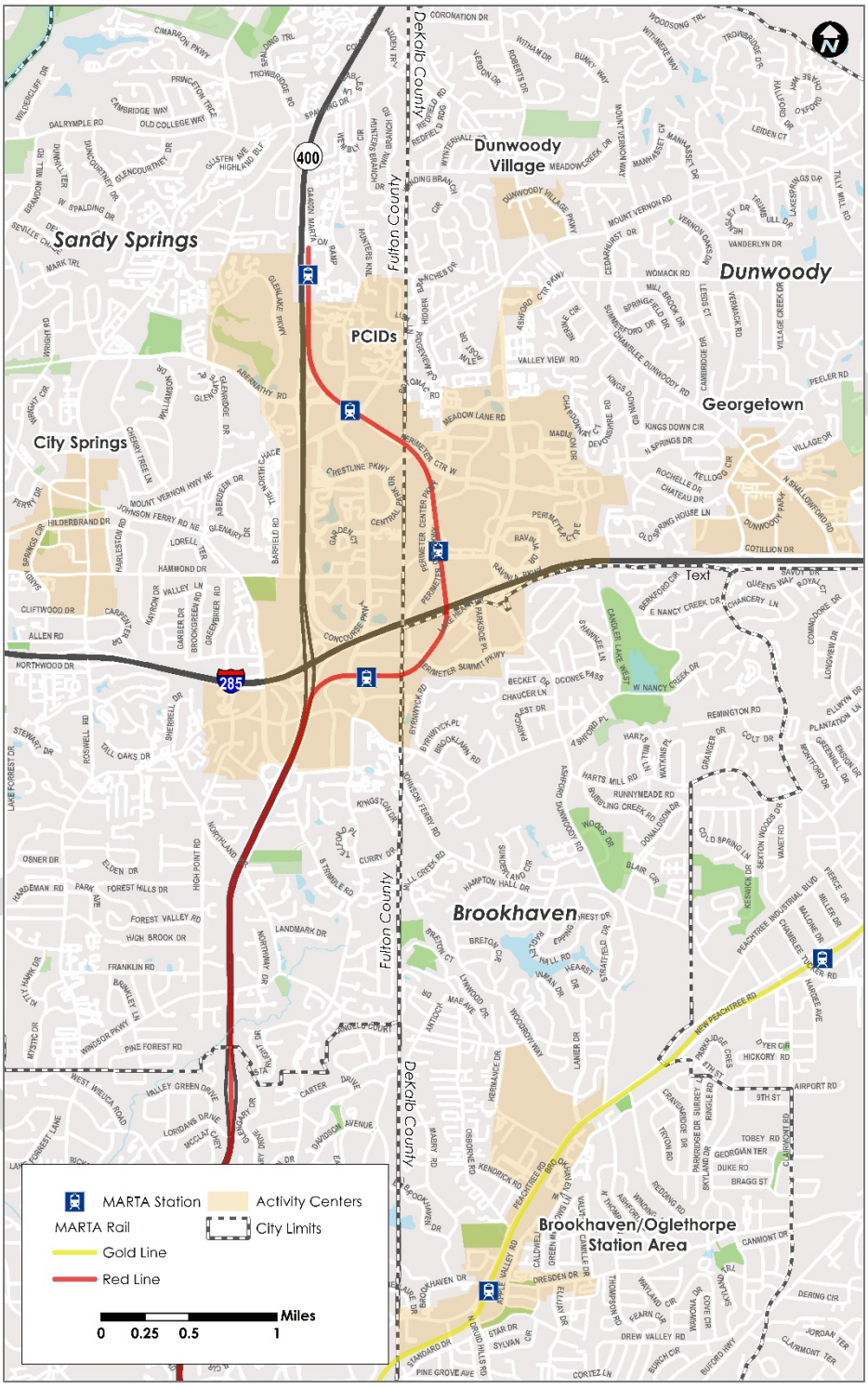


FIGURE 2. STUDY AREA

The goal of this study is to offer a network of safe, easy, and convenient opportunities for people to walk, bike, or take transit within the Perimeter area, helping residents, employees, and visitors complete short trips or the last mile of longer trips on foot, bike, or via local transit service. This may be accomplished through the introduction of new infrastructure or services and also by making it easier for people to take advantage of existing infrastructure and services.

Primary objectives of the study include:

- Review existing plans and studies to identify prior projects, initiatives, and programs related to last mile connectivity
- Identify gaps and areas of overlap between and among previously planned or programmed projects
- Develop a vision for introducing new transit service into the Perimeter area
- Develop recommendations for new projects and programs to further enhance last mile connectivity by filling gaps between existing, planned, and programmed projects, services, and facilities

The Perimeter area has been growing at a tremendous rate in recent years and it is anticipated that this trend will continue. Numerous residential and commercial developments are under way and more are anticipated in the near future. Improvements to last mile connectivity can help alleviate congestion and provide viable travel alternatives to personal vehicles for workers, residents, and visitors. In turn, enhanced bicycle and pedestrian facilities can improve community health and well-being by making it easier for people to choose active transportation modes and make healthier choices with regard to how they get around. Furthermore, given the interest among companies and employees in walkable, livable communities, investing in last mile connectivity can help ensure the economic competitiveness of the area by maintaining it as a desirable destination for workers, residents, and visitors.

FIGURE 3. VIEW OF DUNWOODY MARTA STATION SEEN FROM HAMMOND DR

The study is primarily focused on multi-modal connections and the transportation network within the Perimeter area, but also looked at opportunities to facilitate better connectivity between the Perimeter area and nearby activity centers in each of the three participating cities: Brookhaven, Dunwoody, and Sandy Springs. Definitions of last mile connectivity and descriptions of types of connectivity are discussed in Section 2A.

This study sought to provide a consolidated list of projects and programs in which each city and the PCIDs can invest to enhance last mile connectivity. The project list, a component of this study (see Appendix A) includes projects and programs that have already been identified in previously accepted or adopted plans and studies as well as newly identified opportunities to enhance connections or fill gaps between

existing and planned projects. The program of investments - which spans several categories, including pedestrian, bicycle, trail/path, roadway, and transit - is grouped by timeframe and includes additional information about the potential challenges of a given project, high-level cost estimates, and the source of the project.

Rather than be prescriptive about an exact set of recommendations to implement in a specific order, the aim of this study was to provide a consolidated list of projects and recommendations that the project partners can implement according to their own priorities and as resources become available. The project team recognizes that priorities may shift depending upon available resources, ability to coordinate or tap into an upcoming project, and the evolving needs and preferences of community members and elected officials. For that reason, this study includes a range of strategies and projects that can be implemented over time. This report is intended to be a living document that should be revisited and updated periodically over time. The consolidated project list can and should be reviewed from time to time to ensure the projects are still relevant and remain priorities for the future.

This report includes a summary of the study team's process and methodology, an overview of existing conditions, inputs, and previous plans. For each modal system (pedestrian, bicycle, roadway, and transit), the report summarizes existing facilities, discusses identified gaps and areas of overlap, and includes recommended projects and strategies. The report offers a range of recommendations grouped by timeframe, including new sidewalks, new bicycle facilities, corridor studies, and strategies to leverage existing services and facilities, such as wayfinding, parking management, and transit station enhancements.

2. BACKGROUND

This section is intended to help provide a general understanding of the concept of last mile connectivity and how it was defined and considered for the purposes of the *Last Mile Connectivity Study* as well as a general description of the location of the study area.

A. DEFINING LAST MILE CONNECTIVITY

Last mile connectivity addresses the connections between activity centers or transit stops and stations, and final destinations such as residences, offices, and retail areas. Rather than measure a specific distance, the first or last "mile" of a trip refers to the initial or final leg of a journey between home and a given destination. For example, if a commuter uses an express bus service to get to work, the "last mile" of that trip would be the distance between where the bus drops the commuter off and his or her office. It could also refer to the trip made between a mall and the nearest transit station, which shoppers use to get to the mall. First and last mile connections are generally made in one or more ways, including but not limited to:

- Walking
- Biking
- Private automobile
- Shared automobile or short-term rentals (e.g. ZipCar)
- Shuttles
- Bus
- Private rideshare or ride-hailing services (e.g. Uber, Lyft)

These modes get transit riders between transit service and their origins or destinations. Transit providers such as MARTA and the Georgia Regional Transportation Authority (GRTA) provide service for the longest part of the journey via rail and local and regional buses. Generally, it has been left up to individual travelers to get themselves to and from transit stops, but over the past few decades, public agencies and employers have been increasingly willing to assist in providing connections and encouraging people to use public transportation. These services may be offered in the form of shuttles, private rideshare, bikeshare, or others. In addition to transportation services, another way to enhance and improve last mile connectivity is by investing in infrastructure that makes it easier, safer, and more comfortable for travelers to access transit.

FIGURE 4. COMPONENTS OF LAST MILE CONNECTIVITY

B. STUDY AREA

The area examined for the *Last Mile Connectivity Study* includes the PCIDs, which lies within portions of the Cities of Sandy Springs, Dunwoody, and Brookhaven, as described above. The boundaries of the PCIDs lie primarily north of I-285 and east of GA 400, but straddle both highways. The study area also

includes the activity centers of City Springs (Sandy Springs), Dunwoody Village, Georgetown (Dunwoody), and the Brookhaven/Oglethorpe (MARTA) Station area (Brookhaven) as illustrated in Figure 2.

The study area is anchored by the PCIDs, an active business district with major office complexes, significant commercial and retail development, mixed uses, and some residential uses. The areas outside of the PCIDs are more suburban in character, with some nodes of activity in limited areas. Given the relatively dispersed nature of the study area outside of the PCIDs and the current alignments of transit service, it became clear that in order to make it easier for people to take advantage of existing transit services, the study would need to look at both short-distance trips within the PCIDs, but also ways to make it easier for people to travel between outlying activity centers and the Perimeter area. To that end, the project team took a two-pronged approach to examining connectivity. One component focused on short-distance, true "last mile" connections within the PCIDs. The second component looked at longer-distance connections between the PCIDs and outlying activity centers, or nodes, in Brookhaven (Brookhaven/Oglethorpe MARTA Station area), Dunwoody (Georgetown area, and to a lesser extent, Dunwoody Village), and Sandy Springs (City Springs). The team defined these two types of connectivity as follows, as illustrated in Figure 5:

- **Node connectivity** – providing direct access between nodes or activity centers (including transit stations) to facilitate movement of people and connect mixed-use activity centers
- **Last mile connectivity** – getting people effectively between origins/destinations and the nearest transit stop/station, or facilitating connections between multiple nearby destinations

Ultimately, the goal is to provide people with choices other than a personal automobile for completing short-distance trips within the study area, whether on their own as independent errands or as links at the beginning or end of longer journeys, and to make it easier for people to take advantage of existing transit service.

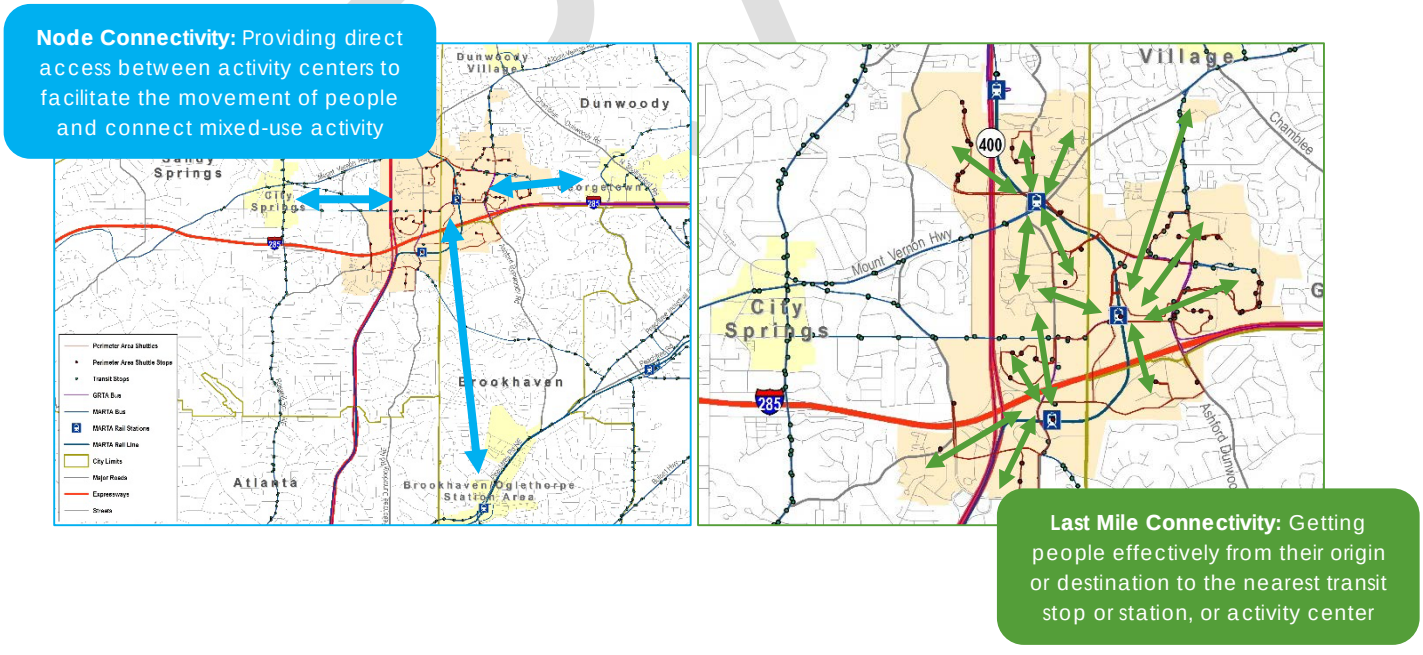


FIGURE 5. ILLUSTRATIONS OF NODE CONNECTIVITY (LEFT) AND LAST MILE CONNECTIVITY (RIGHT)

Node connectivity focuses on **getting people between outlying activity centers and the PCIDs**. Because the distance between nodes is longer, the team focused on improving connections for modes that are appropriate for longer-distance trips, such as shared vehicles, transit, and for some travelers, bicycles. Rather than consider all the many potential ways to travel between the PCIDs and activity centers, the team identified several key corridors that serve as direct routes between these areas. These are listed in Table 1. These corridors were examined not only for the purposes of identifying previously planned and programmed projects, but also for identifying gaps and potential new connections that may be established in the future. Improvements to node connectivity may be provided in the form of improved transit amenities, protected bicycle facilities, incentives or amenities to encourage carpooling, parking management, and safe or convenient access to transit service from neighborhoods or in outlying activity centers.

TABLE 1. KEY CORRIDORS FOR NODE CONNECTIVITY WITHIN STUDY AREA

Corridor	Location
Abernathy Rd	Sandy Springs
Ashford Dunwoody Rd	Brookhaven, Dunwoody
Chamblee Dunwoody Rd	Brookhaven, Dunwoody
Glenridge Connector / Glenridge Dr	Sandy Springs
Hammond Dr	Dunwoody, Sandy Springs
Johnson Ferry Rd	Brookhaven, Sandy Springs
Mount Vernon Rd/Hwy	Dunwoody, Sandy Springs
Peachtree Dunwoody Rd	Brookhaven, Dunwoody
Windsor Pkwy	Brookhaven, Sandy Springs

The focus of **last mile connectivity** is primarily on **linking origins or destinations and transit service,** but also making it easier for anyone to complete any short-distance trip within the PCIDs using alternatives to personal automobiles. These connections may be improved with such services or infrastructure as high-amenity pedestrian facilities, low-stress bicycle facilities, and improved transit circulation. Facilities that improve last mile connectivity may include wide sidewalks, safe pedestrian crossings, direct connections between buildings and sidewalks, shared-use paths, bicycle lanes, private rideshare services, short-term carshare or car rental, and to some extent, local circulating transit service, like shuttles. Other improvements may include wayfinding, bike parking, short-term bike rental or bikeshare.

3. STUDY PROCESS/METHODOLOGY

The study team took a simple, yet thorough approach to the *Last Mile Connectivity Study*. The process included a review of previously approved plans and studies within each jurisdiction (the three cities and PCIDs), from neighboring jurisdictions, and regional plans. The process also consisted of mapping existing facilities and services, mapping planned and programmed projects, identifying gaps and areas of overlap between projects, and identifying new projects and recommendations to fill those gaps. The team then consolidated the projects into a unified project list and identified possible sources of funding, criteria to help prioritize projects in the future, benefits, and probable costs. This section provides a synopsis of each step in the process.

A. PRIOR PLANS AND STUDIES

The team began by assembling a list of more than 60 studies and plans that had been previously approved by the cities or PCIDs and reviewed a subset of those plans to compile a list of projects, initiatives, recommendations, strategies, and programs related to last mile connectivity. The list of plans and studies to be reviewed was vetted and confirmed by representatives of each city and the PCIDs. The subset of plans to be reviewed included those completed in the past ten years produced by and for each city, the PCIDs, DeKalb County, Fulton County, and regional plans. It should be noted that a number of plans were still underway at the time that this review was conducted. A list of the studies and plans reviewed is shown in Error! Reference source not found..

In order to establish a pool of potential last mile connectivity projects, the team reviewed each of the plans to identify bicycle and pedestrian, roadway, and transit projects as well as other efforts that would enhance or promote last mile connectivity. These included new segments of sidewalk, multi-use paths and trails, new or extended segments of roadway, widenings, and intersection improvements that incorporate pedestrian facilities. The team also included projects that would improve or enhance access to public transportation, such as improvements to bus or rail station areas as well as projects that would initiate new transportation services (such as additional service along express bus routes). Short-, mid-, and long-term projects were included so as to maximize the pool of potential projects for inclusion in the consolidated, unified project list. The initial review yielded more than 600 bicycle, sidewalk, trail/path, roadway, and transit projects, including 230 projects containing multi-use paths, 230 sidewalk projects, 131 bicycle projects, 67 roadway projects, and 89 transit projects (not mutually exclusive). Many of these projects were short segments of proposed sidewalk or multi-use trail and would later be combined and/consolidated to create bigger projects that align with other project limits.

B. PROJECT LIST

The team assembled a master database of all identified projects with as much relevant information as was available about each project, including but not limited to identification numbers, the municipality where the project would be constructed, limits of projects, descriptions, implementation timeframe, ranking or priority, and estimated cost, etc. Where possible, information about status and project details were also captured.

During the course of the project compilation, several key themes emerged. There is strong interest among all jurisdictions in bicycle facilities, creating better connections between existing streets, developing or expanding multi-use or shared-use paths, and in expanding pedestrian facilities.

TABLE 2. LIST OF STUDIES REVIEWED

Jurisdiction	Name	Year
Brookhaven	Brookhaven-Peachtree LCI 5-year Update	2011
Brookhaven	Brookhaven-Oglethorpe MARTA Station Charrette Report	2013
Brookhaven	Comprehensive Transportation Plan	2014
Brookhaven	Comprehensive Parks and Recreation Master Plan	2014
Brookhaven	Bicycle, Pedestrian, and Trail Plan	2016
Brookhaven	Transit Connector Feasibility Study	2016
Brookhaven	Ashford Dunwoody Road Corridor Study	(ongoing)
Brookhaven	Comprehensive Plan 2034 – Community Work Program	2014 (amended 2016)
Dunwoody	Dunwoody Comprehensive Transportation Plan	2011
Dunwoody	Dunwoody Village Master Plan	2011
Dunwoody	Georgetown/North Shallowford Master Plan	2011
Dunwoody	Dunwoody Sustainability Plan	2014
Dunwoody	Dunwoody Pedestrian Safety Action Plan	2014
Dunwoody	Dunwoody Comprehensive Land Use Plan - Five-Year Update (2015-2035)	2015
Dunwoody	Peachtree Corners-Dunwoody Winters Chapel Road Area Study	2015
Sandy Springs	Sandy Springs MARTA Station Area Plan (LCI Implementation Study)	2003
Sandy Springs	Connecting Sandy Springs (Report and Appendices)	2005
Sandy Springs	Transportation Master Plan	2008
Sandy Springs	Community Development Block Grant Consolidated Plan	2008
Sandy Springs	Economic Development Plan	2011
Sandy Springs	City Center Master Plan	2012
Sandy Springs	Livable Sandy Springs Plan (LCI study) 10-Year Update (and City Center Master Plan)	2013
Sandy Springs	Roswell Road Corridor Livable Centers Initiative Study (LCI) 5 Year Update	2013
Sandy Springs	Bicycle, Pedestrian, and Trail Implementation Plan	2014
Sandy Springs	Sidewalk Master Plan Network	2016
Sandy Springs /Dunwoody	Hammond Drive Corridor Study	2016
Sandy Springs	The Next Ten Comprehensive Plan Update	(ongoing)
PCIDs	Perimeter Focus: Envisioning a New Atlanta Center (LCI) Perimeter @ The Center -Future Focus, 10-year LCI Update	2011
PCIDs	Dunwoody MARTA Connectivity Improvements	2011
PCIDs	Commuter Trail System Master Plan	2012
PCIDs	Perimeter Circulator Implementation Study	2012
PCIDs	Perimeter Park @Dunwoody MARTA Station Master Plan	2014
PCIDs	Bicycle Implementation Strategy	2016
PCIDs	Perimeter Public Space Standards Updated Public Space Standards	2016
Regional	North Fulton Comprehensive Transportation Plan	2010
Regional	ARC Regional Transit Committee Work Program (2014-2016)	2013
Regional	DeKalb Comprehensive Transportation Plan	2014
Regional	Connect 400 - Georgia 400 Transit Initiative	2015
Regional	GRTA Direct Xpress Service Plan	2015
Regional	Regional Transportation Plan (The Atlanta Region's Plan)	2016
Regional	Walk Bike Thrive! (Atlanta regional bicycle and pedestrian plan)	2016
Regional	Atlanta Managed Lane Implemenation Plan	2016
Regional	Revive 285	(ongoing)

Next, the team systematically reviewed these to identify overlapping geographic boundaries, projects that may have been superseded by subsequent plans and projects, and instances in which multiple variations of a project were included in several different plans. At this time, the team also began to identify and update the status of each project, differentiating between projects that have already been constructed, those that are in the design, preliminary engineering, or planning stages, and those that are in the construction phase. Because the boundaries of the study were somewhat fluid (including within the PCIDs, connections to PCIDs, and between activity centers), the team focused on key corridors and the area within relatively close proximity to the PCIDs. Specifically, the team incorporated projects:

- Along major corridors connecting outlying activity centers to the PCIDs
- Along key corridors connecting to each activity center
- Within the activity centers (including the PCIDs)

Projects that were determined to be more than a few miles outside the PCIDs boundary or that were solely focused on operational improvements were omitted during this phase. The team used roughly the following roads as the general limits of the area in which to capture planned and programmed projects:

- Spalding Dr on the north
- Chamblee Dunwoody Rd and the Brookhaven/Chamblee Border on the east
- Peachtree Rd, Mabry Rd, Windsor Pkwy, Northland Dr, and Glenridge Dr on the south
- Lake Forrest Dr on the west

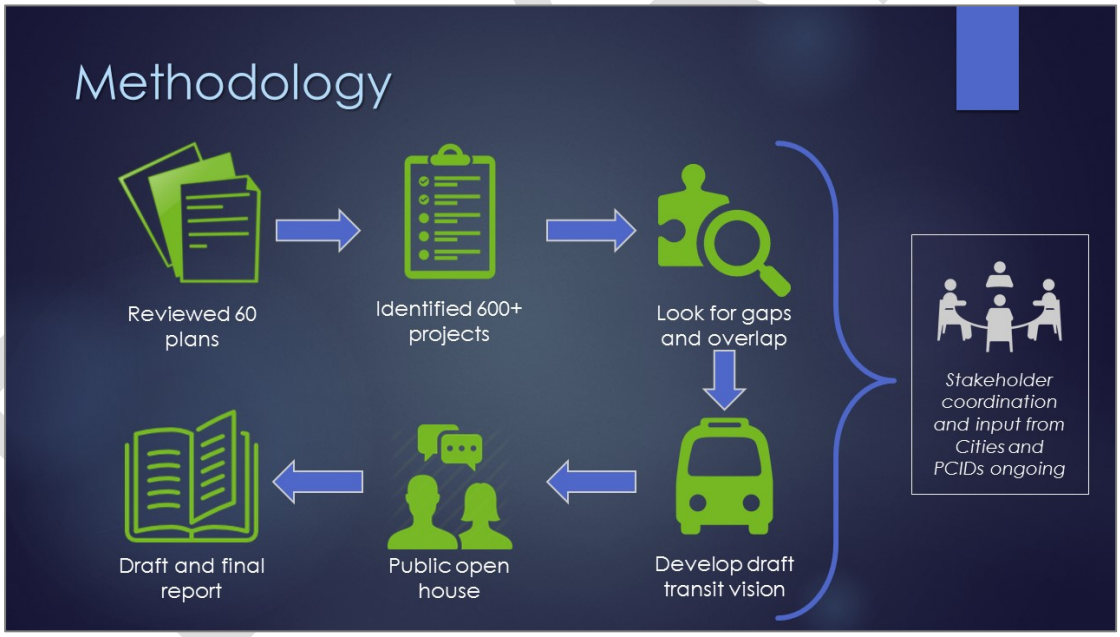


FIGURE 6. PROJECT METHODOLOGY

The team created maps, grouping projects by corridor and sub-area, to help facilitate discussions about overlapping project boundaries, project status, and priorities during work sessions with each jurisdiction. This process of updating and refining the project list continued throughout the course of the study as new information became available.

C. MAPPING EXISTING FACILITIES/SERVICES AND PREVIOUSLY PLANNED/PROGRAMMED PROJECTS

In order to identify gaps and help inform new recommendations, the team obtained Geographic Information System (GIS) data from each jurisdiction and mapped the existing sidewalk, bicycle facilities, trails/paths, roads, and transit service.

As the inventory of previously planned projects was refined, the team mapped confirmed projects. Where possible, the team utilized existing GIS data generated during previous studies. Where such data was not available, the team drew the projects in GIS, verifying extents with information contained within the source plan or study, online maps, and with project partners. Projects were color coded according to facility type and overlaid on the maps of existing facilities and services.

These maps were used to help further refine areas of overlap and gaps between existing, planned, and programmed facilities or projects. In turn, this information was used to help develop recommendations for filling gaps and facilitating connections to existing and future transit and multi-modal infrastructure.

D. TRANSPORTATION PROVIDER COORDINATION

To help inform the transit vision and development of new recommendations for improving last mile connectivity, the project team met with and conducted telephone interviews with representatives of transportation agencies and employer shuttle operators/service providers. Interviews were conducted with shuttle providers as follows:

- Lakeside Shuttle: interview with Crocker Partners (property manager) – October 17, 2016
- Perimeter-Glenlake Shuttle: interview with American Coach Lines (shuttle operator) – October 18, 2016
- Central Park Shuttle: interview with CBRE (property manager) – October 20, 2016

Members of the project team met in-person with GRTA staff on October 21, 2016 and with representatives of MARTA's Planning Division on December 15, 2016. In each of the interviews with transit providers and operators, the project team covered a number of topics related to general logistics and service characteristics as well as opportunities for and challenges to providing improved service within the study area.

Throughout the discussions with transit service providers, several recurring themes emerged. Most notably, providers indicated that traffic congestion in the afternoon peak period has detrimental effects on transit service in the area. Many providers noted that this congestion impacts the ability to ingress and egress commercial and office campuses and lengthens the amount of time it takes to complete a route, thus limiting route frequencies. One shuttle provider identified dedicated bus lanes as a potential opportunity for addressing this issue. Additionally, multiple providers noted the importance of filling in sidewalk gaps to adequately serve last-mile connections for riders traveling to final destinations. While GRTA noted that it recently started providing real-time information to passengers, none of the shuttle providers indicated that they offer a similar service. One provider of shuttle service indicated that there is strong interest among passengers for real-time information; however, the provider was not sure that the costs of implementing this service would be justified. Finally, a chief consideration for many of the providers and their users was an efficient interface with MARTA bus and rail stations. For the shuttles, this means ensuring that their riders have convenient, intuitive connections to MARTA bus and rail stations. For GRTA, this means limiting the duration and number of transfers required for riders to reach final destinations.

There are numerous opportunities for the jurisdictions to coordinate with MARTA to improve travel time and enhance transit service in the Perimeter area. MARTA is interested in pursuing opportunities for transit

signal priority (TSP) along major corridors, including those within the study area. New transit infrastructure, such as bus lanes and queue jumpers, which allow buses to bypass traffic at intersections, could have significant impacts on bus travel time and reliability. Coordinating with local municipalities would allow MARTA and the jurisdictions to pursue multiple funding sources for such projects. It will be important for each of the jurisdictions to continue to coordinate with MARTA as it pursues rolling out recommendations from its recently completed comprehensive operations analysis (COA).

E. STAKEHOLDER AND PUBLIC ENGAGEMENT

Throughout the course of the study, the project team worked closely with representatives of the participating jurisdictions – the project partners. The team facilitated work sessions with each partner jurisdiction individually and a joint work session that involved all participating partners. These sessions provided opportunities to obtain input, feedback, and clarification on previously planned projects, draft recommendations, and the transit vision.

In addition, the team gave briefings to the City Councils and PCIDs Board in late 2016 and early 2017 to provide an update on the study and present draft findings and recommendations. To solicit public input on the draft recommendations, the team facilitated a Public Open House meeting on January 26, 2017 at 400 Northpark in Sandy Springs. Finally, the team presented the final draft of the study to each of the three City Councils and the PCIDs Board in February and March of 2017. These presentations focused on the recommendations and public feedback received during and following the open house. Additional details about these public and stakeholder engagement activities is provided in Section 5.

4. EXISTING CONDITIONS

This section provides an overview of the demographic characteristics and the existing landscape of transportation infrastructure and services available within the study area. Given the unique composition of the study area with multiple overlapping geopolitical boundaries, some data presented in this section has been compiled from multiple data sources and synthesized.

A. OVERVIEW

The study area (shown in Figure 2) is located in north Metro Atlanta. It spans portions of three cities (Brookhaven, Dunwoody, and Sandy Springs), two counties (Fulton and DeKalb), and includes the Perimeter Community Improvement Districts (PCIDs). The study area is partly within the Atlanta-Sandy Springs-Roswell Metro Area, as designated by the U.S. Census. Perimeter Center, or the Perimeter area, is so-known for its location along the I-285 loop around Metro Atlanta, called "The Perimeter." The Perimeter area, indicated by the boundaries of the PCIDs, is roughly four square miles and straddles both GA 400 and I-285.

The PCIDs are self-taxing business districts established in 2001 to supplement and enhance government services and facilities within the District. The PCIDs are a combined community improvement district (CID), comprised of Central (DeKalb) and Fulton Perimeter Community Improvement Districts, and use property taxes to help accelerate transportation and infrastructure improvement projects.[1] The PCIDs utilizes property taxes from commercial properties within the District to provide services and facilities related to:

- Street and road construction and maintenance, including curbs, sidewalks, street lights, and traffic control devices
- Public transportation, including but not limited to services intended to reduce volume of traffic and encourage non-solo trips
- Stormwater and sewage collection and disposal
- Water distribution
- Parks and recreation

The PCIDs use these funds to leverage additional funding to pay for infrastructure and other improvements, working in collaboration with the cities of Brookhaven, Dunwoody, and Sandy Springs.

The Perimeter area is one of the largest business districts in the southeastern United States. It is the largest office market in Metro Atlanta and one of the region's biggest employment centers. In general, it is home to numerous corporate offices, retail, dining, and hospitality establishments as well as some medium and high-density mixed use and residential development. It is estimated that there are more than 123,000 employees and 29 million square feet of office space within Perimeter Center. More than 5,000 companies call the Perimeter area home, including numerous Fortune 500 companies, such as First Data Corporation, Newell Brands, State Farm Insurance, and UPS. Other major employment centers in the study area include Executive Park, Perimeter Summit, and Ashford Green. The area is also home to Perimeter Mall, one of the largest malls in Georgia, and has the highest concentration of medical facilities in Metro Atlanta. Perimeter is home to Emory St. Joseph's Hospital of Atlanta, Northside Hospital, and Children's Healthcare of Atlanta at Scottish Rite.

While commuting is a major focus of last mile connectivity, commuting trips to and from work comprise only a small proportion of total trips made in a given day. Commuting, in U.S. statistics, does not include

[1] Perimeter Community Improvement Districts website, http://perimetercid.org/about/

trips to school by students, workers attending business meetings, trips made to provide services to clients, or travel by people who travel as an essential part of their jobs, such as taxi, bus, or truck drivers. In fact, according to data from the National Household Travel Survey (NHTS), commuting constitutes just 16 percent of person trips and approximately 19 percent of person miles traveled and travel time overall.[2] Other household or resident travel makes up the majority of vehicle miles traveled.

Nationally, over the past ten years, roughly 76 percent of workers drive alone to and from work. This is consistent with statistics for the Atlanta-Sandy Springs-Roswell Metro Area. Across the country, between 2005 and 2015, carpooling decreased as a percentage of travel modes, while public transportation and working at home have increased slightly. Together they still only comprise about 10 percent of all workers. Walking and biking, meanwhile, have remained relatively steady at about three percent and 0.6 percent respectively. Many people commute into and out of the Perimeter area every weekday, and these trips represent a substantial portion of all travel within the Perimeter area, but this study also considers trips made outside of typical peak-hour periods.

The majority of the land uses within the boundaries of PCIDs are commercial, office, and hotel. There are also some pockets of residential development within the PCIDs and mixed use developments that contain residential components. Similarly, the activity centers within the study area – City Springs, Dunwoody Village, Georgetown, and the Brookhaven-Oglethorpe Station area – are also a mix of uses, including commercial, office, retail, and multi-family. In contrast, the areas between the PCIDs and activity centers are largely single family with a few parcels of institutional uses and a few multi-family residential parcels.

B. EMPLOYERS AND EMPLOYMENT DENSITY

Many companies are choosing to relocate to the Perimeter area because of the concentration of amenities, accessibility to public transportation, and proximity to Atlanta and area highways. In the past few years, two large corporations have announced plans to relocate their headquarters to the Perimeter area. State Farm Insurance Company, which already has employees in Perimeter Center, is constructing a new office building on 17 acres along Hammond Dr in Dunwoody. It is anticipated that State Farm will have approximately 6,500 employees on-site once the building is fully operational. Mercedes-Benz is also relocating its North American headquarters to the area and is building an office complex on 12 acres at Abernathy Rd near GA 400. It is estimated that the facility will employ approximately 600 employees.

In addition to the new State Farm and Mercedes-Benz developments, there are a number of pending redevelopment or new developments that have been approved and are in some phase of planning, design, or construction. These include a number of commercial and mixed use projects. The locations of the top 50 employers within the PCIDs are shown in Figure 7. As is visible from the map in Figure 8, many of the new development projects are located within close proximity of a MARTA rail station.

[2] Commuting in America 2013: The National Report on Commuting Patterns and Trends (January, 2015). AASHTO, http://traveltrends.transportation.org/

TABLE 3. TOP EMPLOYERS WITH 300 OR MORE EMPLOYEES

Employer	Est. Number of Employees
State Farm Insurance	6,500
Northside Hospital – Atlanta	5,000
IBM / IBM Internet Security Systems	3,950
Scottish Rite Children's Hospital	3,000
Intercontinental Hotels Group	2,800
Cox Enterprises Inc	2,005
Emory St Joseph Hospital	2,000
United Parcel Service (UPS)	1,678
AirWatch	1,400
Newell Rubbermaid, Inc	1,000
First Data Corp	1,000
Cox Communications Inc	826
Cox Automotive Inc	771
Jas Forwarding USA Inc	700
Mercedes Benz USA	600
Visiting Nurse Health System	600
Nordstrom	450
Convergent Resources Inc	445
Crawford & Co	434
Macy's	411
Global Payments Inc	410
Document Technologies Inc	400
Ventyx	378
Atlanta Journal-Constitution	337
Arby's Restaurant Group Inc	330
Allconnect Inc	315
Axiall Corp	300
BCD Travel	300
Elavon Inc	300
Costco	300
Hanover Insurance Co	300
Noble Systems Corp	300
Southeastern Data Corp Inc	300

(SOURCE: PCIDS, 2015)

1. State Farm
2. Northside Hospital-Atlanta
3. IBM / IBM Internet Security Systems
4. Scottish Rite Children's Hospital
5. Cox Enterprises Inc
6. Emory St Joseph Hospital
7. United Parcel Svc Inc
8. Intercontinental Hotels Group
9. AirWatch
10. Newell Rubbermaid Inc
11. First Data Corp
12. Cox Communications Inc
13. Cox Automotive Inc
14. Jas Forwarding USA Inc
15. Mercedes Benz USA
16. Visiting Nurse Health System
17. Nordstrom
18. Convergent Resources Inc
19. Crawford & Co
20. Macy's
21. Global Payments Inc
22. Document Technologies Inc
23. Ventyx
24. Atlanta Journal-Constitution
25. Arby's Restaurant Group Inc
26. Allconnect Inc
27. Axiall Corp
28. BCD Travel
29. Elavon Inc
30. Costco
31. Hanover Insurance Co
32. Noble Systems Corp
33. Southeastern Data Corp Inc
34. Krystal Co
35. Marriott-Perimeter Center
36. URS Corp
37. Internap Corp
38. Crowne Plaza-Atlanta Perimeter
39. Byers Engineering Co
40. Morrison Management Specists
41. Intersect Group
42. Equity Loans
43. CBS
44. Christian Alcohol & Drug Rehab
45. Hilton-Atlanta Perimeter Sts
46. Home Depot
47. Q100 Radio
48. SAP America Inc
49. Systel Of Delaware
50. Concourse Athletic Club

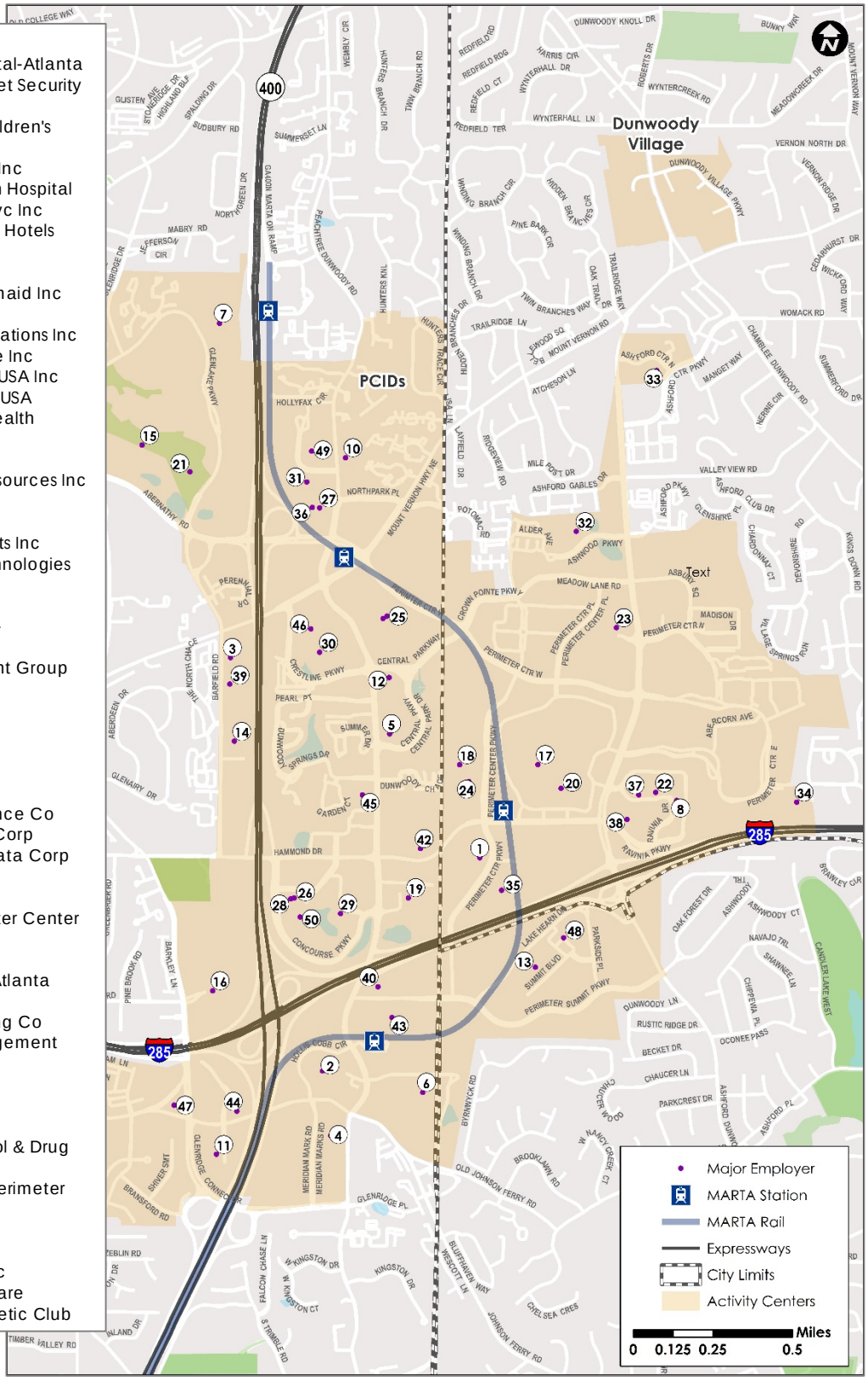


FIGURE 7. LOCATIONS OF TOP 50 EMPLOYERS WITHIN PCIDS (SOURCE: PCIDS, 2015)

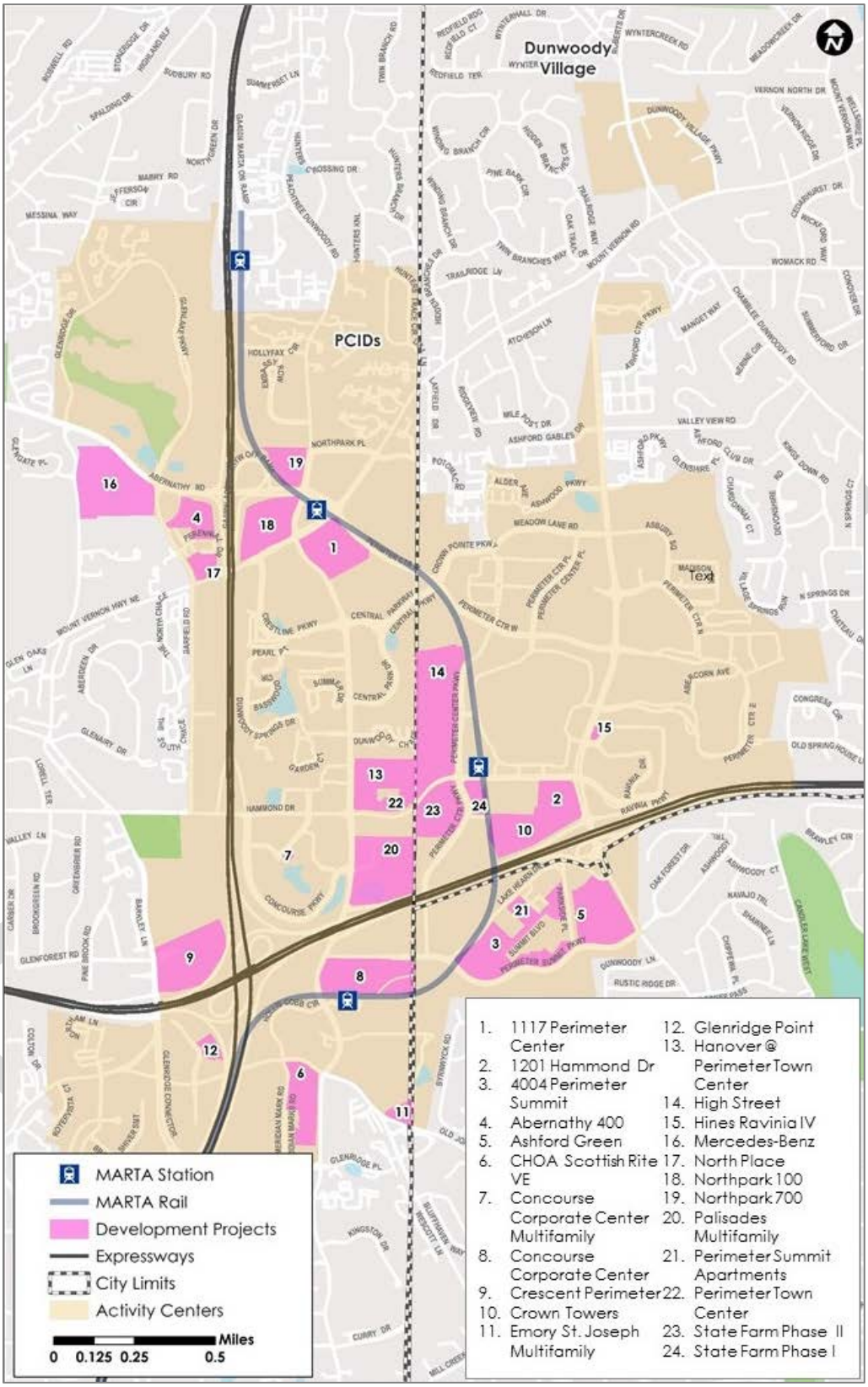


FIGURE 8. PROPOSED AND PLANNED DEVELOPMENT PROJECTS WITHIN PCIDS (SOURCE: PCIDS, BROOKHAVEN, AS OF MAY 2016)

Employment and residential density are both factors in transit service feasibility. An assessment of employment density is shown in Figure 9 and is based on the number of all jobs (part-time and full-time) reported in the 2015 Longitudinal Employer Household Dynamics (LEHD) data. Areas shaded with darker shades of blue denote locations with higher employment densities. As anticipated, the PCIDs area had the highest density of employment by far within the study area, with an especially high concentration of jobs around the hospital complex and Medical Center MARTA Station. The core PCIDs area has a minimum of 9,500 jobs per square mile. Outside of the PCIDs area, the area around the Brookhaven/Oglethorpe MARTA Station, City Springs - a new center point for the City of Sandy Springs, and the Georgetown area have somewhat higher densities of employment opportunities, each containing between 2,400 to 9,500 jobs per square mile. Portions of Dunwoody Village also fall into this category. These areas are potentially transit supportive if a connection can be made between these dense areas of employment and the locations where employees live.

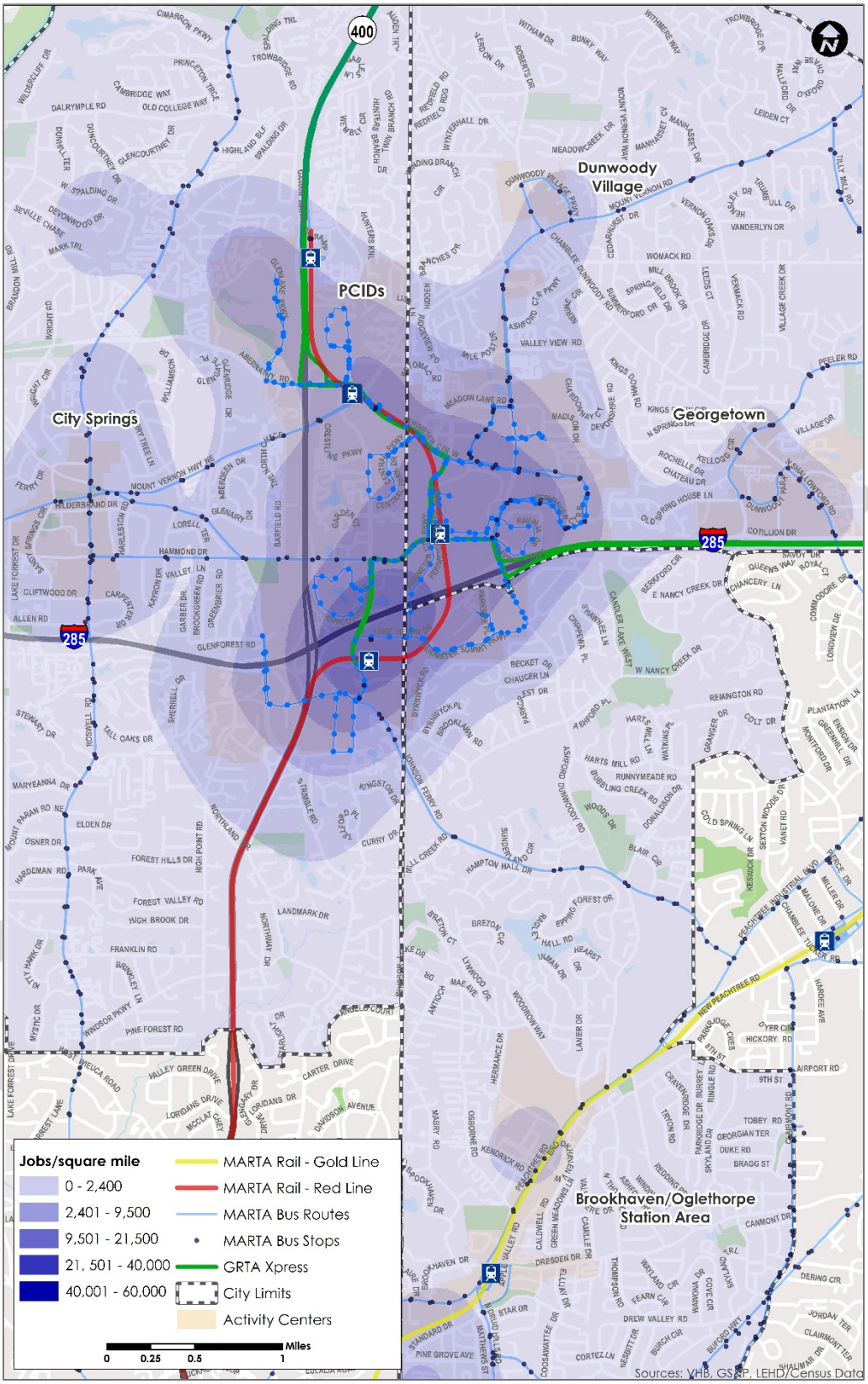


FIGURE 9. EMPLOYMENT DENSITY
(SOURCE: LEHD, US CENSUS, 2015)

C. POPULATION AND RESIDENTIAL DENSITY

Collectively, the three cities within the study area are home to nearly 200,000 people according to population estimates from the 2011-2015 American Community Survey (ACS):

- Brookhaven: 50,812
- Dunwoody: 47,727
- Sandy Springs: 100,691

According to the ACS, these represent slight increases over estimates for the preceding three years, including roughly a seven percent increase for Brookhaven, a two percent increase in Dunwoody, and a four percent increase in Sandy Springs since 2013. It is anticipated that populations in all three cities will continue to grow, as has been the case throughout Metro Atlanta over the past few years. According to the U.S. Census Bureau, the region grew by just under two percent between 2014 and 2015 and estimates indicate that over the five-year-period from 2010 to 2015, population in Sandy Springs increased at a faster pace (roughly 12 percent) than in Brookhaven or Dunwoody (both roughly six percent).

The populations of these cities are relatively dispersed, with pockets of moderately concentrated residential housing scattered across each city, as shown in Figure 10. Among the three cities, Brookhaven has the greatest concentration of residents, with approximately 6,700 people square mile, followed by Dunwoody with 3,700 and Sandy Springs with 2,700. There are several residential developments already within Perimeter Center, including but not limited to those along Hammond Dr between Peachtree Dunwoody Rd and Perimeter Summit Pkwy, and Dunwoody Chace just north of that area. Future developments, including Palisades, High Street, and Lakeside will also contribute residential units to the area.

The Institute of Transportation Engineers (ITE) produces household density threshold guidelines for transit demand. For example, ITE recommends densities of four to five households per acre to support buses with headways of 60 minutes. Using these guidelines as well as household densities obtained from the Atlanta Regional Commission's (ARC) 2020 projections, each of the traffic analysis zones (TAZ) within the study area was assessed. Figure 10 shows each of the TAZs with the type of transit recommended in ITE's guidelines. Areas shaded in pink denote locations that can support buses every 30 minutes and areas shaded in orange identify locations that can support buses every 60 minutes. Based on the ITE guidelines of residential density alone, there are few areas within the study area that can support buses at least every 30 minutes to 60 minutes. Within the study area, the locations with the highest residential density include the portion of Sandy Springs just south of I-285, northeast of the intersection of Abernathy Rd and Roswell Rd, the area surrounding North Springs MARTA rail station, and the northwest corner of Dunwoody.

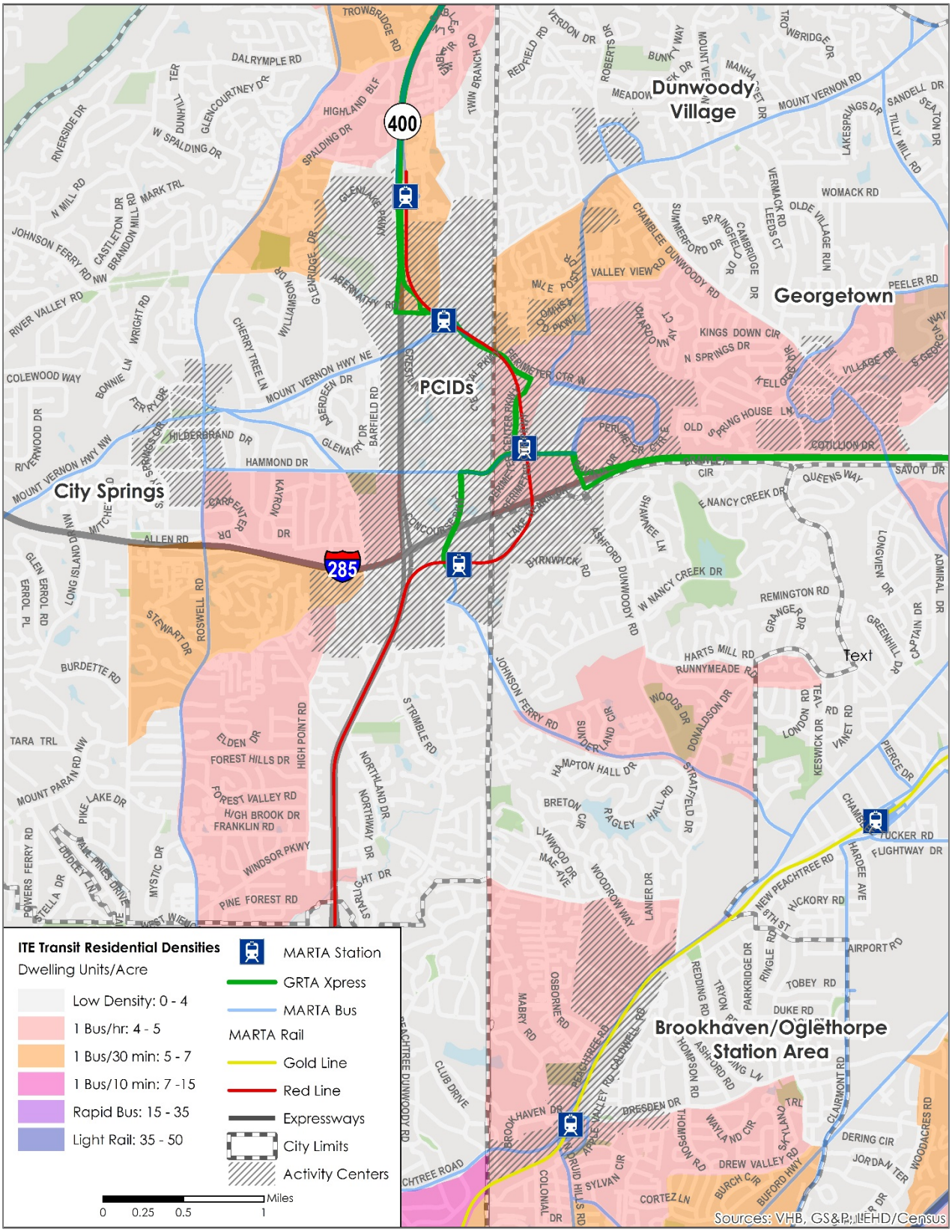


FIGURE 10. RESIDENTIAL DENSITY WITHIN THE STUDY AREA (SOURCE: ARC 2020 DATA)

D. 2013 Perimeter Travel Survey Results

In 2013, the PCIDs, in coordination with ARC, conducted transportation surveys of residents, employees, and visitors. This effort included a mail home travel survey of residents, intercept surveys at major Perimeter employment centers, and intercept surveys at three MARTA Stations (Medical Center, Dunwoody, and Sandy Springs). Data from these surveys were compiled to understand and assess transportation services within Perimeter.

Several questions directly asked participants about factors affecting their decisions to take transit in Perimeter and if they would in the future. When asked what are the most important factors for deciding to take a local circulator, the top two responses were "short wait times" and "get to destination quickly" as shown in Figure 11. Local circulator was included in the question because of the current employer-sponsored small bus circulators in service and at the time, there were discussions of potential consolidation or addition of a new circulator.

The top two responses indicated a focus on time savings, which is difficult for a circulator to deliver, particularly during congested peak periods in the mornings and afternoons. However, one of the benefits of employer shuttles over a consolidated circulator route is the directness of service. The design of major office campuses in Perimeter in most cases include long walks to the front doors that face away from the streets making it difficult for pedestrians to access. The employer shuttles provide direct service to the front door without making any other stops. Therefore, if consolidated, any riders whose stop is not first, would have to spend additional time on-board. The third most frequent response was "low fare." A consolidated shuttle, even if it had a small fare, would be hard pressed to beat free shuttles provided by employers and building owners.

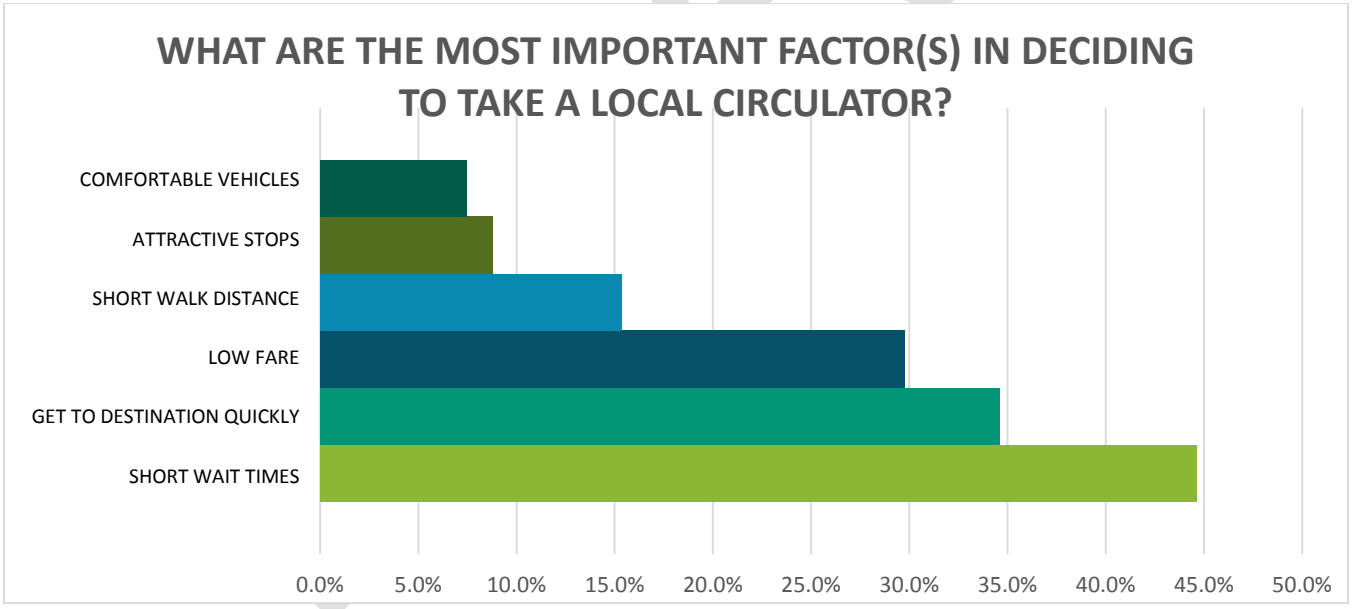


*Figure 11. Local Circulator Factors**

**Note, participants were able to select more than one important factor, therefore percentages do not add up to 100%*

Respondents to the survey were asked how likely they would be to use various types of transit or pedestrian facilities. As shown in Figure 12, just under 25 percent of participants stated they would use a free shuttle, approximately 30 percent said they would be likely or very likely to use pedestrian facilities, and almost 45 percent stated they would likely or very likely use rapid bus services. While rapid bus service was the

most likely transit mode participants stated they might use, it is important to note that over 50 percent of participants stated they are neutral or would be unlikely to use any of these modes at all.

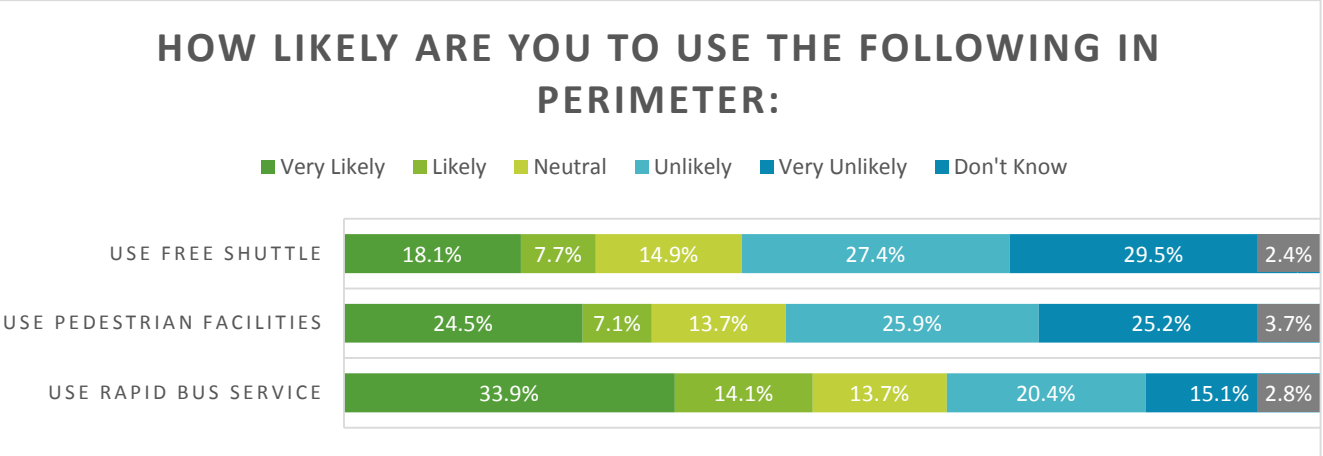


FIGURE 12. LIKELINESS TO USE FACILITIES OR SERVICES IN PERIMETER

Transit circulating within Perimeter is mostly applicable to people who live in Perimeter or commute via an alternative mode to Perimeter and need that last mile connection from MARTA stations or GRTA stops. While there are transit services currently providing connections to Perimeter, it is important to note that they do not match well with existing travel patterns to the Perimeter area. MARTA provides services mostly to the south, while GRTA currently provides limited express service from Cumming to the north and from West Conyers to the southeast. However, areas such as Gwinnett County and Cobb County did not have direct transit service to the Perimeter area at the time of the survey, which may have affected participants' responses. Plans are in development for two new GRTA routes to the Perimeter area, from East Cobb County and from Gwinnett County (see Section 4.G for more details). For employees residing in such areas, a last mile connection via shuttle, pedestrian facilities, or rapid service, is unlikely without regional transit service connecting them to Perimeter. Consequently, increasing the overall mode share in Perimeter would require coordinating with other transit agencies (i.e., CobbLinc and Gwinnett County Transit) to provide service to areas that are currently not served.

E. EXISTING BICYCLE AND PEDESTRIAN NETWORK

The Perimeter area has a variety of non-motorized transportation options to serve residents, employees, and visitors. The PCIDs and Cities of Brookhaven, Dunwoody, and Sandy Springs have made significant investments in bicycle and pedestrian infrastructure in recent years. Each city within the study area has an existing, yet fragmented, network of sidewalk. Within the boundaries of the PCIDs, sidewalk coverage is fairly complete, with sidewalk provided on both sides of most roads and even within some commercial campuses. In total, it is estimated there are over 35 miles of sidewalks within the PCIDs. Outside of the boundaries of the PCIDs, sidewalk coverage is sparser and concentrated primarily on major roads leading into and out of the various activity centers, such as Mt. Vernon Rd, Roswell Rd, Ashford Dunwoody Rd, Peachtree Dunwoody Rd, Chamblee Dunwoody Rd, and Johnson Ferry Rd. Several smaller connector streets, such as Glenridge Dr, Windsor Pkwy, West Nancy Creek Dr, and Womack Rd are also fairly well covered by sidewalk. There is a significant gap in sidewalk along the residential portion of Hammond Dr within the City of Sandy Springs, west of Glenridge Dr. Sidewalk is also lacking in many residential

neighborhoods and on some private roads within office complexes, making connections to the existing network difficult. Additionally, some existing segments of sidewalk do not meet current design standards, such as on Johnson Ferry Rd near the medical complexes. Figure 14 shows existing sidewalk within the study area.

FIGURE 13. LACK OF SIDEWALK ALONG CENTRAL PKWY (CREDIT: K. WESCOTT)

Georgia law generally prohibits riding a bicycle on the sidewalk (Section 40-6-144 Georgia Code); however, the code provides local municipalities the flexibility to make it legal for children under the age of 12 to operate bicycles on sidewalks. Each City within the study area has a different approach to bicycles on sidewalks: the cities of Dunwoody and Sandy Springs allow broader use of sidewalk than specified by the Georgia Code and Brookhaven allows children under age 12 to ride bikes on sidewalks. (For additional details on bicycle traffic laws, refer to the Georgia Code or the PCIDs *Bicycle Implementation Strategy)*.

Within the boundaries of the PCIDs, there are more than ten miles of bike lanes. Figure 15 shows the locations of existing bicycle facilities, including bike lanes, shared shoulders, and multi-use paths or trails. The predominant facility type within the City of Sandy Springs is the sidepath, which are provided on several roads in and around City Springs, including portions of Mt. Vernon Hwy, Johnson Ferry Rd, Roswell Rd, and Lake Forrest Dr. Existing bicycle lanes are mainly concentrated within the Dunwoody portion of the PCIDs, on the roads surrounding Perimeter Mall, including Perimeter Center West, Perimeter Center East, Perimeter Center Pkwy, Perimeter Center Pl, and Meadow Ln. Buffered bike lanes, which provide more separation from vehicular traffic than typical on-street bike lanes, are present on several roads, such as Perimeter Center East and Perimeter Center Place. Bike lanes are also present on a portion of Barfield Rd, between Hammond Dr and Mt. Vernon Hwy in Sandy Springs and on Perimeter Summit Pkwy and a portion of Ashford Dunwoody Rd in Brookhaven. There is a gap between existing bike lanes along Mt. Vernon Rd between the Dunwoody-Sandy Springs city limits and Perimeter Center West. Several shared shoulders or "sharrows" are present on key corridors in Sandy Springs, such as Mt. Vernon Hwy, Lake Forrest Dr south of I-285, and a section of Johnson Ferry Rd. In Brookhaven, shared shoulders are provided on parts of Johnson Ferry Rd and Dresden Dr among others.

Currently, there are two dedicated multi-use trails within the study area: Dunwoody Trailway in Dunwoody and Nancy Creek Trail in Brookhaven. The Dunwoody Trailway begins in Brook Run Park and ends at Georgetown Park at Chamblee Dunwoody Rd. Nancy Creek Trail originates near Keswick Park in Chamblee, on Durden Rd and connects Blackburn Park with Murphey Candler Park, traveling along Ashford Dunwoody Rd between Blackburn Park and West Nancy Creek Dr. The Abernathy Greenway Park in Sandy Springs, between Brandon Mill Rd and Wright Rd, features includes a lighted trail. Several future multi-use paths or trails are planned for the area, including an expansion of the PATH 400 trail, which are discussed in more detail in Section C.

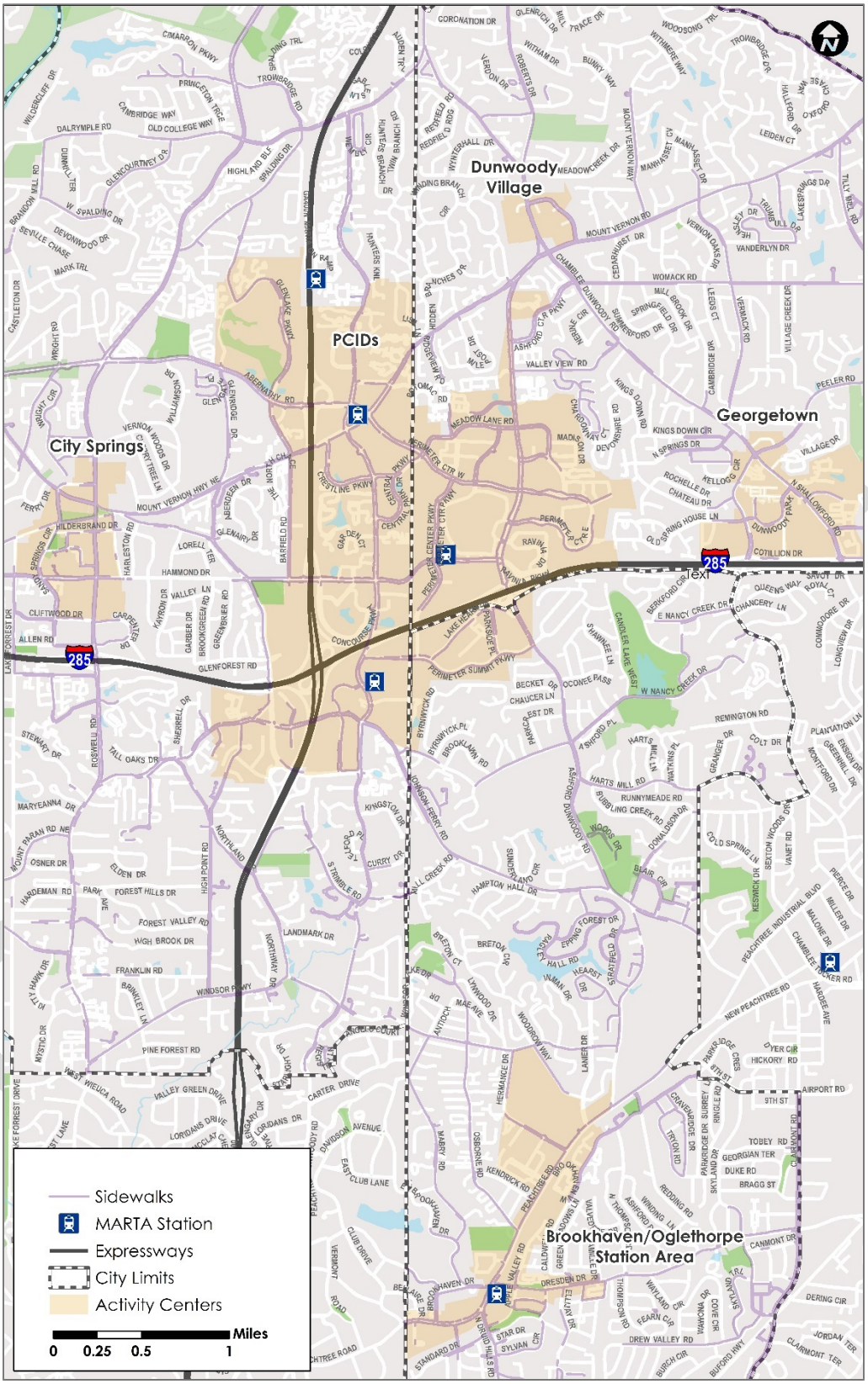


FIGURE 14. EXISTING SIDEWALK WITHIN THE STUDY AREA
(SOURCE: BROOKHAVEN, DUNWOODY, SANDY SPRINGS, ARC)

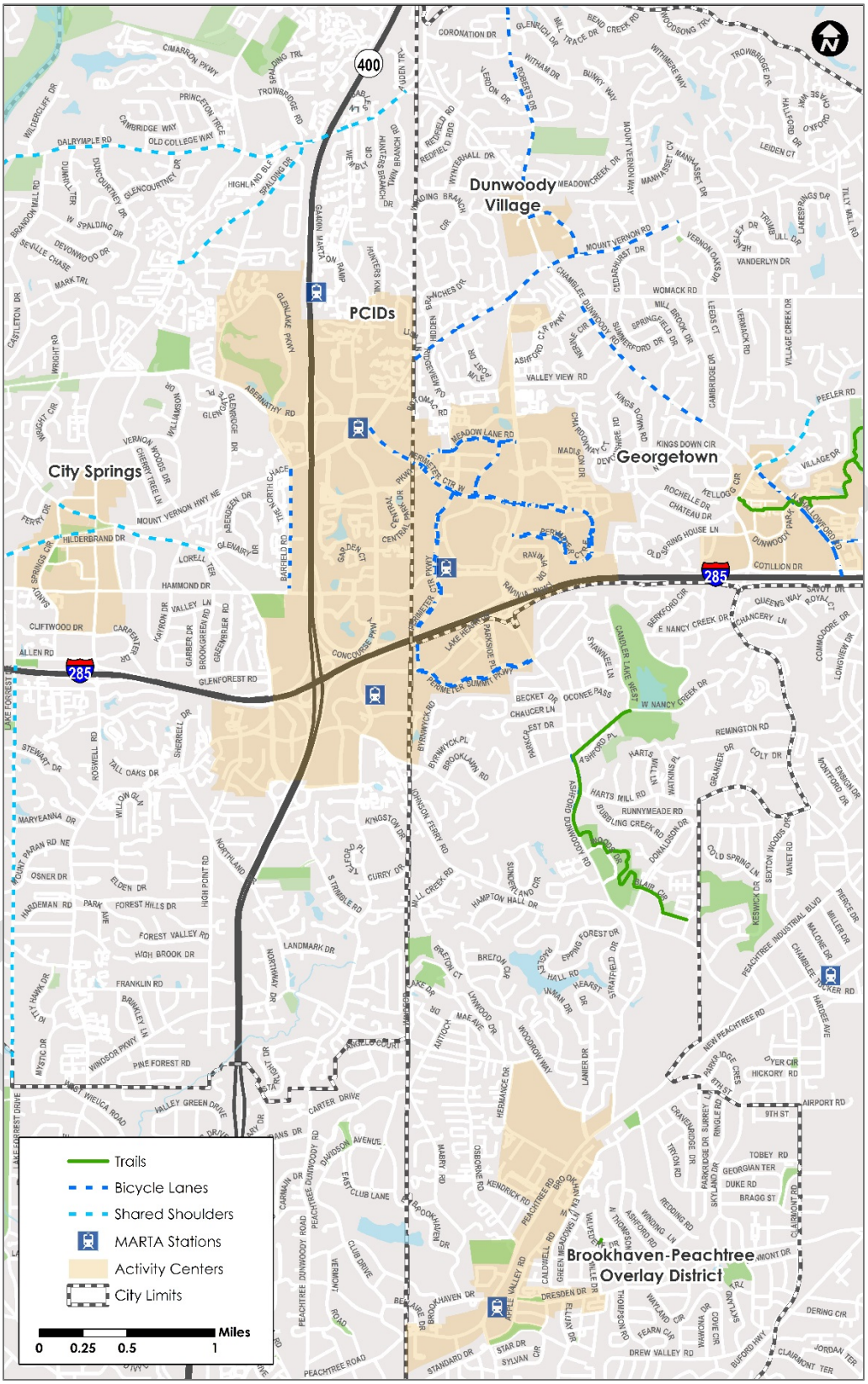


FIGURE 15. EXISTING BICYCLE FACILITIES AND MULTI-USE PATHS OR TRAILS (SOURCE: BROOKHAVEN, DUNWOODY, SANDY SPRINGS, PCIDS, ARC)

Despite the fragmented nature of the active transportation network, the cities and PCIDs continue to invest in and make strides in constructing facilities such as walking paths, trails, and bike lanes, and that is one reason this *Last Mile Connectivity Study* is being undertaken. There is substantial demand for non-motorized travel within the area. Recent research and travel data point to trends that indicate that bicycling is an important component of creating a desirable market for commercial, retail, and residential development. There is strong evidence that companies are making conscious decisions to locate in places that offer employees a variety of commute options. In fact, State Farm repeatedly cited proximity to transit as one of the key reasons for building new hubs and relocating to certain sites, including Perimeter Center, where the company will be adjacent to MARTA's Dunwoody Station. In Tempe, AZ and Richardson, TX, State Farm's new facilities are within walking distance of light rail stations. Employers and employees are increasingly indicating preferences for living and working in areas that offer convenient access to a variety of entertainment and housing options.

Building upon these trends, in 2012, the PCIDs commissioned a *Commuter Trail Master Plan* that aimed to facilitate connections between MARTA rail stations and workplaces within the Perimeter area. As part of that study, the project team analyzed concentrations of job sites in relation to the location of MARTA stations to identify desirable or likely paths that might be traveled between the rail stations and workplaces. Figure 16 shows these desirable or likely paths. High density nodes, such as around Concourse, State Farm, and Ravinia, in close proximity to the Dunwoody MARTA Station create opportunities for many non-motorized trips. The area around Dunwoody MARTA Station exhibits the highest concentration of demand for trips to employment sites, followed by areas along Glenridge Dr, the hospital complex, and by pockets or hot spots scattered throughout the area. Recreational amenities, such as the Nancy Creek Trail and the Dunwoody Trailway and the forthcoming PATH 400 trail and Perimeter Park @ Dunwoody Station, also generate demand for bicycle and pedestrian facilities and connections between them.

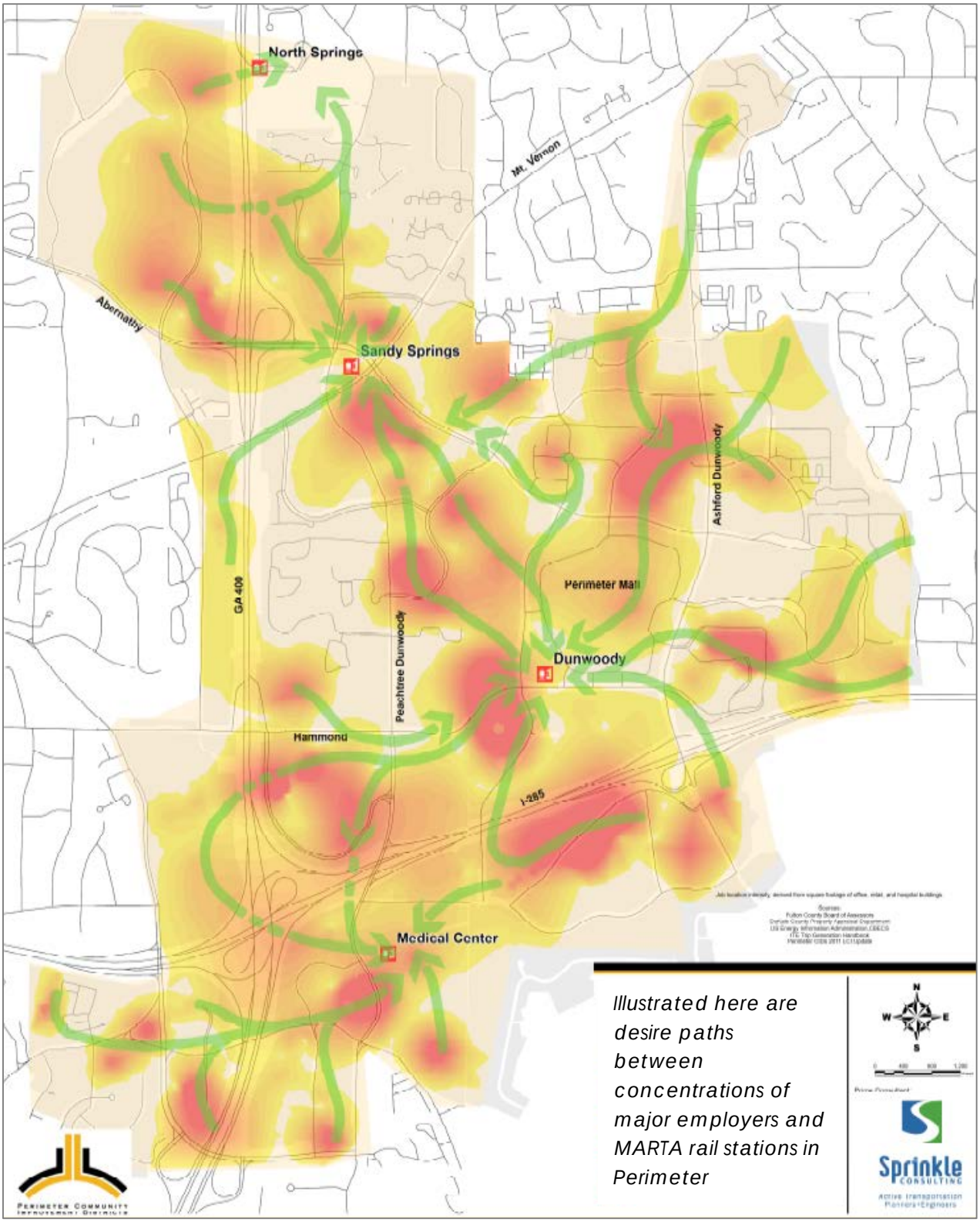


FIGURE 16. LIKELY OR DESIRABLE PATHS BETWEEN EMPLOYERS AND TRANSIT
(SOURCE: FULTON COUNTY BOARD OF ASSESSORS, DEKALB COUNTY PROPERTY APPRAISAL DEPT., US ENERGY INFORMATION ADMINISTRATION, CBECS, ITE TRIP GENERATION HANDBOOK, PCIDS 2011 LCI UPDATE)

F. EXISTING ROADWAY NETWORK

The roadway network within and around PCIDs is widely varied – roads vary in terms of the number of lanes, the width, and speed limits. Several key corridors have medians present, including Ashford Dunwoody Rd, Perimeter Center East and West, and portions of Hammond Dr, Abernathy Rd and Glenridge Dr among others. Posted speed limits generally range from 35 miles per hour (mph) to 45 mph, and in school zones, speed limits are restricted to 25 mph during certain hours.

The study area is bisected by two major highways: Interstate 285 (I-285), which runs east-west through the study area, and State Route 400 (GA 400), which is the major north-south highway that connects the Perimeter area to the City of Atlanta. GA 400 also provides access to I-75 and I-85 and to destinations north of the study area. In accordance with guidance from the Federal Highway Administration (FHWA), all roads are assigned a functional classification based upon the role they play in moving vehicles through the roadway network. Functional classification also provides context about a road based upon the expectations about roadway design, speed, capacity, and relationship to existing and future development. There are three classes of roadways: arterials, collectors, and local roads. All streets and highways are grouped into these three classes, and there are sub-categories, which are determined based upon a number of factors and characteristics. All three classifications of roads are present within the study areas, although most roads are classified as minor arterials, as shown in Table 4.

TABLE 4. FUNCTIONAL CLASSIFICATION OF KEY CORRIDORS

Corridor	Functional Classification
Abernathy Rd	Urban Principal Arterial
Ashford Dunwoody Rd	Urban Minor Arterial
Chamblee Dunwoody Rd	Urban Minor Arterial
Glenridge Connector / Glenridge Dr	Urban Minor Arterial
Hammond Dr	Urban Minor Arterial
Johnson Ferry Rd	Major Collector in Sandy Springs, Minor Arterial in Brookhaven
Mount Vernon Rd/Hwy	Major Collector east of Roswell Rd, Minor Arterial west of Roswell Rd
Peachtree Dunwoody Rd	Urban Minor Arterial
Windsor Pkwy	Major Collector

The key roads considered as part of this study are generally city streets. Most intersections within the boundaries of the PCIDs are equipped with pedestrian signals and stamped asphalt crosswalks. Outside of the PCIDs, key intersections also generally include crosswalks and pedestrian signals, but this varies throughout the study area. To provide some context for the types of roads that characterize the Perimeter area, below are general descriptions of key segments of roads based upon data obtained from the Georgia Department of Transportation (GDOT).

Abernathy Road – The portion of Abernathy Rd within the Perimeter area has between four and six lanes. It is widest near the on and off ramps to GA 400. The speed limit west of Roswell Rd is 35 miles per hour (mph) and changes to 45 mph east of Roswell Rd. Sidewalk is present in some segments. It is divided by a median composed of concrete and, in some locations, grass. A bike lane is present on portions of Abernathy Rd, west of Cherry Tree Ln.

Ashford Dunwoody Road – The portion of Ashford Dunwoody Rd within Dunwoody (closest to the Perimeter area) has a speed limit of 45 mph. In Dunwoody, it has anywhere from four lanes, near Mt. Vernon Rd, to ten lanes near the Perimeter Mall. Sidewalk is present in some segments and most segments between Ashford Center North and I-285 have a planted median divider. South of I-285, in Brookhaven, the speed limit changes to 40 mph and the road transitions from six to two lanes south of Perimeter Summit Pkwy. Ashford Dunwoody Rd has no median within Brookhaven and bike lanes and sharrows are present in the vicinity of Blackburn Park.

Chamblee Dunwoody Road – Chamblee Dunwoody Rd within Dunwoody is an undivided road with a speed limit of 35 mph. Sidewalk is generally present on one side of the road or the other. It is mainly a two- or three-lane road, except near I-285, where additional turn lanes are provided.

Glenridge Drive – The portion of Glenridge Dr north of I-285 has a speed limit of 35 mph. It generally has sidewalk present on one side of the road and has two or four lanes. Portions of the road are divided by a concrete median. Between Johnson Ferry Rd and Roswell Rd, Glenridge Dr is similar, with a speed limit of 35 mph, two to four lanes with some additional turn lanes and striped median dividers in some locations.

Hammond Drive – Hammond Dr spans both Sandy Springs and Dunwoody and changes dramatically from one end of the road to the other. The speed limit is 35 mph. Sidewalks are generally present on both sides of the road within the PCIDs. The width of the road varies greatly, from two lanes west of Glenridge Dr to nine lanes on the bridge over GA 400. Parts of the road have a concrete median in the middle. In Dunwoody, most of the median is landscaped.

Johnson Ferry Road – Johnson Ferry Rd between Old Johnson Ferry Rd and Glenridge Dr has a speed limit of 35 mph. Sidewalk is present in some segments of the road, which has between four and six lanes. West of Glenridge Dr, Johnson Ferry Rd continues as primarily a two-lane, undivided road with some turn lanes and a speed limit of 35 mph through City Springs.

Mount Vernon Highway/Mount Vernon Road – Mt. Vernon Hwy within the City of Sandy Springs has a posted speed limit of 35 mph. It has between two and six lanes. Between Crestline Pkwy and Northpark Pl, there is a planted median. Segments of the western portion of the road do not have sidewalks, while the portion east of GA 400 has sidewalk on one side of the road or the other. East of Northpark Pl, near the border between Sandy Springs and Dunwoody, Mt. Vernon Hwy becomes Mt. Vernon Rd. Within Dunwoody, Mt. Vernon Rd has a speed limit of 35 mph and bike lanes on both sides of the road. It is mainly a two-lane road but widens near Ashford Dunwoody Rd.

Peachtree Dunwoody Road – Peachtree Dunwoody Rd from Abernathy Rd to Glenridge Connector is mainly a divided road with a narrow concrete or planted median. The posted speed limit is 35 mph. It has between four and seven lanes, and sidewalk is generally present. South of Glenridge Connector, Peachtree Dunwoody Rd narrows to two lanes and is primarily residential.

In general, roads in and around the Perimeter area are characterized by high-volume traffic. The number of vehicles traveling on a given road varies widely, ranging anywhere from 12,400 vehicles per day on Mt. Vernon Hwy near Peachtree Dunwoody Rd to 49,000 on Ashford Dunwoody Rd in front of Perimeter Mall. Average annual daily traffic (AADT) volumes for the year 2015 as reported by GDOT are provided for select key corridors and are listed in Table 5.

TABLE 5. AVERAGE DAILY TRAFFIC VOLUMES ON SELECT KEY CORRIDORS

Key Corridor	Closest Cross-Street	AADT
Abernathy Rd	Glenridge Dr	33,100
Ashford Dunwoody Rd	Perimeter Summit Pkwy	18,900
Chamblee Dunwoody Rd	Kings Down Rd (south of Womack Rd)	16,000
Glenridge Dr	Glenridge Connector	20,700
Hammond Dr	Glenridge Dr	28,400
Johnson Ferry Rd	Old Johnson Ferry Rd	15,600
Mt. Vernon Hwy	Perimeter Center West	26,000
Perimeter Center W	Perimeter Center Pkwy	28,500
Peachtree Dunwoody Rd	Dunwoody Springs Dr	25,500

(SOURCE: GDOT, 2015)

G. EXISTING TRANSIT SERVICES IN STUDY AREA

Perimeter is served by two regional transit agencies: the Metropolitan Atlanta Rapid Transit Authority (MARTA) and Georgia Regional Transportation Authority (GRTA). Additionally, several privately operated local shuttles provide access to major employers and hospitals in Perimeter from the MARTA rail stations. This section provides an overview of the existing and planned services for each of these entities. Figure 17 shows a map of transit service in the area.

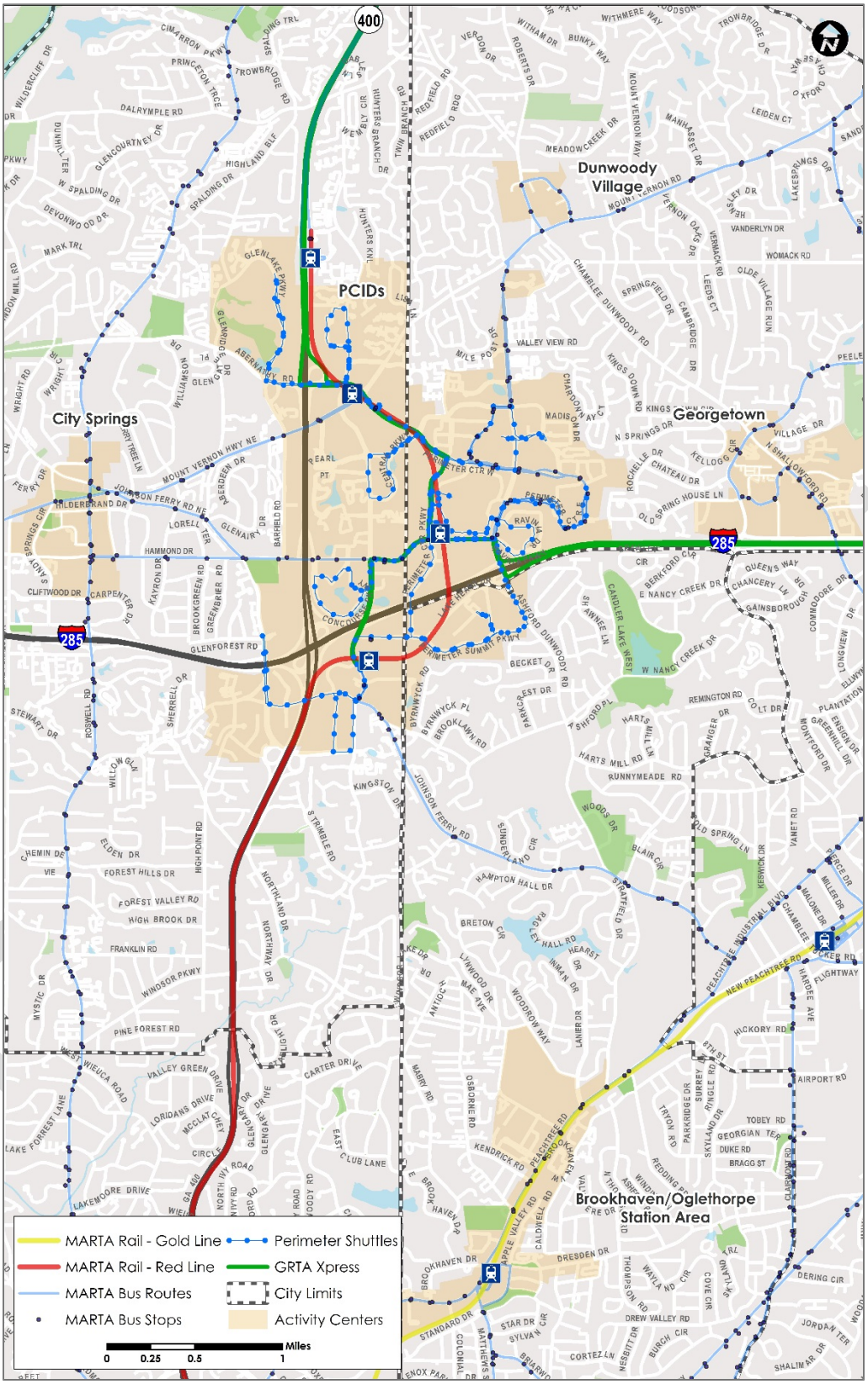


FIGURE 17. EXISTING TRANSIT
(SOURCE: ARC, PCIDS)

MARTA

MARTA is the regional rail and local bus provider for Fulton, DeKalb, and Clayton Counties, which includes the cities of Brookhaven, Dunwoody, and Sandy Springs. There are three rail stations inside the PCIDs boundaries: Dunwoody, Medical Center, and Sandy Springs. Additionally, the North Springs station is located less than a mile to the north of the PCIDs boundaries. Five local MARTA bus routes provide connectivity within the tri-city study area.

- MARTA Route 5 provides a connection between Perimeter and City Springs, with service from Dunwoody MARTA rail station west along Hammond Dr, northwest along Glenridge Dr, and then south along Roswell Rd into Buckhead. Weekday headways range from 15 to 20 minutes during the day and peak hours. (Note: MARTA plans to increase the frequency of buses on this route to every 15 minutes).
- MARTA Route 87 provides a direct connection between City Springs and Perimeter with service from Dunwoody MARTA rail station west along Hammond Dr and then north along Roswell Rd. Weekday headways range from 15 to 20 minutes during the day and peak hours.
- MARTA Route 148 provides connectivity from Perimeter to City Springs with service from Sandy Springs MARTA rail station southwest along Mt. Vernon Rd through City Springs and continuing west to Powers Ferry Rd/Northside Dr. Weekday service is provided during peak hours every 60 minutes.
- MARTA Route 25 provides connectivity from the Brookhaven/Oglethorpe MARTA Station to Perimeter with service north along Peachtree Rd and then northwest along Johnson Ferry Rd to the Medical Center MARTA rail station. Weekday service operates approximately every 45 minutes during the day, including during peak periods.
- MARTA Route 150 provides connectivity between Perimeter and Dunwoody Village as well as local circulation throughout the Perimeter area with service from Dunwoody MARTA rail station east along Hammond Dr, north along Ashford Dunwoody Rd, east and looping around Perimeter Center East, north along Perimeter Center Place, north along Ashford Dunwoody Rd, and northeast along Mt. Vernon Rd through Dunwoody Village. Weekday service ranges from 30 to 45 minutes during the day and peak periods.

In 2015 MARTA completed a *Comprehensive Operations Analysis (COA)* in which all routes were analyzed and evaluated for efficiency and coverage. The recommendations from the COA include multiple types of transit service, including local bus, arterial rapid bus, and circulator service. The recommendations within the study area include all of these service types.

Routes 25 and 150 will generally continue as local service with buses provided every 30 to 90 minutes. The general alignment of these routes is expected to remain the same. Local circulator services are short, circuitous routes that provide access to MARTA rail stations and improve last mile circulation and connectivity. There is generally one recommended for Perimeter, but no specific routing decisions have been made.

Arterial rapid bus service will provide buses at least every 15 minutes and will leverage transit signal priority, queue jumpers, and bus lanes where applicable. These arterial rapid bus routes will serve as core routes throughout the MARTA system. The COA recommends stops spaced approximately every ¼ to 1/3-mile to help maintain frequent service. Within the study area, arterial rapid bus service is planned for Roswell Rd and Hammond Dr, where service is currently provided by routes 5 and 87 respectively. The COA recommendations for rapid bus service for route 5 propose an increase in frequency from the current base service every 15 to 20 minutes to a proposed base of at least every 15 minutes. Proposed

recommendations for route 87 call for an increase in service frequency from the current base of one bus every 20 to 25 minutes to a base of at least every 15 minutes, and every 10 minutes during peak periods. Arterial rapid bus route alignments have not been finalized, but the segment of Hammond Dr from Roswell to Dunwoody Station will be included. Information about additional planned and proposed service is provided in Section 6.E.1.

GRTA

GRTA is a statewide agency that works to reduce congestion and improve mobility throughout the state. One of GRTA's programs is the commuter bus service, *Xpress*. *Xpress* provides peak hour commuter service from outlying suburban areas into the Perimeter area, Downtown Atlanta, Midtown Atlanta, and Buckhead. This service operates directionally during weekday peak commuting hours in coach buses throughout the region.

GRTA completed a COA in 2015 and rolled out service changes on September 6, 2016. This included a revised route to the Perimeter area, increasing the total number of routes serving Perimeter to two.

- Route 401 [New] provides service from Cumming into Perimeter with stops at the Sandy Springs MARTA rail station, Perimeter Center Pkwy North, Perimeter Center Pkwy Office North, Dunwoody MARTA rail station, Peachtree Dunwoody Concourse, and Medical Center MARTA rail station. This route formerly served only the North Springs MARTA Station. There are three inbound trips and three outbound trips each weekday.
- Route 428 provides service from West Conyers and Panola Rd along I-285 into Perimeter with stops at Dunwoody MARTA rail station,

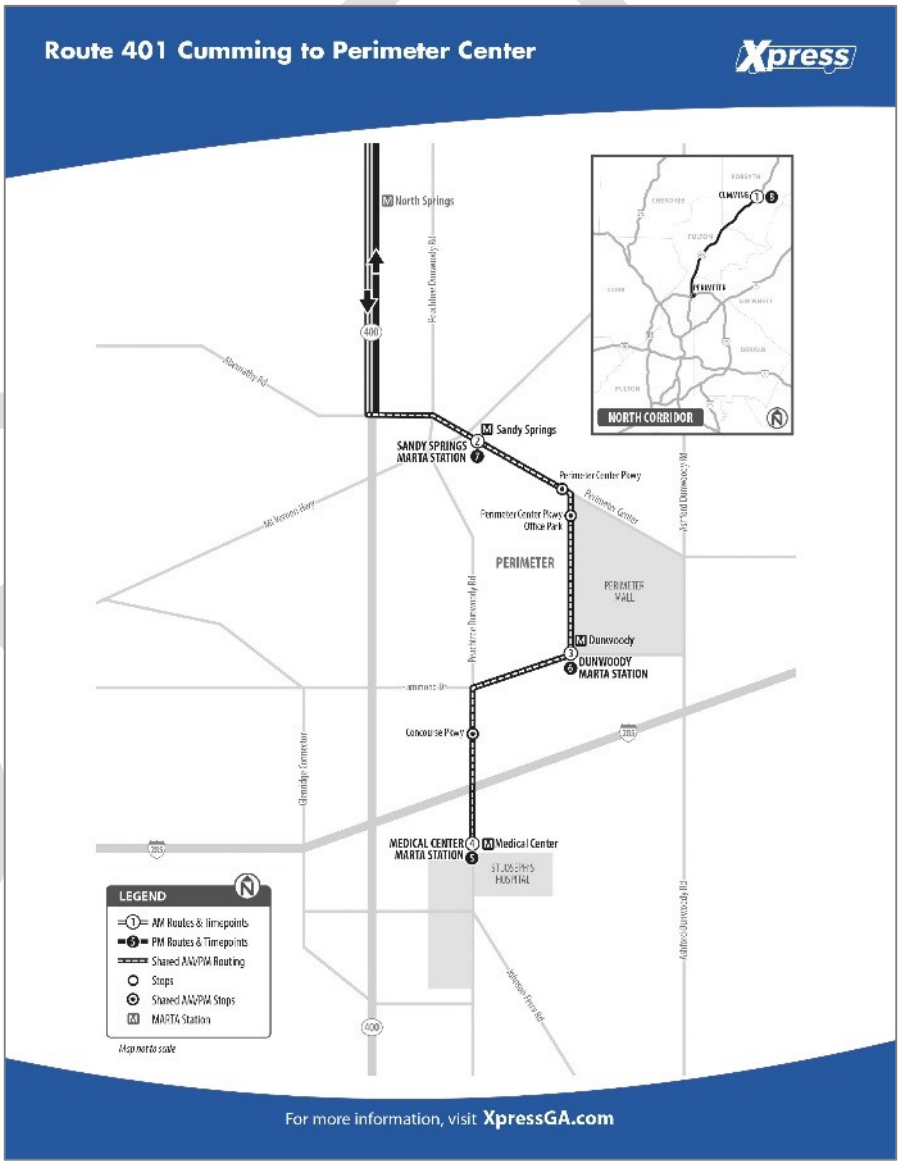


FIGURE 18. MAP OF GRTA XPRESS ROUTE 401 THROUGH PERIMETER

Peachtree Dunwoody Concourse, and Medical Center MARTA rail station. There are four inbound trips and four outbound trips each weekday.

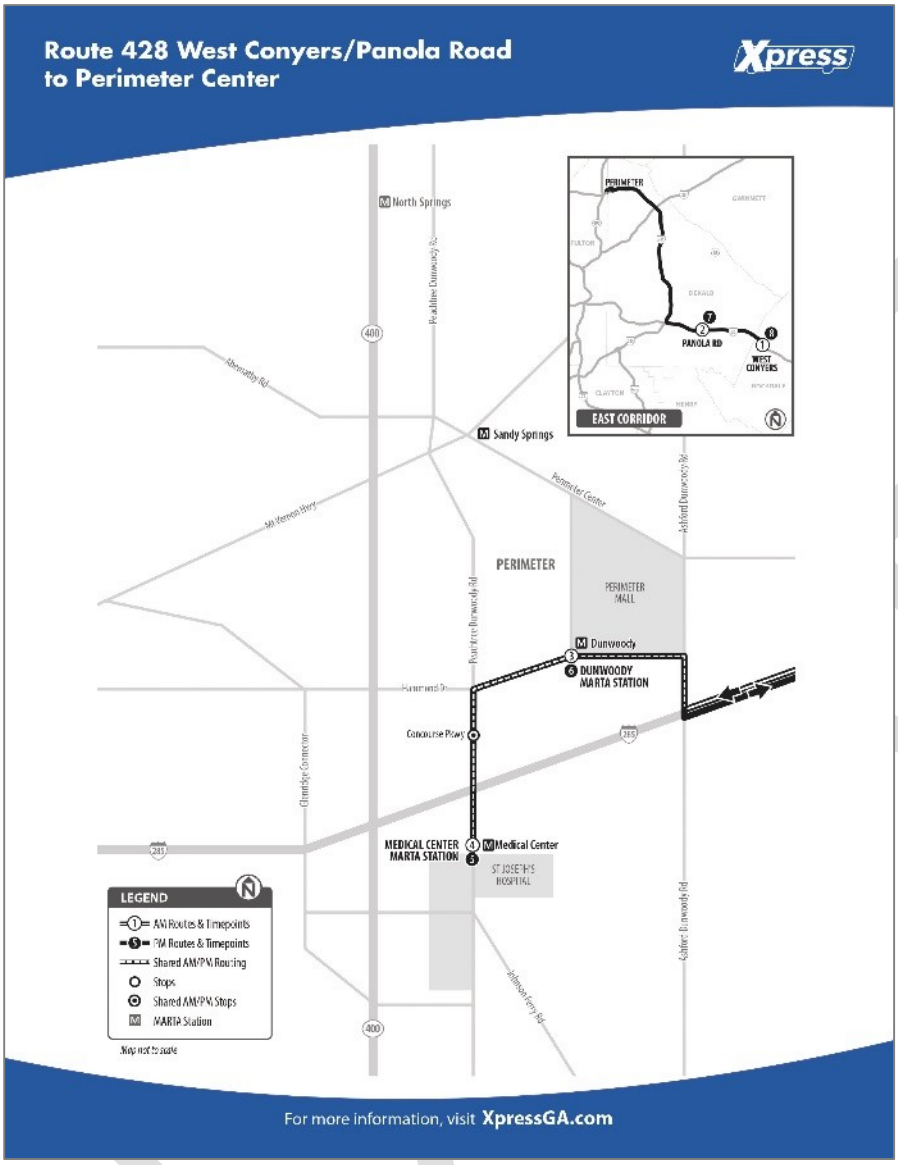


FIGURE 19. MAP OF GRTA XPRESS ROUTE 428 THROUGH PERIMETER

Each of these routes travel to multiple destinations within the Perimeter area to provide access throughout the area, as shown in Figure 18 and Figure 19, including to multiple MARTA rail stations. Additionally, GRTA *Xpress* has two new routes planned for Perimeter in 2017: one from Kennesaw in Cobb County to Perimeter and one from Sugarloaf Mills in Gwinnett County to the Perimeter area. These new routes will provide alternative transportation options for commuters and visitors from those areas who currently have no direct form of transit to access Perimeter. These new routes will also increase the number of people requiring last mile connectivity to circulate around Perimeter once they arrive.

The major issue for GRTA *Xpress* service in Perimeter is keeping to the schedule while circulating. The GRTA *Xpress* buses get caught in congested traffic, which reduces schedule reliability.

Local Shuttles

Private shuttle service is offered by many area hotels, hospitals, companies, and office parks. Hotel shuttles tend to serve employees as well as guests staying at the hotels, whereas hospitals and companies limit service to tenants and their guests doing business with companies in the complex. Some companies have partnered to pool resources and work directly with a third party shuttle operator.

Within the PCIDs area, there are 13 shuttles that are part of the Perimeter Connects program, a partnership with PCIDs and the Perimeter Business Alliance. All but one of the shuttles provides service to a MARTA rail station, with one of the Cox shuttles connecting remote parking to the offices. Shuttles are provided and

operated by private companies that pool resources and pay to offer this service to tenants, employees, and their guests. Shuttle routes are shown in Figure 20.

These shuttles are free to those working in or visiting the offices they serve. Identification is not required for boarding because visitors are allowed to use the shuttles. Based on interviews with providers, no specific incidents were raised because of the open boarding policies.

The employer shuttle services are generally offered during morning and afternoon peak commute periods, approximately between 6:30 AM and 10:00 AM and between 3:30 PM and 6:30 PM Monday through Friday. The frequency of service varies depending on the shuttle operator and employer needs. Most shuttles run every 20 to 30 minutes; however, some operate more or less frequently. The Cox Enterprises shuttle circulates continuously throughout the day between 6:45 AM and 6:45 PM, making stops at multiple office buildings and the Sandy Springs MARTA Station. The Concourse Shuttle operates three shuttle services Monday through Friday: the first daytime shuttle runs from 6:40 AM to 5:20 PM; the second daytime shuttle runs from 6:20 AM to 3:50 PM; and the evening shuttle operates between 6:30 PM and 11:45 PM. On Saturdays the Concourse Shuttle operates from 7:00 AM to 6:35 PM.

The major issue with employer shuttles is keeping to a schedule during congested peak hours. Therefore, the shuttles do not have specific schedules, but rather provide constant circulation between their specified office location and MARTA rail station. Each shuttle provides service approximately every 15 to 30 minutes based on their distance from the rail station and congestion.

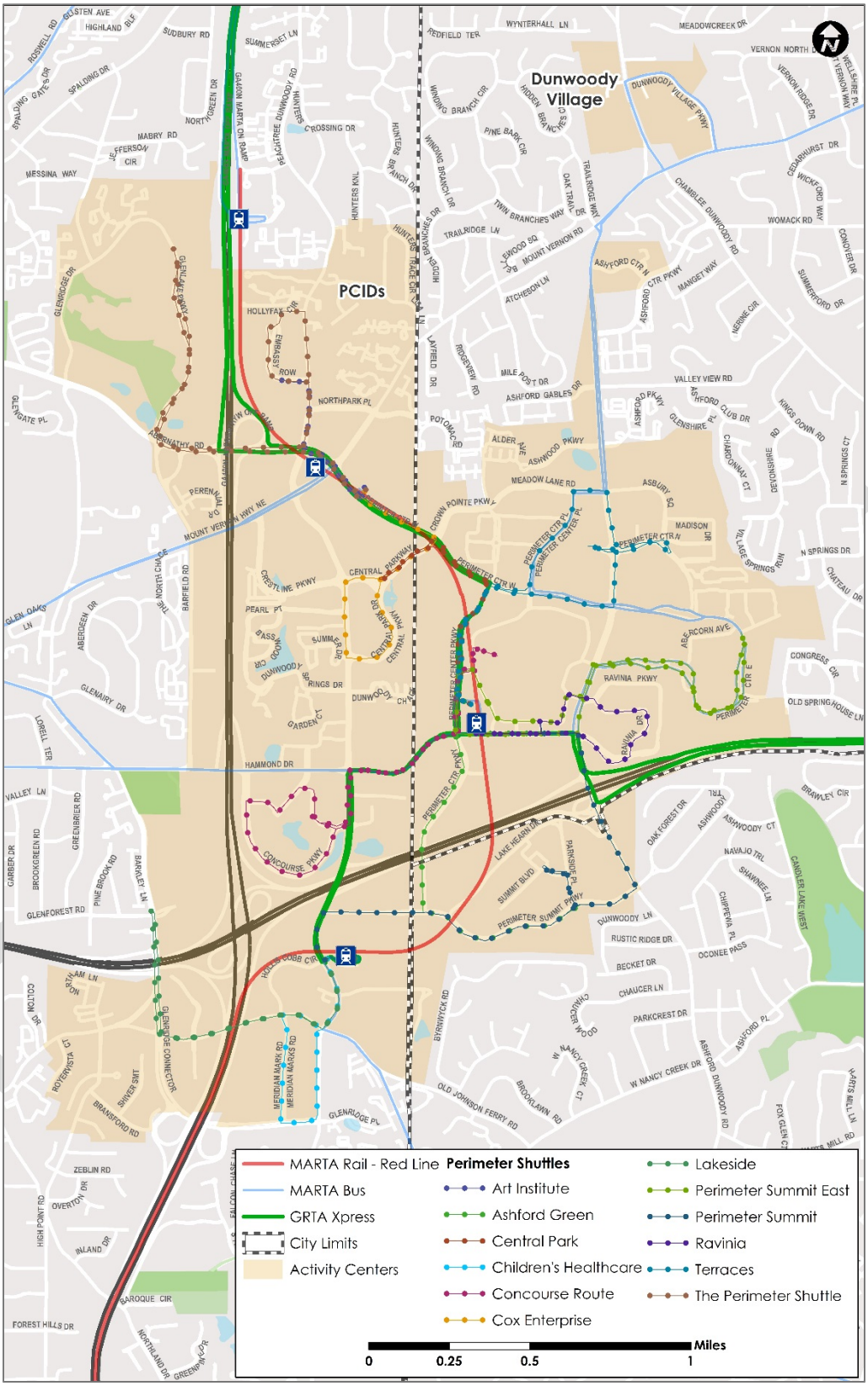


FIGURE 20. TRANSIT SERVICE WITHIN PCIDS
(SOURCE: ARC, PCIDS, PERIMETERCONNECTS)

5. STAKEHOLDER COORDINATION AND PUBLIC OUTREACH

A. SUMMARY OF PUBLIC OPEN HOUSE AND PUBLIC COMMENTS

On January 26, 2017, the project team facilitated a Public Open House at 400 Northpark (1000 Abernathy Rd NE) to provide an overview of the study and to get feedback on findings and draft recommendations. Sixty (60) people attended, including individual citizens and representatives of commercial property owners or managers, employers, government agencies, the Perimeter Community Improvement Districts, homeowners' associations, bicycle and pedestrian advocacy groups, and area hospitals. Three identical overview presentations were given during the session and display boards were set up for attendees to review. Copies of the handouts, displays, and overview presentation are included in Appendix D.

FIGURE 21. ATTENDEES TALK WITH THE CONSULTANT PROJECT MANAGER DURING THE PUBLIC OPEN HOUSE ON JANUARY 26, 2017

Attendees were asked to provide comments about their highest and lowest priorities with regard to last mile connectivity. Following the Open House, materials were placed on the websites of each of the participating cities, including the comment forms. Comments were accepted via mail or email for a one-week period following the session.

B. COMMUNITY FEEDBACK ON PRIORITIES

Overall, the study and its findings and recommendations were well-received by attendees, and feedback was generally positive. Attendees provided feedback in the form of written comments about their highest and lowest priorities with regard to last mile connectivity. In general, high priorities include **additional or more robust transit service**, **safety** – especially for pedestrians and regarding vehicle speeds - and shared-use or multi-use paths. Other people expressed preferences for **filling gaps in sidewalks**, **separating bicycles and pedestrians from the roadway**, **reducing or better enforcing vehicle speed limits**, **bike lockers at MARTA stations**, providing **continuous connections** from one point to another, and providing **priority lanes for transit vehicles** during peak hours. Many people indicated

FIGURE 22. ATTENDEES REVIEW ONE OF THE DISPLAYS ABOUT BICYCLE AND PEDESTRIAN FACILITIES DURING THE PUBLIC OPEN HOUSE

location- or facility-specific priorities, and some commented on overall strategies, such as creating walkable corridors of businesses and destinations rather than continuing car-centric development patterns.

Discussions also reflected the need for future projects to consider factors such as road design, ability to secure funding, and the realities of the physical environment, such as topography and heat or sun during the summer months. In general, people were supportive of the idea of transit-only lanes within the Perimeter area and of investing in better connections to create a continuous network of bicycle and pedestrian facilities. Comments on attendees' **highest priorities** are shown below, grouped roughly by topic or subject.

Sidewalk/Pedestrian Facilities

- 8-ft wide sidewalk/bike routes to keep bikes off the streets – it is a waste of money to put in sidewalks that are so narrow; there are obstructions in the sidewalks, including telephone poles
- Sidewalks coming out of the neighborhoods, e.g. Brandon Mill Rd
- Sidewalks on major roads
- Wider sidewalks allowing for better pedestrian and bike traffic
- Mid-block ped crossing islands

Connections between Bicycle and Pedestrian Facilities

- Complete sidewalks/multi-use paths connected
- Improve quality of sidewalk/path connectivity - it is a patchwork of sidewalks and paths and crosswalks
- Connecting bike/ped network - too fragmented right now
- Ped/bike connections, separate from the street and safe to use

Bicycle Facilities

- Bike lanes on Mt. Vernon before considering Abernathy
- A safe bike lane down Windsor Pkwy to Town Brookhaven – the left turn on Hermance by bike is dangerous
- Bike lanes on Dresden Dr between Thompson Rd and Clairmont Rd
- Bike lockers at Brookhaven MARTA Station
- Prioritize bike use
- Protected bicycle lanes
- Keep bikes and pedestrians separate – this is dangerous - follow NACTO guidelines
- Bike parking and showers at buildings

Safety and Speed

- Roads need to be designed to limit speed of cars; speed limit signs don't work
- Better enforcement and zero tolerance speed zones
- Safer for pedestrians at major intersections, including Abernathy Rd and Roswell Rd, Hammond Dr and several roads
- Safety should be a priority - did not hear anything on improvements of sidewalk safety
- Traffic calming throughout PCID
- Reduce speed limits to 30 MPH max throughout PCIDs

Shared-Use or Multi-Use Paths

- Path development
- Pedestrian and bike-friendly walking paths that connect fully from point A to point B
- Connect the west side or Roswell Rd to Perimeter area via Hammond Dr or near I-285 with PATH400 or similar trail

Transit Service / Facilities

- Connections to MARTA via pedestrian access or buses (MARTA station enhancements)
- Improved public transport options into perimeter with hours conducive to ridership
- Improved MARTA frequency during peak periods
- Small MARTA stations midway between the 4-mile distances of existing stations
- Access to Brookhaven station from the north without forcing cars to turn onto Dresden
- GRTA bus from Alpharetta to accommodate healthcare workers schedules - 6a-7:30p
- BRT / transit priority
- Bus rapid transit/personalized transit
- Bus priority and bus lanes
- Shuttle and bus priority lanes during peak hours
- In Sandy Springs Perimeter area - if buses and shuttles are answer, need to change negative attitude toward using them. Sexier bus designs and stops, more frequent stops, better information and communication to riders, bus priority lanes, limit stops to 1/2 mile (walkable limit), create multiple choices for riders at any given location, and color code shuttle loop buses for easy recognition
- Arterial transit:
    - From City Center and along Mt. Vernon and Hammond Dr
    - Along Hammond Dr to Perimeter Mall MARTA Station
    - From City Springs to Sandy Springs MARTA Station
- Circulator or more frequent bus service west of City Springs in particular, River Valley Rd/Riverside/Heards Ferry Rd
- Public shuttles/circulator with regular schedule connecting to City Springs, Dunwoody Village, Georgetown, Brookhaven
- Transit - with complexes and new construction going up, getting people out of cars is paramount; truly surprised not to hear about street cars
- Rideshare service (e.g. Uber/Lyft) partnerships at MARTA rail stations
- MARTA Stations are not welcoming; they are "cement tombs" and ought to be designed for humans and protected from the elements

Roadway Projects

- Hammond Dr widening

Other

- Get feedback from existing users
- Solutions that are short-term, easy-to-implement such as signal priority, etc.
- Bridging city boundaries
- Street trees
- Showers at work so walking there in summer is socially acceptable

- Cohesion between cities; it is a buy-in between all four entities
- First implement policies and laws to discourage single occupancy privately owned motor vehicles to park and drive at will to PCIDs destinations
- Low hanging fruit should include restriping existing lanes today, don't wait until repaving
- Reduce vehicle miles driven/CO2 emissions
- Zoning is not a friend of last mile connectivity because there is seemingly no rhyme or reason for clustering of destinations; each development plans separately
- The Beltline shows that placing businesses along a pedestrian corridor works better than trying to connect car-centric offices and shops
- Further options for elderly (rideshare, etc.)

In addition to feedback about high priorities, attendees were asked to indicate what types of projects or investments they **do not consider to be high priorities**. Overall, fewer people provided feedback on low priorities, but among those who did, there was a mix of opinions ranging from a preference to invest in pedestrian facilities or transit before bike facilities, focusing on efforts other than transit, and projects that do not relate directly to the provision of facilities, such as wayfinding and partnerships with carsharing services. Several people also wrote to register their opposition to the multi-use path along the Nancy Creek creekbed near Remington Rd. They cited its proximity to residential properties (back yards) and other nearby options for people on bike or on foot to connect with PATH400 and Brook Run Path using Harts Mill and West Nancy Creek as reasons for their opposition.

6. Overall Vision and Unified Master Plan

A. Overview

The purpose of this study is to provide a clear vision for future transportation needs in the Perimeter market, identify a consolidated program of transportation investments, and explore existing and future transit opportunities. Over the past several years, the PCIDs and Cities of Sandy Springs, Dunwoody, and Brookhaven have undertaken numerous studies with transportation components, including comprehensive transportation plans; bicycle, pedestrian, trail and greenway plans; parks plans; transit studies; comprehensive plans; subarea master plans; and Livable Centers Initiative (LCI) Studies[3], among others. Each of these studies reflect the individual jurisdictions' transportation needs and priorities, and recommend investments to achieve a specific vision for the area. In order to develop a unified master plan for last mile connectivity in the study area, the first step was to establish consensus around a vision and series of related goals and objectives. The vision, goals, and objectives of the *Last Mile Connectivity Study* are discussed further in the following section.

The vision, goals, and objectives served as a framework for the development of the consolidated project list.

B. Vision and Goals

The vision and goals of the *Last Mile Connectivity Study* were developed in close coordination with the project partners and reflect a shared approach towards improving last mile mobility in the study area. They combine and borrow elements from previous plans and studies in each jurisdiction and represent general consensus around the future vision for the Perimeter area among project partners.

Throughout discussions and activities over the course of the study, it became clear that one of the critical needs is to ensure that the Perimeter area can be one in which residents, employees, and visitors have choices in how they get around. Project partners believe it is important to make it easy, convenient, and safe for people to walk, bike, or take transit while traveling to, from, or within the Perimeter area, to make alternative modes more viable, and reduce dependence on single-occupancy vehicle trips. Another critical need is to foster better connectivity among key origins and destinations, such as transit stations and stops, workplaces, retail developments, health and educational facilities, and open spaces. Reducing car trips and increasing opportunities for biking and walking can help reduce traffic congestion, improve public health, and enhance the natural environment. These improvements will help the Perimeter area and neighboring communities continue to attract residents, businesses, and institutions, contributing to the overall economic, social, and environmental sustainability of the area and furthering the overall goal of becoming the Southeast's premier livable center.

The overall vision for last mile connectivity within the study area is as follows:

> ***In the future, the Perimeter area will offer a robust network of safe, easy, and convenient opportunities for people to walk, bike, or take transit. Well connected and accessible workplaces, commercial areas, educational and health facilities, and open spaces will increase the economic competitiveness of the Perimeter area, helping it thrive as a desirable place to work, live, and visit and sustaining the Perimeter into the future.***

[3] The Atlanta Regional Commission's "Livable Centers Initiative (LCI) is a program that awards planning grants on a competitive basis to local governments and nonprofit organizations to prepare and implement plans for the enhancement of existing centers and corridors consistent with regional development policies, and also provides transportation infrastructure funding for projects identified in the LCI plans." (*Source: Atlanta Regional Commission*)

The vision and goals of this study will be achieved over time through development and implementation of strategies and specific objectives or projects contained within this report. The goals of the *Last Mile Connectivity Study* are to:

- **Improve mobility** by managing vehicular traffic in a way that reduces congestion, improves flow, balances local and regional travel patterns, and makes it easy for people to integrate alternatives to automobile transportation (by foot, bike, or via transit). Mobility will be improved both for "last mile" trips between activity centers and destinations within the Perimeter area as well as short trips within the Perimeter area, by leveraging available multimodal transportation services and encouraging development patterns that emphasizes connectivity and human-scaled development.
- Ensure that residents, employees, and visitors to the Perimeter area have **convenient access** to **area and regional transit services**.
- Ensure that pedestrians, bicyclists, and transit users have **safe connections** between transit services and destinations within the Perimeter area.
- Provide **multimodal transportation choices** for people to travel within the Perimeter area, so that people can travel around easily without having to use a personal vehicle. These modes include walking, bicycling, and transit.
- **Enhance connectivity** between neighborhoods, workplaces, commercial areas, health and educational facilities, and open spaces, and **create a built environment that fosters connections between buildings and the street or sidewalk**.
- **Enhance the economic competiveness** of the Perimeter area by providing a range of transportation options, making the area more attractive to business and employees.
- Identify **corridors** within the Perimeter area **that can support high capacity transit services** to help facilitate last mile connectivity in the future.
- **Prioritize** transportation **programs, projects, and improvements** that **complement or enhance** the unique **characteristics and assets** of the Perimeter business district and surrounding areas.
- **Enhance the sense of place and quality of life** within the Perimeter area by providing a transportation system that encourages active living, human interaction, and enjoyment of assets in the Perimeter area.

The goals for the *Last Mile Connectivity Study* are accompanied by suggested objectives and measures of success. The objectives and measures are provided in Appendix E. The cities and PCIDs should coordinate to establish baseline measures and set specific targets for the future. Note that some of the performance measures will require ongoing interagency coordination among the cities and with transit providers, including MARTA, GRTA, and shuttle operators. The plans and budgets of the cities and agencies will directly impact how and when these objectives are met and may require the cities and PCIDs to revise the measures as the plans and budgets evolve.

C. BICYCLE AND PEDESTRIAN PLAN: SIDEWALKS, TRAILS, MULTI-USE PATHS, AND BICYCLE FACILITIES

As discussed previously, the Cities and PCIDs recognize the importance of providing bicycle and pedestrian facilities for residents, workers, and visitors; in recent years, they have implemented a number of bicycle and pedestrian improvements, including sharrows, bicycle lanes, wide sidewalks, crosswalks, multi-use paths, trails, and mid-block crossings. Each of the cities and the PCIDs has a defined strategy for implementing additional bicycle and pedestrian facilities on corridors as well as off-road alignments. The extent of multimodal facilities identified in the Cities' and PCIDs' plans and studies is evidence of the jurisdictions' continuing commitment to invest in alternate modes of transportation. The challenge lies in refining and reframing hundreds of identified bicycle and pedestrian projects into a consolidated project list. The project team, in coordination with the cities and PCIDs, thoroughly reviewed each project to ensure it (a) met the vision and goals of the *Last Mile Connectivity Study* and (b) worked seamlessly with other identified projects to create a seamless multimodal network. This process is described in this section.

I. PLANNED AND PROGRAMMED PROJECTS

The first step in developing a consolidated project list was to identify recommendations related to last mile connectivity in previous plans and studies from the cities and PCIDs. In coordination with the project partners, each of these projects underwent a thorough review process for consideration in the consolidated project list. Some recommendations were determined to no longer have community support. Others were no longer viable due to land use and development patterns that had changed since the approval of the plan or study. These projects were removed from consideration. The remaining projects were added to the project list as planned and programmed projects.

Sandy Springs

The majority of Sandy Springs' bicycle and pedestrian projects come from the *Bicycle, Pedestrian, and Trail Implementation Plan* and the *City Center Master Plan*. The *Bicycle, Pedestrian, and Trail Implementation Plan* identifies specific bicycle and pedestrian improvements, including sidepaths, bicycle lanes, and other facilities on each major corridor in the city as well as a proposed system of multi-use trails. The *City Center Master Plan* recommends improvements in the City Springs area to foster a more walkable and bikeable environment. The recommendations include a variety of complete streets and new multimodal connections, to be implemented with the redevelopment of the area surrounding City Springs. Additional projects on the list include bicycle and pedestrian improvements associated with a planned widening of Hammond Dr and bicycle and pedestrian improvements on Mt. Vernon Hwy and Johnson Ferry Rd in conjunction with a project that will install two roundabouts at the intersection. Several of these projects are "programmed," or have dedicated funding for one of more project phases, which include preliminary engineering, right-of-way acquisition, environmental study, and construction. This funding is from a variety of sources, including Sandy Springs' transportation special-purpose local-option sales tax (TSPLOST) and state and federal funds from the Georgia Department of Transportation (GDOT) and ARC.

Dunwoody

The Dunwoody *Comprehensive Transportation Plan* (CTP), *Georgetown Master Plan*, and *Dunwoody Village Master Plan* have provided guidance for transportation investment in Dunwoody. The CTP provides a range of transportation improvements across the city, while the Dunwoody Village and Georgetown *Master Plans* focus on creating walkable and bikeable environments in the respective sub-areas. A number of these projects have already been implemented, and others have been assigned funding and are actively moving forward as programmed projects. Within the study area, Dunwoody's

planned and programmed projects focus on improving the Chamblee Dunwoody Rd corridor as well as corridors that connect to the Perimeter area, including Mt. Vernon Hwy, Ashford Center Pkwy, and Valley View Rd. Dunwoody is also interested in examining better connectivity to the Perimeter area in the vicinity of Georgetown.

Brookhaven

The *Brookhaven Bicycle, Pedestrian, and Trail Plan* (2016) is the city's primary guidance for investment in bicycle and pedestrian facilities. The plan establishes several short-term, mid-term, and long-term recommendations for walking and biking arterials, collector roads, and local streets as well as a long-term vision for a trail system. The city has also undertaken studies for specific corridors and sub-areas. The *Ashford Dunwoody Corridor Study* identifies multimodal improvements for the extent of the road between Peachtree Road and the northern city limit near I-285. There are also active planning efforts surrounding the Brookhaven/Oglethorpe MARTA Station, where an LCI Study is recommending a number of multimodal improvements to Peachtree Rd, Dresden Dr, and N. Druid Hills Rd. The refined recommendations from these studies are included in the consolidated project list. The programmed, or currently funded, bicycle and pedestrian improvements in Brookhaven are on the Peachtree Rd corridor.

Perimeter Community Improvement Districts (PCIDs)

The *Commuter Trails Master Plan* has identified multimodal improvements for the Perimeter area. The plan includes 15 miles of potential commuter pathways, which include a combination of sidepaths and bicycle lanes along arterials and collector roads, and off-road connections between major destinations such as office complexes and retail developments. Since the adoption of the plan, the PCIDs have considered adopting guidance from the National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide* (2014), which recommends providing separation for bicycle and pedestrian facilities, particularly in more urban contexts. For this reason, the consolidated project list includes the off-road commuter trails and an adapted version of the projects adjacent to roadways that reflects a more complete streets approach. Instead of sidepaths, the consolidated project list recommends separated bicycle and pedestrian facilities along with streetscape and lighting improvements.

These adaptions are already reflected in projects that are moving forward. There are two programmed projects on Ashford Dunwoody Rd and Peachtree Dunwoody Rd that will include cycle tracks and wide sidewalks. There is also a substantial bicycle and pedestrian project along the block formed by Peachtree Dunwoody Rd, Hammond Dr, Perimeter Center Pkwy, and Lake Hearn Dr that will include a combination of cycle tracks, wide sidewalks, and streetscape and lighting improvements.

II. Identification of Gaps and Inconsistencies

The next step in the refinement of the project list was to analyze each planned and programmed project in relation to other recommendations in the study area. Within the PCIDs area, there were some instances with multiple projects along the same corridor that did not complement each other due to disparities in facility type or termini. In addition, at municipal boundaries, there was often some disconnect between planned improvements among the cities. The consolidated project list reflects the refinements of the projects. The resulting set of planned and programmed bicycle and pedestrian projects are shown in Figure 23, Figure 24, and Figure 25. These are also included in the consolidated project list in Appendix A.

Upon an examination of all the projects in the study area, it was also determined that there were "gaps" in coverage, or places where facilities were lacking and there were no identified projects to address

connectivity needs. In these areas, recommendations were made to fill these gaps in order to provide consistent last mile connectivity across the study area. Gaps were identified on the following corridors:

- Abernathy Rd from GA 400 entrance ramp to Peachtree Dunwoody Road
- Glenridge Dr from I-285 ramp to Hammond Drive
- Peachtree Dunwoody Rd from Glenridge Connector to Atlanta city limits
- Concourse Pkwy (private road) from Peachtree Dunwoody Rd to the Concourse Athletic Club

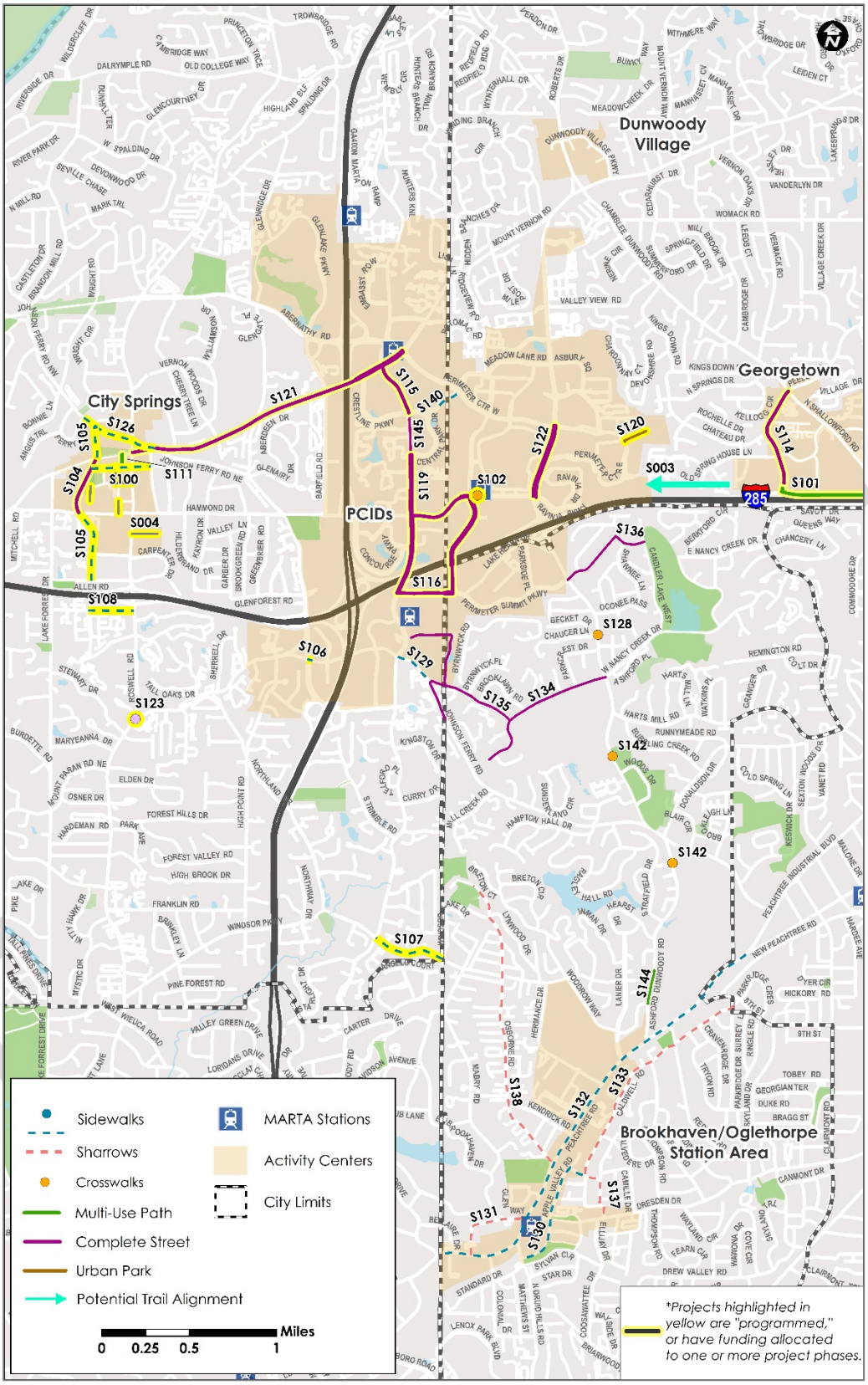


FIGURE 23. PLANNED AND PROGRAMMED BICYCLE AND PEDESTRIAN PROJECTS (SHORT-TERM)

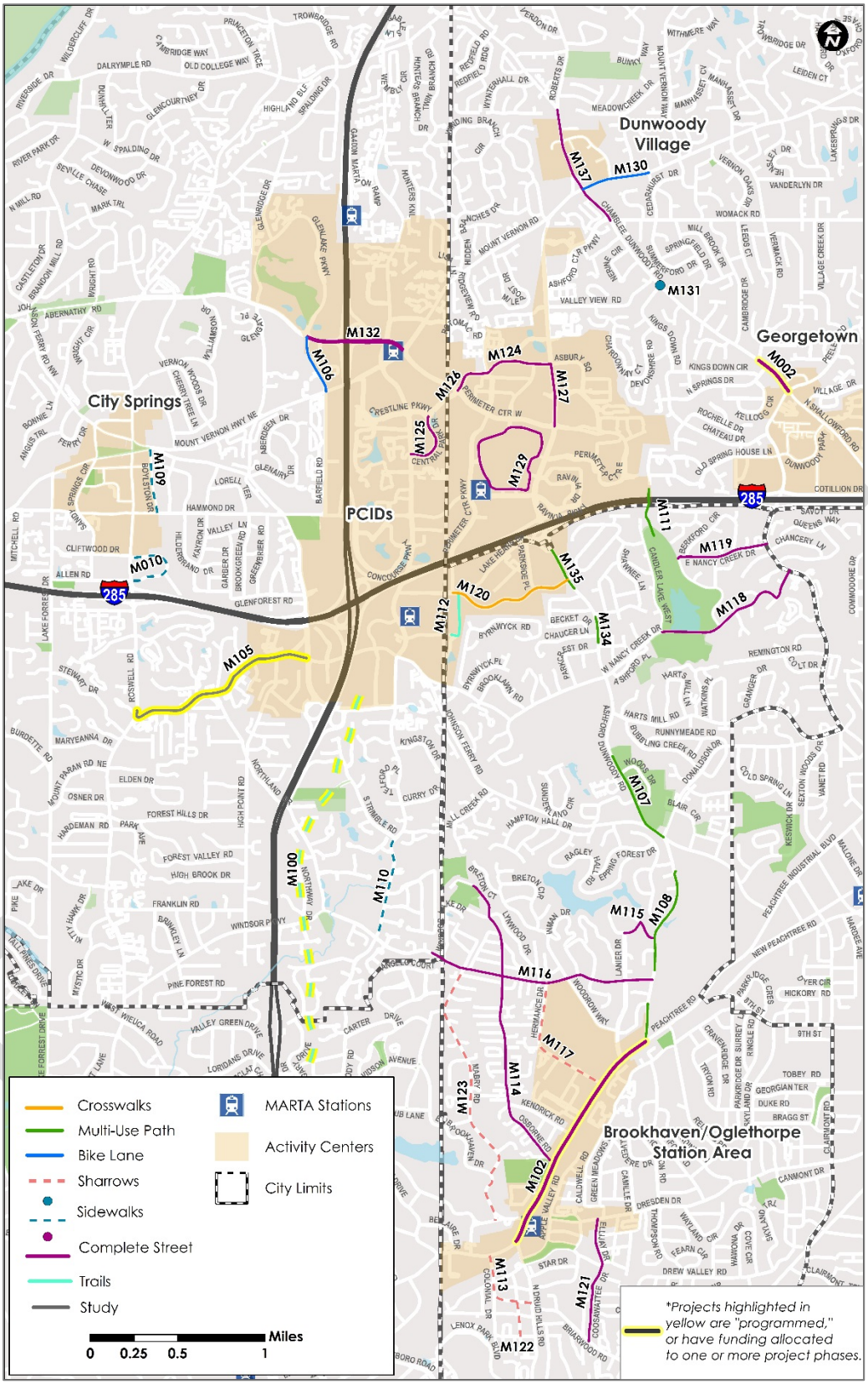


FIGURE 24. PLANNED AND PROGRAMMED BICYCLE AND PEDESTRIAN PROJECTS (MID-TERM)

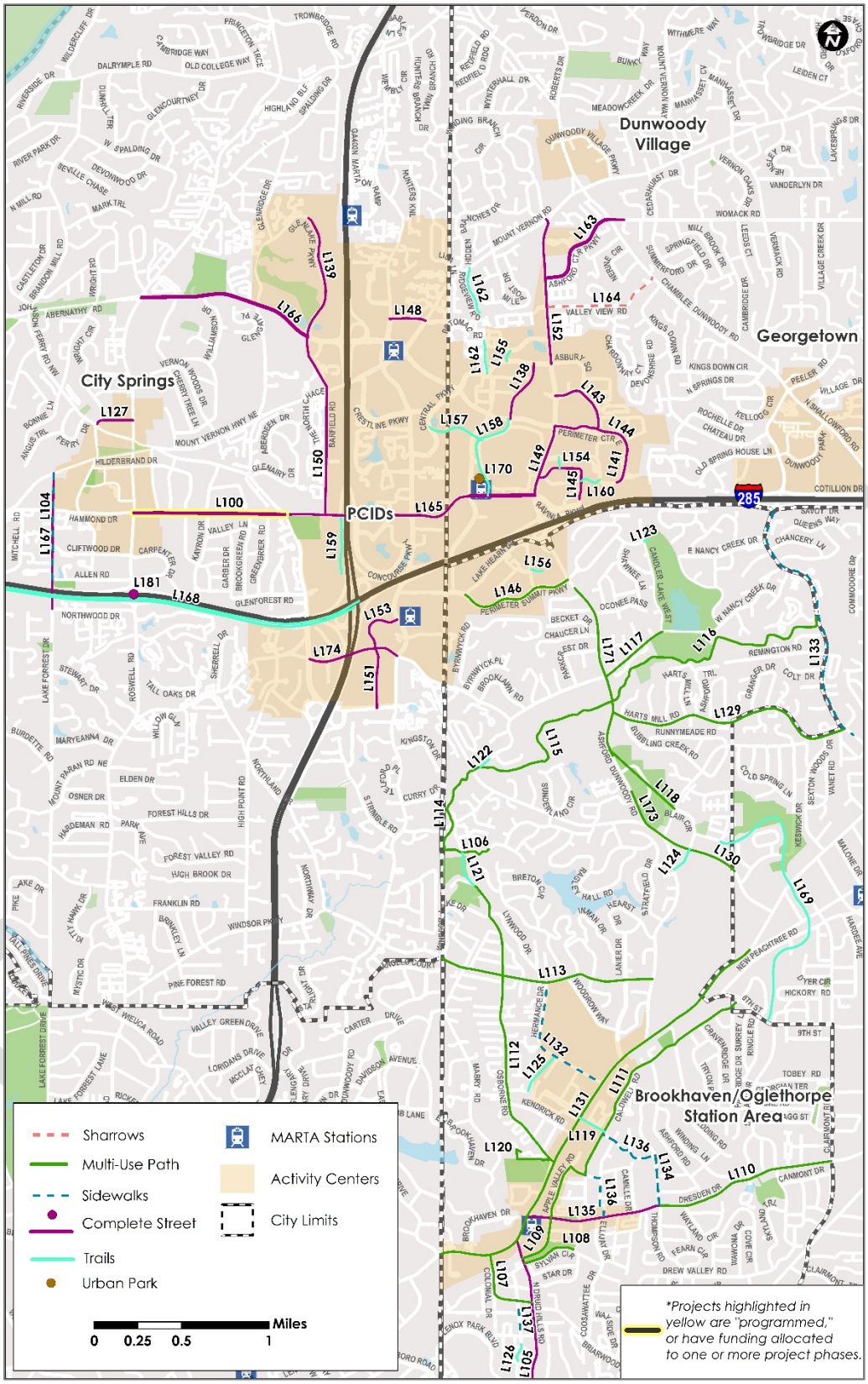


FIGURE 25. PLANNED AND PROGRAMMED BICYCLE AND PEDESTRIAN PROJECTS (LONG-TERM)

III. Recommendations to Fill Gaps and Complement Transit

In order to ensure seamless bicycle and pedestrian coverage in the study area, the project team has recommended the addition of the following projects to the consolidated project list. These projects address gaps in the bicycle and pedestrian network, where no facilities have been planned, as well as adaptations of existing projects to better facilitate last mile connectivity in the study area.

Recommended bicycle and pedestrian projects are shown in Figure 26 and Tables 6 through 8 grouped by priority tier. Several of the short-term projects have been designated as "quick wins" and represent projects that are relatively low-cost with high impact that can quickly improve last mile connectivity in the area. These projects are denoted by an asterisk (*).

Table 6. Short-term Recommended Bicycle and Pedestrian Projects to Fill Gaps

Project ID	Project Name	Description	Jurisdiction(s)	Limits	Timeframe
S166	Glenridge Drive/Glenlake Parkway sidewalks	Fill sidewalk gaps on both side of road on Glenridge Dr and Glenlake Pkwy	Sandy Springs	Abernathy Rd to entrance of 50 Glenlake office bldg.	Short*
S167	Abernathy Road sidewalks	Construct sidewalk on south side of Abernathy Rd	Sandy Springs	GA 400 entrance ramp to Peachtree Dunwoody Rd	Short*
S168	Concourse Parkway sidewalks	Concourse Pkwy is a private road. Coordinate with property owner to encourage filling sidewalk gaps on both sides of Concourse Pkwy between Peachtree Dunwoody Rd and Concourse Athletic Club	Sandy Springs (private road)	Peachtree Dunwoody Rd to Hammond Dr	Short*
S169	MARTA Station Enhancements	Initiate planning process, in collaboration with MARTA, to identify and design enhancements to rail stations to improve pedestrian accessibility, internal circulation, and connections to surrounding sites and facilities, as well as lighting, facades, and public art	Brookhaven, Dunwoody, Sandy Springs and PCIDs	MARTA rail stations with PCIDs: Dunwoody, Medical Center, and Sandy Springs	Short*
S170	Wayfinding Program	Develop and implement branded wayfinding guidelines and program for the Perimeter area at two scales: pedestrian-scale to guide people on foot and cyclists, and vehicular-scale to guide motorists on a broader scale throughout PCIDs	Dunwoody, Sandy Springs, PCIDs	PCIDs boundaries	Short*

SHORT-TERM RECOMMENDATIONS (CONTINUED)

Project ID	Project Name	Description	Jurisdiction(s)	Limits	Timeframe
S154	Abernathy Road Corridor Study	Corridor study for Abernathy Rd, from Roswell Rd to Mt. Vernon Rd, to determine future capacity and complete street needs. Will integrate with Abernathy Road DDI (in conjunction with GDOT I-285/GA 400 interchange project).	Sandy Springs	Corridor Study for Abernathy Rd from Roswell Rd to Mt. Vernon Rd	Short
S155	Glenridge Drive sidewalks	Fill sidewalk gaps on east side of the road	Sandy Springs	I-285 ramp to Hammond Drive	Short
S156	Glenridge Drive/Glenridge Connector Corridor Study	Corridor study to study complete street treatments on Glenridge Drive	Sandy Springs	Hammond Dr to Peachtree Dunwoody Rd	Short
S157	Complete Street on Johnson Ferry Road	Design and construct complete street treatments along Johnson Ferry Rd	Sandy Springs	Glenridge Conn to Brookhaven city limits	Short
S158	Peachtree Dunwoody Rd Bike/Ped Facilities	Design and construct complete street treatments along Peachtree Dunwoody Dr from Glenridge Conn to Lake Hearn Dr to tie into trail north of this area on Peachtree Dunwoody Rd	Sandy Springs	Glenridge Connector to Lake Hearn Dr	Short

TABLE 7. MID-TERM RECOMMENDED BICYCLE AND PEDESTRIAN PROJECTS TO FILL GAPS

Project ID	Project Name	Description	Jurisdiction(s)	Limits	Timeframe
M138	Complete Street on Johnson Ferry Road	Design and construct complete street treatments along Johnson Ferry Rd	Sandy Springs	Abernathy Rd to Hammond Dr	Mid
M139	Glenlake Parkway / Glenridge Drive Multi-Use Path	Design and construct a multi-use path	Sandy Springs	UPS to Abernathy Rd, via Glenlake Pkwy and Glenridge Pkwy	Mid
M140	Mount Vernon Highway Bike/Ped Facilities	Apply complete street treatments from Sandy Springs MARTA Station to Dunwoody city limits	Sandy Springs	Abernathy Rd to Dunwoody city limits	Mid

TABLE 8. LONG-TERM RECOMMENDED BICYCLE AND PEDESTRIAN PROJECTS TO FILL GAPS

Project ID	Project Name	Description	Jurisdiction(s)	Limits	Timeframe
L185	Complete Street on Glenridge Drive	Restriping and complete street on Glenridge Dr from Roswell Rd to Johnson Ferry Rd/Glenridge Connector	Sandy Springs	Roswell Rd to Johnson Ferry Rd/Glenridge Conn	Long
L186	Mount Vernon Highway Bike/Ped Facilities	Apply complete street treatments from Long Island Dr to Roswell Rd	Sandy Springs	Long Island Drive to Roswell Rd	Long
L187	Peachtree Dunwoody Rd Bike/Ped Facilities	Apply complete street treatments from Spalding Dr to Mt. Vernon Hwy	Sandy Springs	Spalding Dr to Mt. Vernon Hwy	Long
L189	Bicycle Lanes on Peachtree Dunwoody Rd	Bicycle lanes on Peachtree Dunwoody Rd from Glenridge Connector southward to city limits	Sandy Springs	Glenridge Connector to Atlanta city limits	Long
L190	Additional bike/ped facilities on local street connections	Identify opportunities for additional bike/ped facilities on local street connections	Brookhaven, Dunwoody, Sandy Springs	N/A	Long
L191	Pedestrian bridge between North Springs MARTA Station and Glenlake Parkway	Construct pedestrian bridge between North Springs MARTA Station and Glenlake Pkwy	Sandy Springs	North Springs MARTA Station to Glenlake Pkwy	Long

The consolidated project list includes numerous bicycle, pedestrian, and trail projects that contribute to a cohesive multimodal network that fosters last mile connectivity. These projects cover a wide range of treatments, from sidewalks to complete streets. See Appendix A for a full list of bicycle and pedestrian projects.

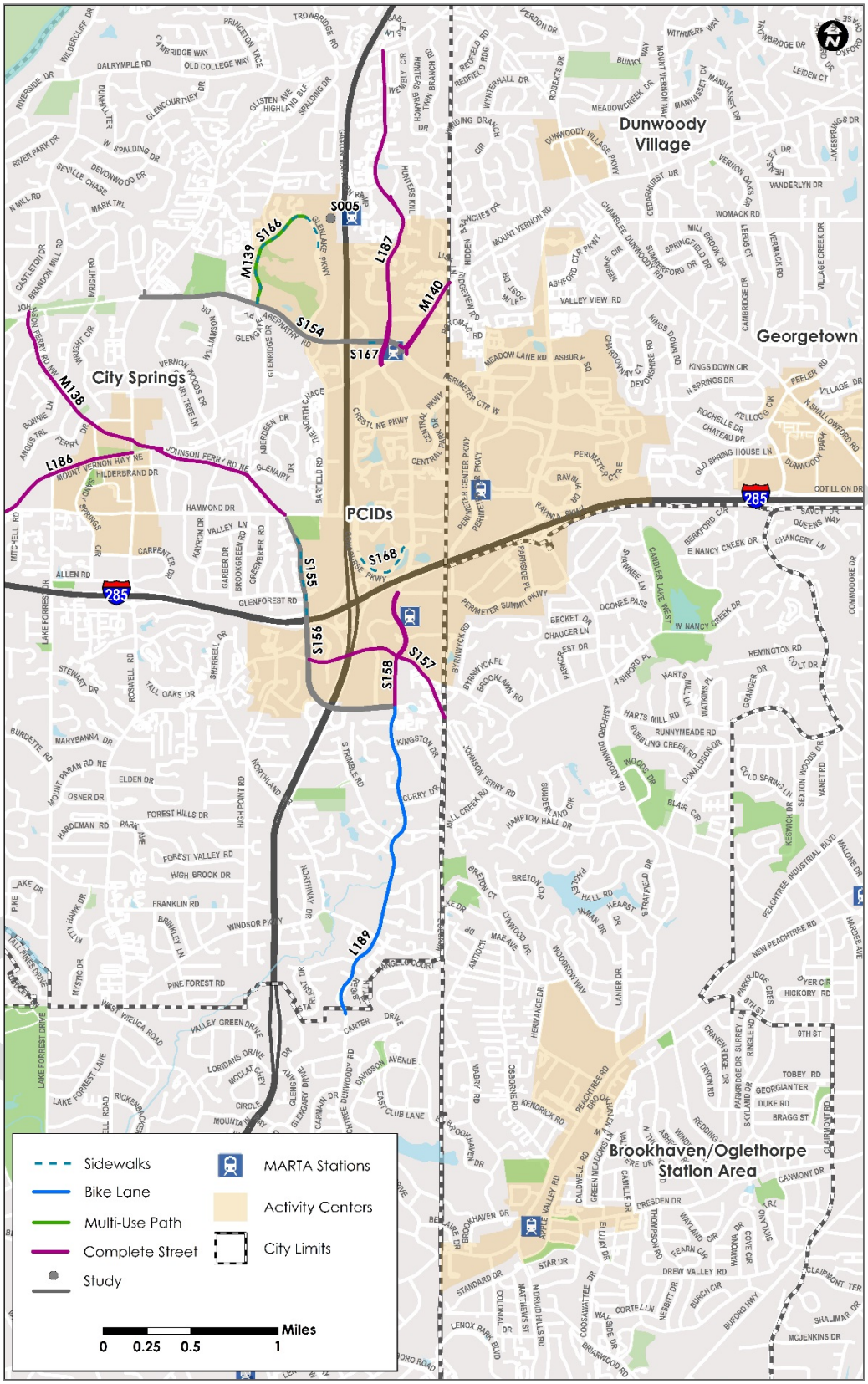


FIGURE 26. NEW BICYCLE AND PEDESTRIAN PROJECT RECOMMENDATIONS

IV. Bicycle and Pedestrian Network Strategies

In addition to the project recommendations, the Cities and PCIDs should implement the following strategies to foster last mile connectivity for the bicycle and pedestrian network.

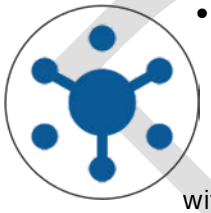
Enhance Pedestrian Facilities at Major Origins and Destinations

- Enhance pedestrian facilities and circulation at major origins and destinations, including transit stations, office complexes, hospitals, and large retail developments.
- Some of the MARTA Stations in the study area have confusing layouts and are not well-connected to the adjacent destinations and the existing bicycle and pedestrian network. The Cities and PCIDs should coordinate with MARTA to improve circulation in and around the MARTA Stations.
- One challenge in the study area is the prevalence of large office complexes, which typically feature large parking lots and lack of multimodal facilities on the property, and in some cases, are located on private roads. The Cities and PCIDs should coordinate with the property owners to provide walking and biking facilities on private roads and roads internal to the office complexes. The jurisdictions should also coordinate with property owners to create safe and convenient direct paths connecting roadways and building access points.

Implement Programs and facilities to Encourage Bicycle Usage in the Perimeter Area

- The PCIDs *Bicycle Implementation Strategy* outlines several strategies for encouraging bicycle usage. The cities should adopt these strategies within the PCIDs area and consider implementing similar programs and facilities in their activity centers.
- Provide supportive equipment and facilities such as bicycle racks and repair stands.
- Work with major employers to implement employer incentive programs to encourage cycling to work.
- Sponsor bicycle safety campaigns to teach cyclists and motorists how to safely interact on the roads.

Foster an Interconnected Network of Bicycle Routes



- In coordination with adjacent jurisdictions, examine the feasibility for a regional "greenbelt" of trails connecting Sandy Springs, Dunwoody, Brookhaven, Chamblee, and Roswell. A conceptual map of this strategy is shown in Figure 27.
- The Peachtree Gateway Partnership, formed in 2016, is a coalition of government and business leaders from Brookhaven, Chamblee, Doraville, and Dunwoody tasked with enhancing and promoting the area. One of the improvements the organization is considering is a multi-use trail network spanning the four cities. Sandy Springs and PCIDs should consider partnering with the organization, either formally or informally, to develop a framework for a multi-use trail network that connects the jurisdictions.

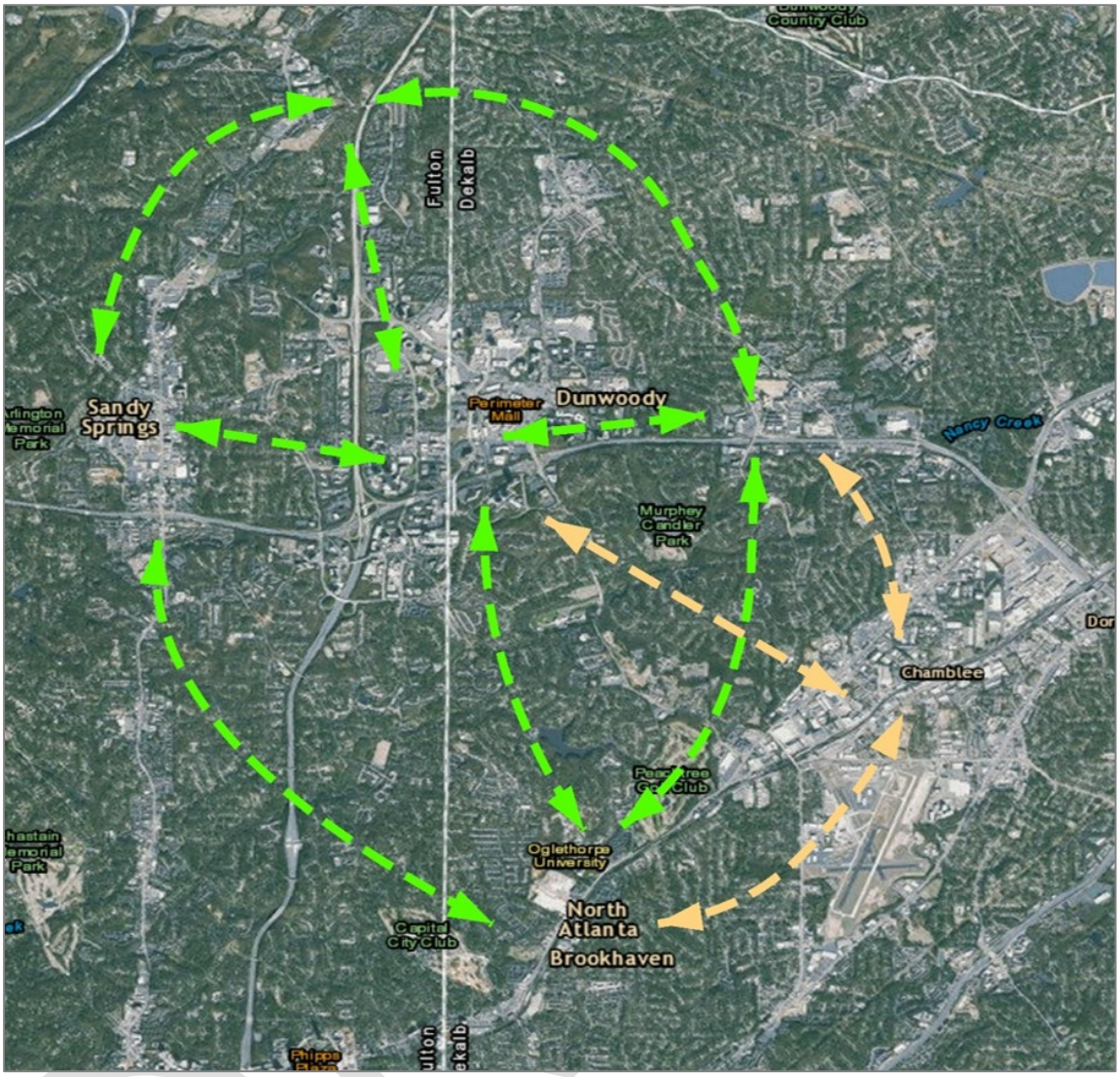


FIGURE 27. CONCEPTUAL DIAGRAM OF PERIMETER AREA GREENBELT (SOURCE: ESRI)

D. ROADWAY PLAN

While the aim of last mile connectivity is to connect people to transit hubs and major destinations by alternate modes of transportation, the roadway network plays a vital role. On a regional basis, there are numerous expressway and interchange improvements planned and underway that will help make the Perimeter area more accessible to the rest of the Atlanta region. In anticipation of new development in the Perimeter area, there are also new roadway alignments proposed that will allow for more direct connections for workplaces and other destinations. In addition, there are a number of intersection and operational improvements that aim to improve mobility without expanding capacity. It is vital to consider how all of these improvements will impact mobility in the study area and the opportunities that exist to provide safe, comfortable multimodal facilities and services in conjunction with the roadway improvements.

In the development of the consolidated project list, the project team undertook an analysis of the roadway network similar to that of the bicycle and pedestrian network. The primary difference in the two analyses was that several of the identified roadway projects are being planned and implemented by GDOT and fall out of the jurisdiction of the cities and PCIDs. While there were fewer projects to coordinate and analyze for gaps and inconsistencies, the scope and magnitude of some of the projects make it all the more critical for the cities and PCIDs to ensure last mile connectivity in the study area.

I. PLANNED AND PROGRAMMED PROJECTS

Regional

In 2006, GDOT and the Georgia Regional Transportation Authority launched the Revive285 Top End project to examine solutions to alleviate congestion on I-285 between I-75 in Cobb County and I-85 in DeKalb County. This multi-year study culminated in a number of projects, phased from short- to long-term, that have been adopted into GDOT's and ARC's Transportation Improvement Programs. These projects include interchange reconstructions, the addition of auxiliary lanes, and other operational improvements to the I-285 top end. In the study area, there is one programmed project from the Revive285 effort - the reconstruction of the interchange at GA 400 and I-285. The project, which will include new flyover ramps and collector-distributor lanes, will extend from west of Roswell Road to east of Ashford Dunwoody Road along I-285 and from the Glenridge Connector to Spalding Drive on GA 400. The project is currently underway; GDOT is currently performing pre-construction work, including lane closures on local roads, I-285, and GA 400.

In 2013, GDOT initiated the Managed Lane Implementation Plan (MLIP) to explore how demand management could improve mobility on interstates in the Atlanta region. The study considered a number of scenarios by which interstates could be dynamically priced, providing incentives for travelers to carpool or take express buses, particularly during the congested peak periods. Some recommendations from the MLIP, including managed lanes on I-85 through Gwinnett County and I-75 through Henry County, have already been implemented, with several additional projects identified for the Atlanta region. Within the study area, managed lanes are being advanced along both I-285 and GA 400.

Local

The combination of the mix of land uses and increased growth and development has made local mobility a major challenge in the area. Interstates and arterials are often congested during the peak period, and collector and local roads have had to bear the brunt of cut-through traffic, spillover congestion, and speeding vehicles. Because right-of-way is fairly constrained in the study area, the cities and PCIDs have placed increased focus on advanced traffic management systems (ATMS), which aim to improve mobility

through the use of coordinated traffic signals, traveler information systems, and other technological applications. The cities and PCIDs have also placed priority on operational improvements at intersections and corridors that bottleneck during peak periods. The cities and PCIDs have also proposed some new roadway alignments to improve east-west connectivity adjacent to I-285. While these new roadways are relatively small in scale, they have been strategically placed to serve new developments such as the State Farm headquarters and growing activity centers, including City Springs and Georgetown. By developing these as complete streets, these new roadways will help to build-out the multimodal network in the Perimeter area.

II. IDENTIFICATION OF GAPS AND INCONSISTENCIES

As shown in Figure 28, the roadway network is well built-out in the study area. As a result, the project team did not find any gaps in planned or programmed projects, nor did it identify any inconsistencies among planned projects. For example, in places where there may be opportunities for better connectivity among surface streets, project partners have already initiated projects to connect roads, as is the case with planned projects in City Springs and the East-West Connector and Westside Connector projects in Sandy Springs and Dunwoody. The project team did identify additional opportunities for operational improvements to enhance last mile connectivity. These are discussed in the following section.

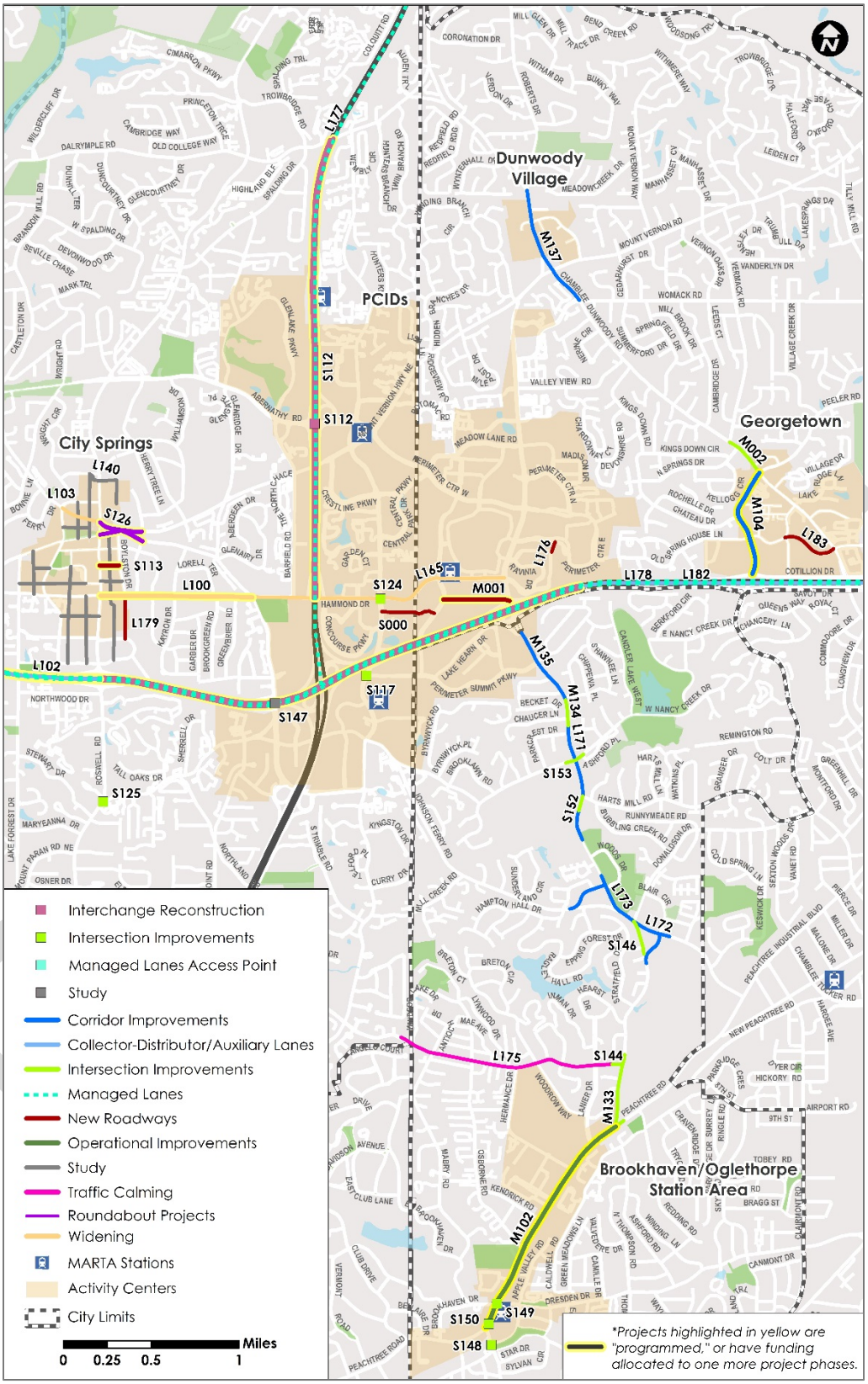


FIGURE 28. PLANNED AND PROGRAMMED ROADWAY PROJECTS

III. Recommendations to Fill Gaps and Complement Transit

In addition to previously planned and programmed projects, the following corridors have been recommended for operational improvements to enhance last mile connectivity. These are shown in Figure 29.

Table 9. Recommended Roadway Projects to Fill Gaps

Project Name	Description	Jurisdiction(s)	Limits	Timeframe
Johnson Ferry Road Operational Improvements	Design and construct operational improvements on Johnson Ferry Rd	Brookhaven	Ashford Dunwoody Rd to the Sandy Springs/Brookhaven city limits	Mid
Windsor Parkway Corridor Improvements	Context-sensitive roadway improvements on Windsor Pkwy	Sandy Springs	Peachtree Dunwoody Rd to Sandy Springs/Brookhaven city limits	Long

The consolidated project list includes these recommended gap-filling projects along with a mix of regional and local roadway projects that enhance connectivity, improve traffic operations, and implement demand management strategies in the study area. All roadway projects contribute to a cohesive multimodal network that fosters last mile connectivity. See the consolidated project list in Appendix A for a full list of roadway projects.

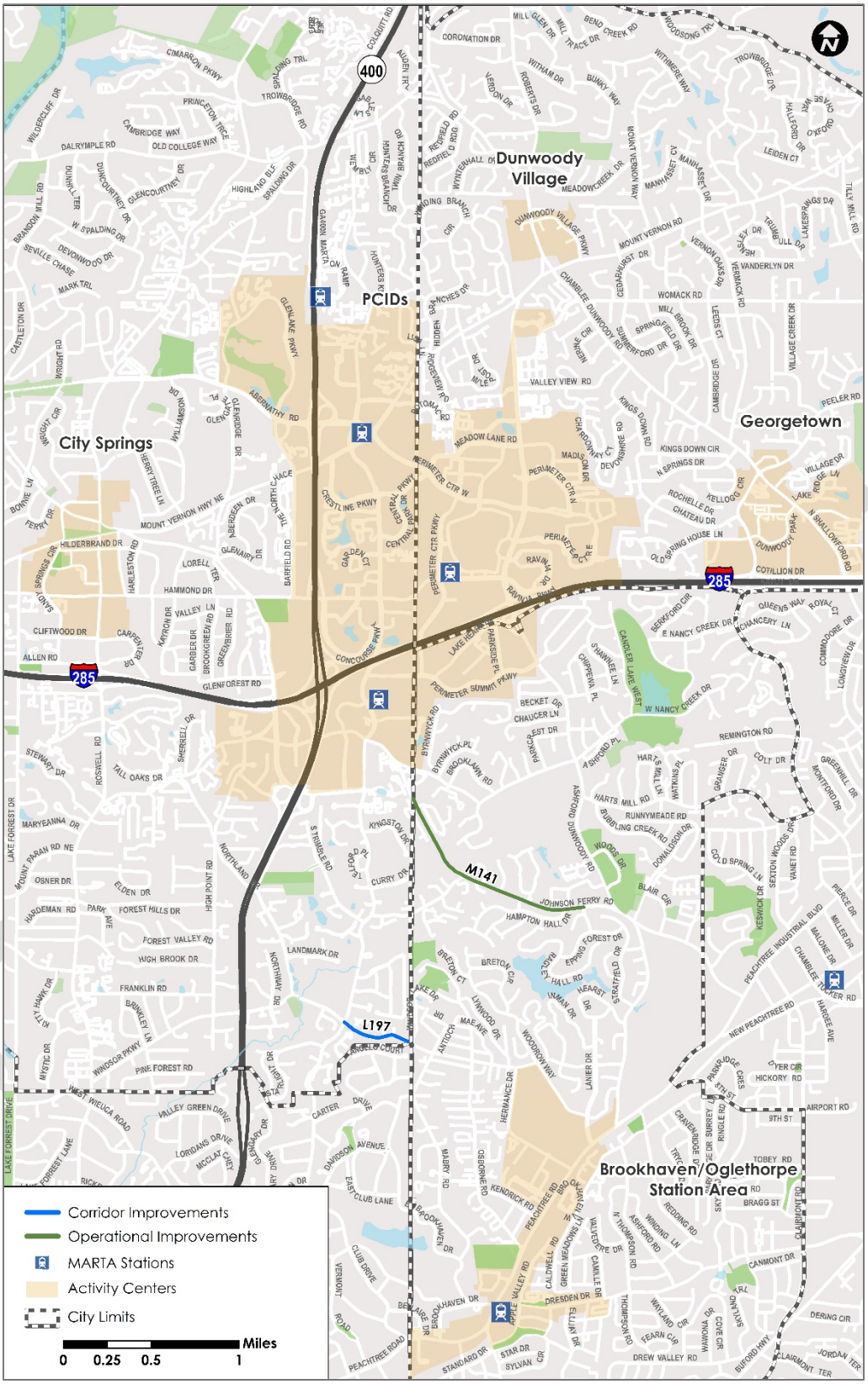


FIGURE 29. NEW ROADWAY PROJECT RECOMMENDATIONS

IV. ROADWAY NETWORK STRATEGIES

In addition to the project recommendations, the Cities and PCIDs should implement the following strategies to foster last mile connectivity for the roadway network.

Coordinate Roadway Improvements with Bicycle, Pedestrian, and Transit Projects

Design and implement roadway improvements in coordination with existing and planned bicycle, pedestrian, and transit projects. Dedicate sufficient right-of-way to accommodate multimodal improvements that may be implemented in the future, such as cycle tracks, multi-use paths, bus pull-outs, or transit-only lanes.

Standards Suitable to Transit Vehicles

Along key transit corridors and at accompanying intersections, adopt standards for lane widths and turning radii to ensure that transit vehicles can safely and efficiently travel through the area.

Encourage Carsharing

Coordinate with private carsharing services to place a dedicated number of vehicles at MARTA rail stations, employer campuses, large retail destinations, and other major destinations within the Perimeter area for easy access by customers.

Adhere to Established Standards

Within the boundaries of the PCIDs, ensure roadway facilities are constructed in conformance with the PCIDs' *Public Space Standards*, which provide specific design guidance for unique classifications of roadways in the Perimeter area. These standards are currently under development. Note: private streets for public use should be encouraged to follow the guidelines provided in the Public Space Standards to the extent possible.

Encourage Satellite Parking

During design for the managed lane system for GA 400 and I-285, examine potential locations for satellite parking lots near the managed lane exits. Coordinate with local and regional transit providers to provide shuttles between the satellite parking lots and the Perimeter area.

E. TRANSIT PLAN AND VISION

I. OVERVIEW OF PREVIOUSLY PLANNED TRANSIT PROJECTS AND SERVICE

Over the course of the past several years, a number of plans and studies have been undertaken to examine opportunities to expand existing or introduce new types of transit service into the Perimeter area. These include, but are not limited to, the Sandy Springs *City Center Master Plan* (2012), *The Next Ten* (2016), and the *Perimeter Circulator Implementation* report (2012). These studies identified key destinations to link together and took into consideration the relative success of privately operated shuttle services. At the outset of the *Last Mile Connectivity Study*, the project team identified several planned transit projects in these and other plans. In essence, they recommended a network of new circulator routes and/or identified corridors on which transit service should be implemented in the future, independently of services offered by MARTA or GRTA. Many of these planned projects were removed from the project list for this study based upon discussions with project partners, because they were determined to be no longer relevant, no longer feasible, or no longer a priority for the project partner(s) involved.

A handful of previously planned transit projects are included for additional consideration in the future, and this study also reflects the programmed projects that are already in various stages of implementation. These include the two new GRTA routes into Perimeter from Cobb and Gwinnett Counties and the arterial rapid transit (ART) that MARTA will begin offering along Hammond Dr. It is anticipated that GRTA will roll out the new routes sometime in 2017. In addition, there have been several studies that recommended some type of transit service between City Springs and the Sandy Springs MARTA station. While a precise service recommendation has not been advanced, it is included in the *Last Mile Connectivity Study* as a project that should be examined more closely in the form of a feasibility study. Figure 30 shows previously planned and programmed services considered.

In addition, there are longer-term plans for potential changes transit service in the Perimeter area, as recommended in MARTA's COA. These proposed changes include adjustments to route 150, including combining it with portions of other routes and providing service to Georgia Perimeter College, Chamblee Dunwoody/Shallowford area, and to the Dunwoody and Chamblee MARTA Stations. The recommendations propose an increase in service from every 30 to 45 minutes to every 30 minutes. The COA also proposes a new community circulator route (Route 350) that would provide locally focused service in Dunwoody every 15 minutes. A specific alignment has not yet been determined. Both of the proposed service changes were envisioned for implementation in a mid-term timeframe (phase two in the COA) and will require additional planning and coordination. MARTA and the local jurisdictions should continue to communicate and coordinate as these and other proposed services move forward.

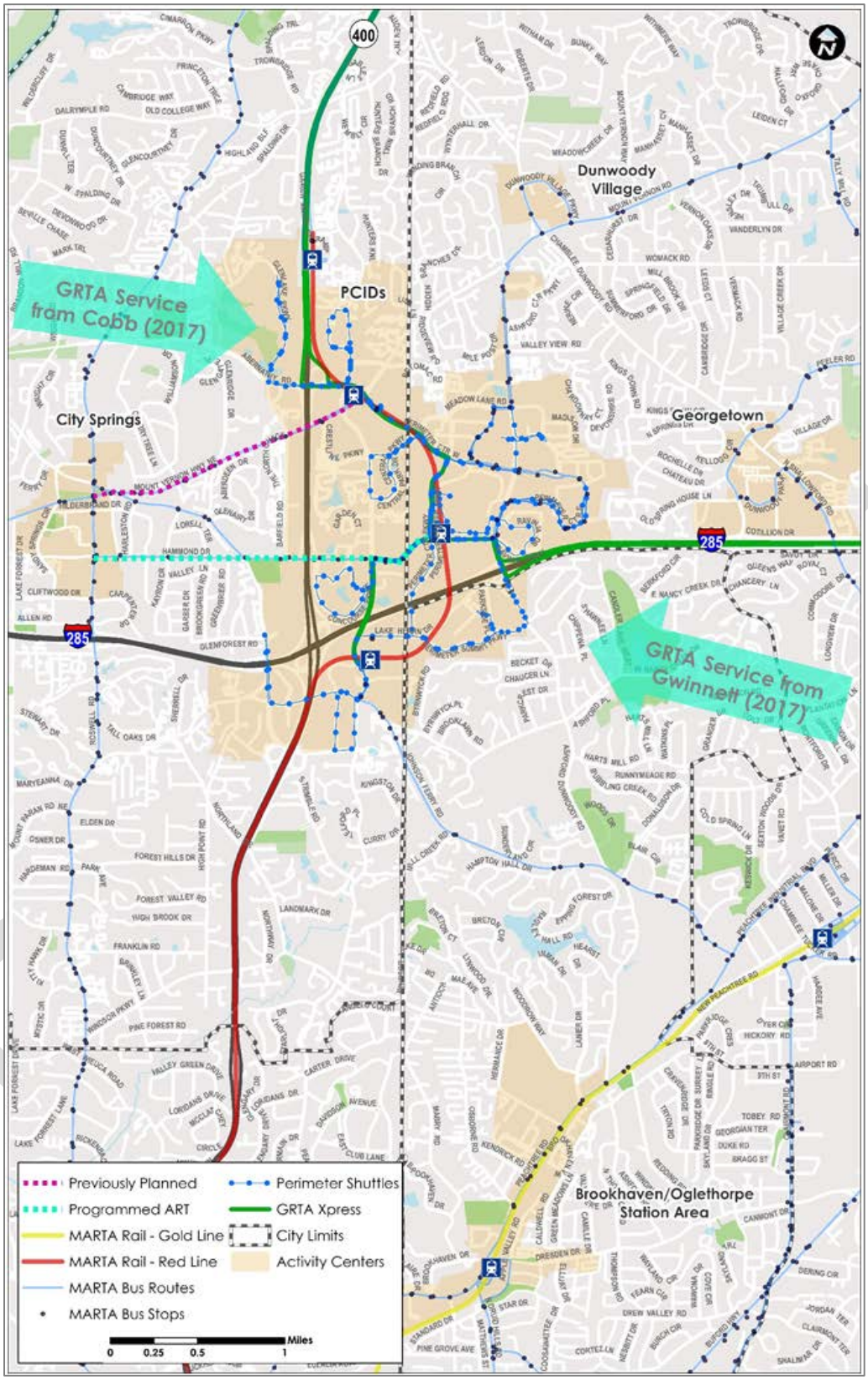


FIGURE 30. PREVIOUSLY PLANNED AND PROGRAMMED TRANSIT SERVICE
(SOURCE: ARC, BROOKHAVEN, DUNWOODY, GRTA, MARTA, PCIDS, SANDY SPRINGS)

II. TRANSIT GAPS AND NEEDS ASSESSMENT

Based on the existing conditions assessment provided, this section identifies transit connectivity gaps and service needs. As discussed earlier in the report, there are two primary types of connectivity – node connectivity (activity center to activity center) and last mile (getting people between origins/destinations and transit or activity centers). Working within this framework, the study identified two types of transit gaps within the study area: gaps in last mile connections to transit and gaps connecting the activity centers of each City and the PCIDs.

Activity Center Connectivity Gaps and Needs

In addition to the assessment of the existing demographics and land uses, the trips currently made between the three cities of Sandy Springs, Dunwoody, and Brookhaven were examined. The team analyzed trip information taken from the 2013 PCIDs survey. This data includes all trips recorded by survey participants with a terminus falling within one of the three cities. Key takeaways include:

- Overall, the vast majority of trips between these three connecting cities is driving, with few recorded survey participants making trips by walking, biking, or taking transit.
- While there are a number of trips between Brookhaven and Perimeter, many of these trips are from further south than the Brookhaven MARTA Station and may not have easy access to it.
- There was only one trip from Dunwoody Village, but a larger number of trips from the Georgetown neighborhood and parts of Dunwoody directly east of Perimeter.
- There were only two trips made between City Springs and Perimeter. However, it is anticipated that this number will grow with the planned development and new apartments within the designated City Springs area.

A high level analysis of weekday MARTA bus boarding and alighting data from August 2016 to December 2016[4] within the Perimeter area illustrates general ridership patterns along Perimeter area bus routes. The highest concentrations of people alighting buses during a typical weekday are at North Springs MARTA Station, followed by Dunwoody MARTA Station. The data also points to ridership in clusters along Roswell Road around intersections with concentrations of retail, City services, and the North Springs High School. The two intersections with the highest number of bus ridership outside of MARTA stations are the intersections of Johnson Ferry Rd, Roswell Rd. and Mt. Vernon Hwy., Hammond Dr and Roswell Rd., and Roswell Rd just south of I-285 near the Prado Shopping Center and the two apartment complexes across the street from the shopping center. The data also show small numbers of riders alighting along Hammond Dr, mainly east of GA 400 and near Peachtree Dunwoody Rd. Route 148 has low ridership west of City Springs and there are few alightings on Route 150 where it circulates through Perimeter.

While the data point to riders boarding and alighting at City Springs locations, they do not provide an indication of the origins or destinations of these trips, so it is difficult to decipher whether people are using bus service to connect City Springs to retail, services, and jobs in Perimeter, access the rail system, or another connection. It is also important to note that City Springs is the transfer location for any riders wishing to travel from a portion of Roswell Road south of Hammond Drive to somewhere along the corridor north of Mount Vernon Highway and vice versa. Without origin-destination data, this may be another contributing factor to the boarding and alighting numbers in City Springs.

There is a general need for alternative transportation modes to connect the activity centers within these three cities to Perimeter, particularly as they diversify in use and add residential density. From Brookhaven,

[4] Data compiled by City of Sandy Springs

the only direct bus service accesses Medical Center, which is south of I-285 and difficult to connect to the rest of Perimeter via walking or biking. There were no train trips between Brookhaven and Perimeter. In conversations with MARTA, it was noted that it is quicker to take the MARTA rail service from Brookhaven south to Lindbergh and transfer north to Dunwoody Station than to provide this connection directly via a local bus because of congestion. If potential riders are unaware of the time savings or unsure of how to transfer, there may be a need for education about the opportunity to make this connection via MARTA rail.

Between Dunwoody and the Perimeter area, there is local bus service to Dunwoody Village, but no direct transit service east into Georgetown and surrounding neighborhoods. One of the issues is that there is no direct roadway connection, aside from I-285. The neighborhood streets that connect to Chamblee Dunwoody Rd do not connect with the roads from the Perimeter campuses off of Ashford Dunwoody Rd. This limits potential transit access as well as access for pedestrians and bicyclists.

The small number of trips between City Springs in Sandy Springs and Perimeter counted in the survey data is potentially due to the small number of residential units within the City Springs area at the time the survey was conducted. Sandy Springs is planning a multi-family housing development in the area, which may increase the need for that trip. It is also important to note that neither of the trips between City Springs and Perimeter utilized transit, despite the existence of two local MARTA bus routes that provide this connection with an overall average one bus every 20 to 30 minutes between them. It is also important to consider the range of multi-family housing and retail/services along Roswell Rd as ridership generators for Routes 5 and 87. As shown in the high-level boarding and alighting data, bus stops close to residential uses as well as commercial uses tend to have more people getting on and off of buses but do not indicate origins and destinations. Future development in the City Springs area may increase the need for the direct connection between City Springs and Perimeter. However, a more detailed assessment of the travel needs of this local connection between City Springs and PCIDs is needed to determine whether the need is for access to jobs, retail, and services in Perimeter, access to the rail system, or a mix of both.

Overall, the major needs to connect activity centers within the study area to the Perimeter area include both direct physical or service connections as well as supportive policies and information that can affect mode choice for people making trips that are between two and four miles.

Last Mile Connectivity Gaps and Needs

Critical to the success of a well-functioning transit system is the provision of “last mile” connections, or the transportation connections between public transit stations and final user destinations. As shown in Figure 17, there are a number of existing services that provide these critical connections within the study area. Among these are 13 employer-sponsored shuttles, each serving in the range of 150 to 1,000 riders per week, and MARTA Route 150, which circulates throughout Perimeter.

However, as evident in a recent survey of MARTA users in the study area, a number of gaps in last-mile connectivity still remain. The results of the survey show that more than half of users surveyed at MARTA stations deemed their trip to/from the station “difficult” or “very difficult” despite existing sidewalks and/or shuttles. Results of the survey are illustrated in Figure 32.

Upon examination of the data, a few issues have been noted. First, the lack of pedestrian and bicycle connectivity is a major impediment to last-mile connectivity for transit users. Although there are sidewalks along many major roadways in the PCIDs area, the large size of the blocks and limited entrances to major campuses increase trip times for pedestrians and bicyclists. Increasing direct pedestrian connectivity through major campuses and blocks may reduce difficulty for individuals completing the last mile of their

trip by reducing the distance, and amount of time, one has to walk or bike to reach their destination. Examples of the large block patterns within PCIDs is show in Figure 31.

FIGURE 31. EXAMPLES OF LARGE-BLOCK AND CAMPUS-STYLE DEVELOPMENT PATTERNS

Access from the MARTA Stations and GRTA *Xpress* route stops to the final destination is critical for travelers to choose transit as their transportation mode. While MARTA and GRTA may be able to get people into Perimeter, if they cannot make that last connection, it could affect their mode choice. Therefore, it is important to improve access from the rail stations and GRTA *Xpress* stops to the office campuses and retail destinations throughout Perimeter.

While the Sandy Springs and Dunwoody MARTA rail stations have pedestrian access to Perimeter in all directions, North Springs MARTA rail station is cut off by GA 400. The highway limits access to the employment and residential areas west of GA 400 despite their proximity to the rail station. In Medical Center there is pedestrian access to the hospitals in the area, but reaching other destinations along Perimeter Summit Pkwy is more difficult and not direct.

One of the major issues described by all transit providers is congestion. Along with personal vehicles, transit buses also get caught in the morning and evening peak periods in Perimeter. This increases travel time and reduces reliability of scheduling, thus making transit less appealing to choice riders and lengthening trip times for captive riders. There is a need to improve transit circulation within Perimeter to increase reliability, reduce travel time for transit, and improve overall circulation, particularly during peak periods. This would enhance transit access within Perimeter for those arriving via alternative modes. Improving the last mile connection between stations and stops and the retail and office destinations also makes transit a potential choice for more of those commuting to and visiting Perimeter.

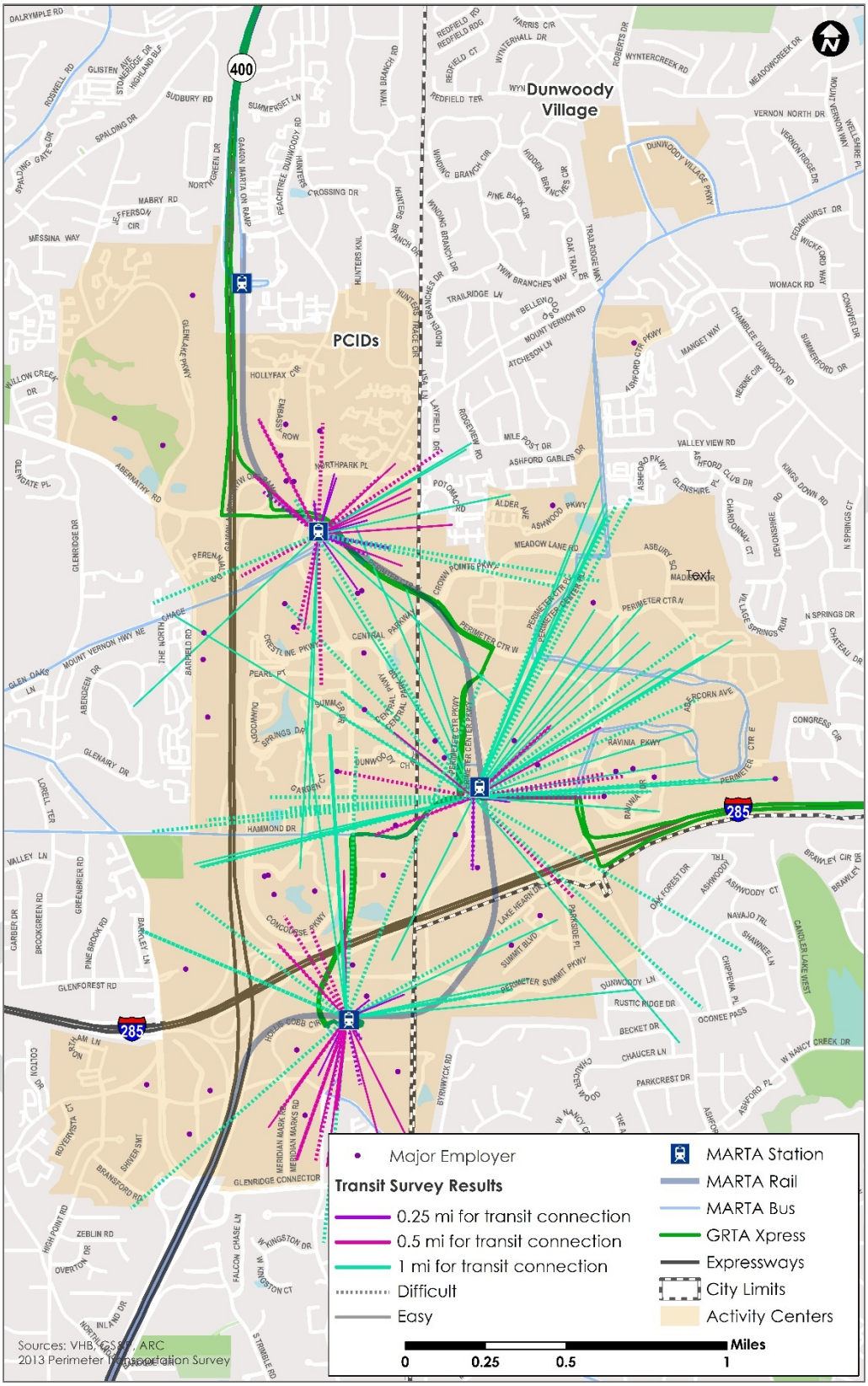


FIGURE 32. LAST MILE CONNECTIVITY GAPS AND CONNECTIONS (SOURCE: ARC, 2013 PERIMETER TRANSPORTATION SURVEY)

III. FUTURE INTER-PERIMETER TRANSIT VISION

This transit vision provides recommendations to make two separate types of transit connections: those that connect activity centers within the study area, and those that improve circulation and mobility within the Perimeter area.

Node Transit Connectivity

Considerations

To address the major connectivity needs connecting the nodes of City Springs, Brookhaven/Oglethorpe MARTA Station area, the Dunwoody Georgetown neighborhood to Perimeter, various roadways and potential transit alignments were discussed.

City Springs: Both Hammond Dr and Mt Vernon Rd were considered. Transit connecting City Springs to the Sandy Springs MARTA station via Mt Vernon Rd has been discussed in multiple forms in previous studies, including as part of a circulator or as rapid transit. While there are mixed uses at both ends, the corridor has low density residential along it between nodes. Hammond Dr provides a similar direct connection to the Dunwoody MARTA rail station. Currently, there are two fixed MARTA bus routes providing this connection. One benefit of connecting to the Dunwoody Station is that the majority of rail riders coming from Sandy Springs will head south. The current *Hammond Drive Corridor Study* and plans for widening make this a viable option for a faster connection between City Springs and MARTA rail.

Brookhaven/Oglethorpe Station Area: Peachtree Dunwoody Rd and Ashford Dunwoody Rd both make this connection. Peachtree Dunwoody Rd from Peachtree Rd north is largely single family residential with no nodes or activity centers of mixed uses until reaching the MARTA Medical Center rail station. This corridor is also outside of the Brookhaven city limits. Ashford Dunwoody Rd provides a direct connection between the Brookhaven/Oglethorpe Station Area and Perimeter within city limits. It also provides access to the activity node at the intersection with Johnson Ferry Rd where there is slightly more residential density and retail as well as proximity to senior living residences. Ashford Dunwoody Rd is also the site of several multi-family residential developments, Blackburn Park, the Ashford/Cowart Family YMCA, Marist School, Montgomery Elementary School, and provides access to the Nancy Creek Trail.

Dunwoody Georgetown Neighborhood: Currently, to get from Chamblee Dunwoody Rd in Georgetown to Perimeter, the only existing direct connections are via I-285 and heading north to Dunwoody Village to turn south on Mt. Vernon Rd. The local streets in Georgetown do not connect to the local campus streets of offices that back up to the neighborhood. Neither of these are preferable for transit because of the lack of directness and congestion. In the long-term, the City may want to explore possible alternative mode connections between Georgetown and Perimeter.

Recommendations

There are two major barriers facing transit along these corridors: congestion and low residential density. Assessment of these alternatives was done through a workshop with representatives from Sandy Springs, Dunwoody, Brookhaven and PCIDs. This workshop was supplemented by individual conversations to ensure that the recommendations were consistent with and supportive of local plans and priorities. Based on this collaboration with project partners, the following projects are recommended. (Note: these projects are also included in the project list contained in Appendix A).

TABLE 10. NODE CONNECTION PROJECTS

Project ID	Project Name	Description	Jurisdiction(s)	Limits	Timeframe
S165	Hammond Drive Transit-Supportive Infrastructure	Install Transit Signal Priority on signals along Hammond Dr that are compatible with MARTA technology	Sandy Springs, Dunwoody, PCIDs	Hammond Dr from Roswell Rd to Peachtree Dunwoody Rd	Short
M144	Hammond Drive Queue Jumper Intersection	Explore opportunities at major intersections along Hammond Dr to install queue jumpers for any transit along the corridor to make use of	Sandy Springs	Hammond Dr from Roswell Rd to city limit	Mid
M143	Brookhaven to PCIDs Transit Connection	Bus connection between Brookhaven MARTA rail station to Perimeter mall and surrounding employment	Brookhaven, Dunwoody, PCIDs	Peachtree Rd from North Druid Hills to Ashford Dunwoody Rd. Ashford Dunwoody Rd from Peachtree Rd to Perimeter Center	Mid
L184	East-West Transit Connection between City Springs and Perimeter	Transit connection and supporting infrastructure between Sandy Springs MARTA Station and City Springs	Sandy Springs, PCIDs	Feasibility study required to determine alignment	Long

The highest priority is transit supportive infrastructure along Hammond Dr. It is anticipated that MARTA will roll out its new arterial rapid transit service along Hammond Dr within the next two years. Transit signal priority and modifications to the roadway configuration, such as queue jumper lanes, require close coordination with Sandy Springs to see the improvements in travel time and schedule reliability that will benefit Sandy Springs residents, employees, and visitors. General design guidance from the National Association of City Transportation Officials (NACTO) is provided below for reference.

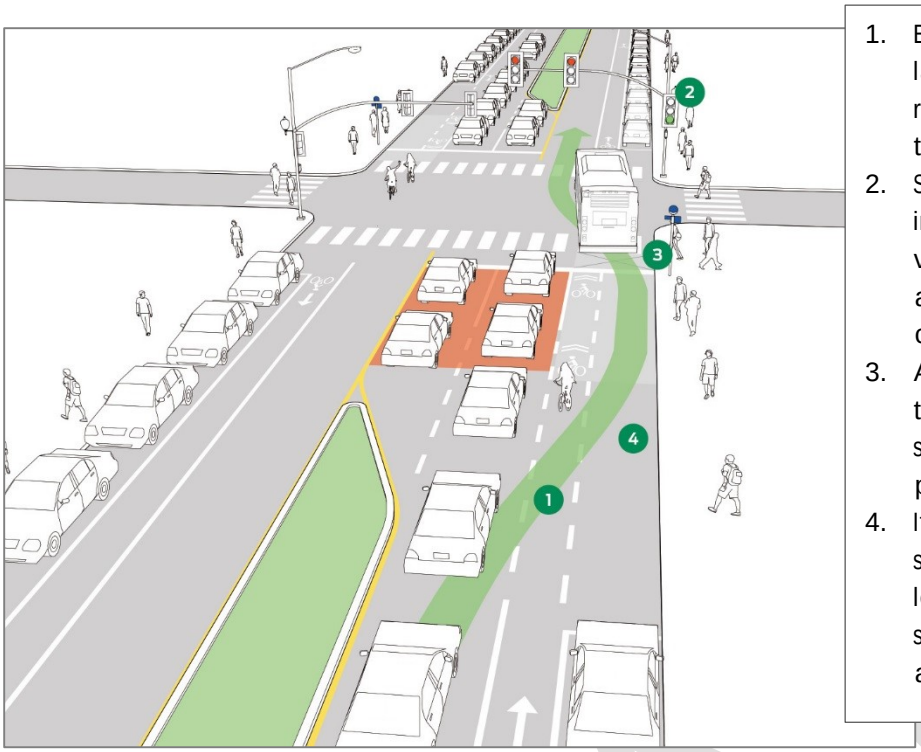


FIGURE 33. ILLUSTRATION OF NACTO QUEUE JUMPER DESIGN GUIDANCE (SOURCE: NACTO TRANSIT STREET DESIGN GUIDE)

The direct connection between Brookhaven and PCIDs is slated for a medium term priority for two main reasons. The first is that a train trip from Brookhaven/Oglethorpe Station to Dunwoody Station is faster than riding a local, fixed route bus along Ashford Dunwoody Rd. The second is that the current Route 25 structure provides a direct connection between senior housing and the hospitals south of I-285. As the need grows for this movement and the opportunity to upgrade signals to include transit signal priority becomes available, transit along this corridor becomes more viable with travel time savings technology. Until then, education about the travel time via MARTA rail between Brookhaven and Dunwoody Stations for those that live, work, and shop within the vicinity of the Brookhaven MARTA rail station is recommended.

Currently, there is no direct, physical connection between the Dunwoody Georgetown neighborhood and Perimeter. Vehicles must drive north to come back south along Mt. Vernon Rd or use I-285. This physical gap also exists for pedestrians and bicyclists. In the future, an alternatives analysis study that takes all three of these modes into account is recommended to identify the best connection for the existing neighborhoods and bordering office campuses.

Transit along Mt. Vernon Rd has been a project identified in previous studies as a circulator, local bus, and bus rapid transit with dedicated bus lanes. Based on the preliminary screening of trips from the City Springs area to the Sandy Springs MARTA rail station and surrounding area, the land uses along Mt. Vernon Rd, and the commitment MARTA has made to Hammond Dr, it is recommended that some form of transit along Mt. Vernon be explored as a long term improvement. This study would include which transit mode(s) are appropriate. As density and development increases and there is more of a demand to reach destinations along that corridor, an additional study to more specifically quantify transit demand is recommended. The benefit of coordinating with MARTA on Hammond Dr is that Sandy Springs does not have to be concerned with implementing new services, but can implement technology and intersection

projects that will support improved travel times for MARTA buses and any other future transit along the corridor to provide a direct connection from developing City Springs to a MARTA rail station.

Last Mile Transit Connectivity

Considerations

To address the needs identified for improved circulation and last mile connectivity in Perimeter, multiple transportation modes, technologies, and alignments were considered. During a workshop with representatives from Sandy Springs, Brookhaven, Dunwoody, and PCIDs, the following ideas and potential alternatives were discussed and vetted:

- Elevated transit connecting MARTA rail stations directly into major office buildings, hospitals, and Perimeter Mall;
- A consolidated shuttle to circulate during peak hours and lunch between major office locations, Perimeter Mall, and retail/restaurants within Perimeter;
- Dedicated bus lanes along major roadway segments in Perimeter to allow existing transit to circulate with faster and more reliable travel times;
- Transit signal priority at major bottleneck signals for transit in the area;
- Managed arterial lanes along major arterials in Perimeter where use would be restricted to high occupancy vehicles, transit vehicles, and/or private rideshare or carsharing services;
- Implementing connected vehicle technology, such as cameras and sensors to act as an area where connected vehicles would be encouraged and have use of restricted arterial lanes; and
- Partnerships with private rideshare or ride-hailing companies for last mile connections from MARTA rail stations.

Based on input from the workshop, coordination, and meetings with staff and officials from each City and PCIDs, the focus for circulation and last mile connectivity was rapid transit. To provide this service, three modes were considered:

- Automated Guideway Transit (AGT): operates on elevated rails with large vehicles in a fixed route
- Personal Rapid Transit (PRT): operates on a grade separated roadway with small autonomous pods to provide direct connections between all stations instead of traveling in a fixed route[5]
- Bus Rapid Transit (BRT): buses that operate in designated, separate lanes.

The additional cost for elevated infrastructure required for the AGT and PRT transit modes is significant. Costs for operating also must be considered. Given that there is not currently a provider in Perimeter who would be operating these modes, it would be up to Perimeter and municipalities to manage operation and maintenance. Dedicated bus lanes for BRT could be done in coordination with existing transit services. By contributing to the capital costs, local municipalities in Perimeter would improve mobility, but not be responsible for operating the services. Existing, planned, and future routes for MARTA, GRTA, and private shuttles would have access to the lanes and be responsible for the services and daily operations as well as vehicle maintenance.

[5] Currently, there are no revenue operating examples of PRT in the United States. London Heathrow Airport has begun exploring this mode using small pods to connect two nodes. In Morgantown, WV, the personal rapid transit/people mover system uses small pod vehicles and has the ability to stop only when requested. However, during peak hours, this operates as a fixed route people mover.

FIGURE 34. RAPID TRANSIT MODES CONSIDERED

The right-of-way (ROW) requirements are similar for the PRT and AGT in that piers are required throughout Perimeter to support the elevate guideway. This would require working with parcel owners to identify areas where piers would be needed and how they could fit in with existing developments. This would also require close coordination with the business community about the potential of bringing elevated transit directly into buildings. However, with BRT, fitting the improvements within the existing ROW could be achieved by widening the roadway or, in some areas, reallocating medians, turning lanes, and/or bicycle lanes towards the dedicated bus lanes. The maintenance of these roadways would be comparable to existing roadway maintenance once installed.

Recommendations

Considering the existing and planned transit available within Perimeter as well as capital and operating costs, **the recommendation for improving circulation within Perimeter is dedicated bus lanes on key corridor segments within Perimeter, at least during peak morning and afternoon hours.** Through further study, these lanes could be warranted all day Monday through Friday, or throughout the entire week. After analyzing the potential alternatives and transit modes, it was determined that implementation of dedicated bus lanes and transit signal priority will result in benefits of both alternatives. Transit will be able to operate separately from general traffic, technology in signals will be utilized to maximize existing infrastructure, and Sandy Springs, Dunwoody, Brookhaven, and PCIDs will not be responsible for operating any new transit. These lanes will improve existing transit and support future service as well.

All transit will have access to these lanes, including MARTA buses, GRTA buses, and employer shuttles. These lanes will allow the existing transit options to provide better travel times and more reliable schedules, particularly during peak congestion in the mornings and evenings. The following figure shows the recommended dedicated bus lanes as well as existing and planned transit services that would make use of the lanes. There are two tiers of dedicated bus lanes that denote priority.

- **Tier 1:** The highest priority segments for bus lanes are lanes that provide connectivity through Perimeter and focus on the areas surrounding the MARTA rail stations, mall, major office campuses,

and connecting across I-285. This also includes segments connecting to the interstates for GRTA *Xpress* buses and where future managed lanes ramps may be.

- **Tier 2:** The second tier or implementation priority expands the dedicated bus lanes to connect south to Johnson Ferry and west along Barfield Rd to expand access to more major employers.

Benefits of these bus lanes include the following:

- Employer shuttles will be able to operate more quickly, increasing capacity and keeping in place the free rides and direct service these riders expect.
- GRTA *Xpress* routes will be able to circulate through Perimeter more easily, improving reliability and travel time.
- Existing local MARTA routes will be able to take advantage to act as another last mile connection for riders.
- The planned MARTA arterial rapid transit along Hammond Dr will be able to take advantage of the lanes.
- The existence of multiple operators in the area means that Sandy Springs, Dunwoody, and PCIDs will not be responsible for operating costs.
- Maintenance costs will remain comparable to existing costs for the road segments with the bus lanes.

Potential barriers to implementation include:

- The need for multiple cities and agencies to work together will require continuous coordination for the detailed planning studies, acquisition of funds, design and construction, and enforcement of the lanes.
- Detailed analysis of available right-of-way (ROW) may require reconfiguration or even widening of the identified roadway segments in some areas, which could increase capital costs.

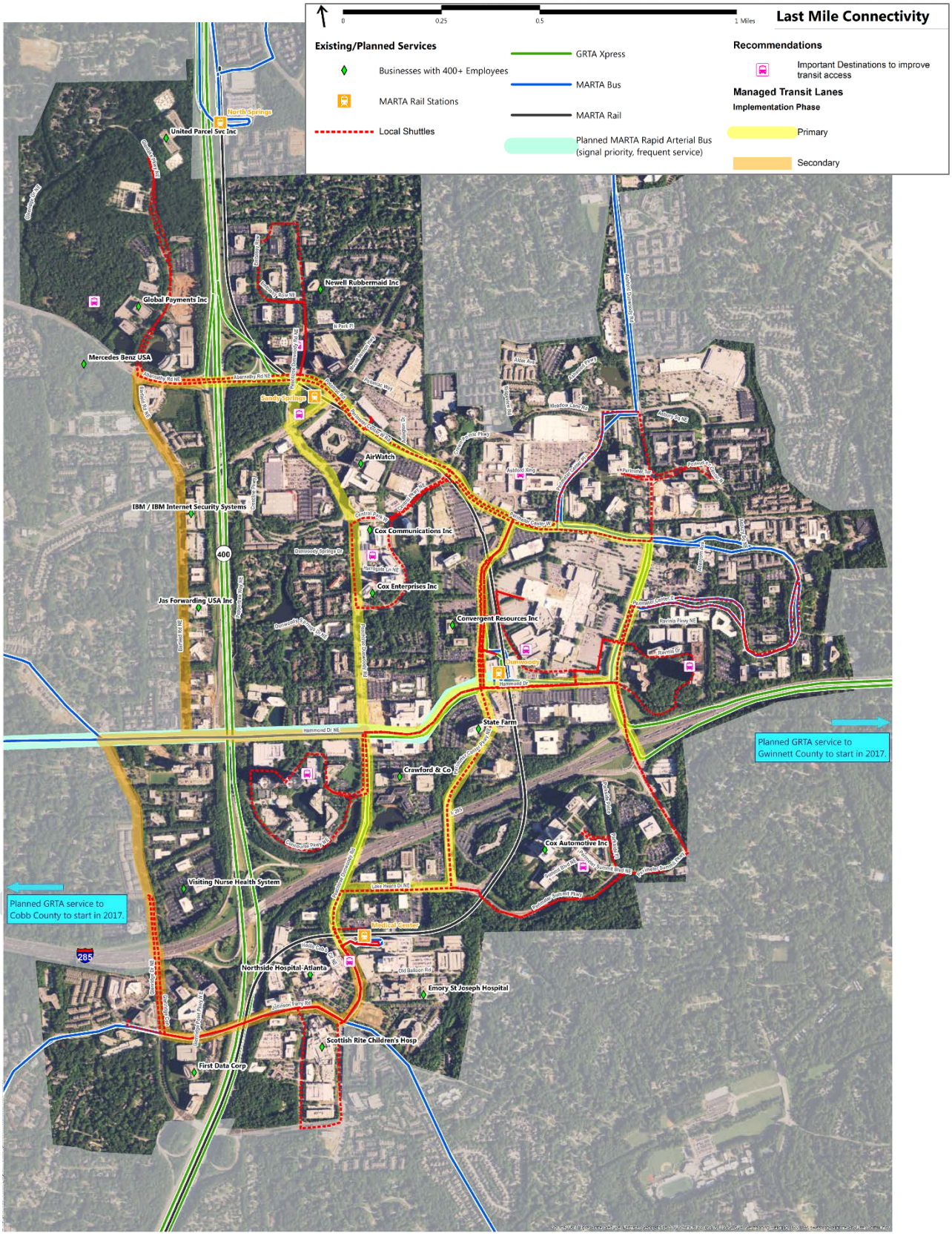


FIGURE 35. TRANSIT LAST MILE CONNECTIVITY RECOMMENDATIONS

To carry these dedicated lanes through to installation from the preliminary visioning step of this study, the following actions are necessary:

- Detailed Planning and Operational Study, including:
  - Evaluation of ROW and pavement widths
  - Evaluation of potential cross sections, examples include:
    - Taking ROW from bike lanes and medians to create a bike/bus lane
    - Taking ROW from general traffic
    - Widening roadways to include bus lanes and bike lanes
    - Barrier separation or striping separation
  - Traffic impact evaluation based on the preferred cross section alternative
  - Selection of enforcement of dedicated bus lanes (i.e. 24/7, Monday through Friday all day, Monday through Friday during AM and PM peak hours only, others)
  - Detailed costs estimate for design and construction
- Coordination between Sandy Springs, Dunwoody, PCIDs, parcel owners with frontage along Tier 1 segments, MARTA, and GRTA to identify joint funding opportunities.
- Design and construction
- Marketing plan for rollout of new dedicated bus lanes to reduce confusion for drivers in general traffic when the lanes open.

The goal of last mile connectivity is to circulate people and connect them from rail and bus stations to their final destination quickly and effectively. MARTA rail and GRTA *Xpress* provide that connection from Atlanta, Cumming, and West Conyers. The new GRTA *Xpress* routes from Kennesaw and Sugarloaf Mills will provide a new population with the option of taking transit to Perimeter and more potential employees and visitors who need to get from those services to their final destination. These dedicated bus lanes will improve travel time and schedule reliability for existing services and may draw in new transit services and riders to improve their overall travel time and or lower commuting costs.

IV. TRANSIT SUPPORTIVE STRATEGIES

Transit cannot be successful on its own. There are many factors that affect the ridership, including the physical characteristics of the service area, but also the behavior of locals and how transportation decisions are made. This section includes short and long term strategies for PCIDs, Sandy Springs, Dunwoody, and Brookhaven to consider. These strategies would not only support greater usage of transit in the dedicated bus lanes circulating Perimeter, but also affect connections between the nodes of Perimeter and local activity centers within the three cities. Some of these strategies are included as specific projects in the project list to increase the likelihood of implementation.

Short-Term

Short-term transit supportive strategies are lower in cost and require a reduced amount of time to implement. Project partners should work together to implement the following strategies, as appropriate, preferably collectively or simultaneously. These strategies are focused on the Perimeter activity center to support transit and efficient circulation of people throughout the area.

Standardize Transit Stop Amenities

Standardizing stops and amenities within Perimeter, particularly shelters and signage, will make it easier for new transit riders and potential future transit riders in the area to be able to identify where they can board transit and find information. Amenities to standardize throughout the area include:

- Standard shelters throughout, regardless of transit agency served.
- Participate in the regional bus stop signage program in which ARC is standardizing bus stop sign designs and information, especially for stops serving multiple agencies.
- Real-time bus information display boards at shelters, MARTA rail stations, and on a mobile application.[6]

Transit-Supportive Technology and Infrastructure

In addition to dedicated bus lanes, other technology and infrastructure can help transit vehicles reduce travel time and schedule reliability. These are lower in cost than dedicated bus lanes and can be implemented at intersections or critical bottlenecks along corridors with a wide variability in caused delay. To address this, agencies can implement:

- Transit Signal Priority (TSP), which includes sensors on traffic signals and in transit vehicles that communicate to reduce the wait time transit vehicles have at traffic signals.
- Queue jumpers, which are a type of intersection that have a short, separate lane that allows transit vehicles to bypass traffic to the intersection stop bar and proceed ahead of general traffic.

Improve Walkability and Bikeability Throughout

Walkability and bikeability is a critical last connection from transit to the origin and final destination for travelers. Essentially, this entails providing supportive infrastructure between transit stops and the front doors of offices, retail, and employment locations. This type of supportive infrastructure and amenities include:

- Wider sidewalk minimums.
- Trees, pedestrian lighting at night, and shading requirements over sidewalks to make it easier to walk in the heat.
- Sidewalk standards internal to developing parcels that provide direct pedestrian and bicycle connections to the front door to buildings.
- Include bicycle standards in new developments and recommended amenities for major employment including:
    - Bicycle parking
    - Showers
    - Bicycle repair stations

Facilities and amenities should be developed in conformance with PCIDs' *Public Space Standards* and other guidelines as applicable.

[6] ARC hosts the OneBusAway mobile application – a free, open source application that includes real-time information for MARTA, CCT, and GRTA. If the data are available for shuttles, they can also be included.

Coordinate and Create Policies Regarding Rideshare Services

Private transportation providers are another key component of the efficient circulation of people around Perimeter. These strategies help influence travelers' decisions to use taxis and ridesharing or "ride hailing" services, such as *Lyft* or *Uber*, instead of driving themselves and regulate the pick-up/drop-off process to avoid its contribution to congestion.

- Promote and encourage taxis and rideshare services, particularly those that allow riders to pool trips and travel together in a single vehicle.
- Consider establishing formal agreements with rideshare service providers to subsidize a portion of rides that begin, end, or do both using a private transportation provider.
- Implement curb control policies – in the future, managing curbs could include identifying areas where taxi or ridshshare service drivers will be allowed to pick-up and drop-off riders. Future developments may have to designate pick-up and drop-off areas.

Encourage and Support Private Shuttles

Private shuttles for office campuses and major employers are an important direct link from MARTA rail stations and GRTA *Xpress* to final destinations. Working with these providers to implement standards of service for the ability to use the dedicated bus lanes will make these services more consistent. Examples include:

- Minimum hours of service
- The production of real-time data for publication on a mobile application

Long-Term

Long term transit-supportive strategies require long range planning and bringing many stakeholders to the table to discuss the future and vision of the urban design and transportation options. With PCIDs, Sandy Springs, Dunwoody, Brookhaven, major employers, office campuses, hospitals, and locals at the table, the following strategies should be discussed and decisions should be made as to how best to apply each strategy.

Land Use and Urban Form Vision and Coordination

As demand for space grows in Perimeter with the associated growth in jobs and housing, it will be important for all stakeholders to come together to set priorities for density, uses, and the urban form of new developments. Potential strategies that encourage use of alternative modes and make it easier for transit riders, pedestrians, and bicyclists to access homes, retail, and employment in the area are:

- Providing direct connections between the residential and office/retail uses, such as direct sidewalks, pedestrian bridges, and walkways through major campuses.
- Set thresholds for employment and residential density both within and outside of the activity center. This will focus the development around the areas with access to the MARTA rail stations, GRTA *Xpress,* and dedicated bus lanes. As the density grows outside of this area, expansions of the transit services will have to be in line with the direction of expanding urban area.

Parking Management Policies

The availability of convenient, low cost parking is a significant factor for travelers when selecting their mode of transportation. As new transit alternatives come on line to provide commuting services into Perimeter, parking is a way to have commuters consider the full costs of their travel options. A recent report published by Smart Growth America, *Empty Spaces,*[7] demonstrates how much less parking transit-oriented development needs than standard engineering guidelines might suggest. Policies include:

- Require employers in the area to provide the same subsidies for transit as they do for parking (i.e. free parking, means employers will also provide the option for free transit passes).
- Provide incentives for employees to live closer to work so that they do not have to drive.
- Require a portion of the cost of parking be passed on to users.
- Provide incentives for employees who live near MARTA rail or GRTA *Xpress* services to use those services instead of driving.

Foster Active Streets

Active streets require more than a sidewalk or multiuse path. To encourage use by pedestrians and bicyclists, it is also important to have trees and shade as well as direct access to employment and retail. Incorporating these things into the desired cross sections of streets in Perimeter will help make active transportation a more viable option and allow transit users a more direct connection to where they are going. This includes:

- Wider minimum sidewalks
- Requirements for trees and shade
- Smaller minimum setback for new developments and direct access to the street instead of having the front door internal to campuses
- Benches at required intervals
- Provide dedicated space for bicyclists where the right-of-way is available

In summary, the combination of new lanes for transit will improve circulation for multiple transit operators, but overall last mile connectivity requires additional efforts towards transit supportive policies and strategies. Together, the availability of faster service, education, amenities, costs, and development policies can make transit operate more efficiently and impact how commuters and visitors make their travel mode decisions.

[7] https://smartgrowthamerica.org/introducing-empty-spaces-new-research-parking-five-tods/

7. Implementation and Next Steps

One of the critical components of any planning process is implementation of recommendations and strategies included within a plan. As discussed in the introduction to this report, it was the intent of the project team to make this a "living plan" that can be adapted and adjusted according to shifting needs and priorities of the cities and PCIDs over time. This section provides guidance on prioritizing projects and developing capital projects.

A. Considerations for Developing Capital Project Lists and Prioritizing Projects

Successful fixed-route transit services rely on direct alignments along or adjacent to higher-density corridors, and it may not be practical or cost-effective to expand coverage or increase frequency of service to increase ridership. Other efforts may be needed to improve first and last mile connections. The convenience or efficacy of first and last mile trips largely depends on three main factors:

- **Distance** – the distance a transit rider must travel between transit service locations and their origins and/or destinations

  A general rule of thumb is that people are willing to walk a ¼-mile to local bus stops and a ½-mile to a rail or rapid transit station. However, in some cases, many people are willing to walk up to a mile or more on bike, if the conditions are conducive to safe, comfortable trips. It may be easier to think of these distances in terms of the amount of time it takes an average person to walk, rather than linear distance. An average person can walk a mile on flat, well-maintained surfaces in about 17 to 20 minutes. (One thing to bear in mind is that these distances represent the actual distance a person walks, along a designated route or path, which may follow an indirect route based upon existing infrastructure, not a straight line from point A to point B).

- **Modal integration** – the ease (or difficulty) of combining multiple modes, such as biking, walking, or ridesharing, with transit trips

  To facilitate convenient, comfortable last mile connectivity, it is essential to ensure that people can easily transfer from one mode to another and make seamless transitions between trips. For example, an incentive to someone riding a bicycle would be to have bike racks at all transit stations and on transit vehicles as well as at office and residential buildings, so that person could easily ride a bike from home, get on a bus, and then ride a bike to his/her final destination. Other types of modal integration revolve around safe, comfortable facilities immediately surrounding transit stations or stops, including but not limited to direct sidewalk connections, benches, shelters, lighting, and shade trees, and dedicated parking for short-term rental or carshare vehicles, so that people can easily access a vehicle to travel to their final destinations quickly.

- **Network quality** – the physical conditions or qualities of the infrastructure and routes between origins, destinations, and transit service

  Beyond physical access and connections, effective last mile connectivity strategies depend upon high-quality facilities and routes that make trips safe and comfortable for travelers. Factors that make for safe and comfortable routes may include such elements as level sidewalk, relatively even topography, well-maintained concrete or asphalt, lighting, shade trees, or covered walkways. In Georgia, shade is an especially important consideration given the warm climate and high temperatures that persist during a long portion of the year.

Based on the three key last mile factors listed above, the following criteria are suggested for consideration when determining which projects are most appropriate for implementation at a given time. As each city and the PCIDs moves forward with identifying capital projects and programs to pursue, these criteria may be helpful in identifying priority projects. ***Note****: these are suggestions only; each jurisdiction individually or working in collaboration should determine their own mechanism for prioritizing projects based upon available resources, forthcoming construction schedule, etc.*

- **Proximity to existing transit** – This could be rated as high/medium/low priority based upon distance or walk time
    - High = within ¼ mile of rail station or 5 to 7-minute walk time
    - Med = within ¾ mile of rail station or 7 to 10-minute walk time
    - Low = more than 1 mile from rail station or 20+ minute walk time
- **Topography and grade** – In general, according to the FHWA, running grades on shared use paths should not exceed five percent, and the most gradual slope possible should be used at all times
    - High = Level grade
    - Med = Moderate grade
    - Low = Steep grade
- **Potential impacts to adjacent property** – Depending upon the surrounding area, some project locations may be in close proximity to nearby commercial or residential property, which may or may not be an issue, depending upon the specific context
    - High = No likely impacts
    - Med = Potential limited impacts
    - Low = Likely impacts
- **Multi-modal integration –** The more opportunities a traveler has to use and easily transition from one mode to another, the more likely he/she is to take advantage of existing facilities and infrastructure
    - High = Provides access to three or more modes of travel
    - Med = Provides access to two modes
    - Low = Provides access to one mode
- **Ability to coordinate with other capital projects –** There are numerous benefits from being able to incorporate last mile connectivity improvement projects with other construction projects, such as repaving, roadway maintenance, intersection improvements, and new development
    - High = Able to fold into existing for planned near-term project
    - Med = Unable to fold into existing or planned project
- **Complexity of project** – The more complex a project is, the more it may be subject to delays in the approval or construction process, and there may be a higher risk of exceeding planned budgets. Project complexity may be a composite criteria comprised of numerous factors, such as the nature and type of project, the location (especially if in an environmentally sensitive area), and the number of agencies involved.
    - High = Low level of complexity
    - Med = Moderate complexity
    - Low = High level of complexity
- **Eligibility for outside funding –** There are pros and cons to seeking outside funding for any project. Sometimes outside funding is seen as an advantage, whereas in other cases, it may add to the complexity of a project. Depending upon local resources and preferences, each jurisdiction should consider how they wish to evaluate eligibility for outside funding.

B. Potential Funding Sources for Last Mile Connectivity Projects

In order to carry out improvements to last mile connectivity throughout the study area, it is anticipated that the cities and PCIDs will utilize a combination of funds from various sources. In addition to local capital programs, funding partners may include GDOT, ARC, DeKalb and/or Fulton County (as applicable), and other outside sources. Private funding may also be an option for some projects, such as those associated with major new or redevelopments. In addition, cities and the PCIDs may choose to pursue funding from philanthropic or other organizations that provide funding for bicycle, pedestrian, and related projects.

Appendix F provides a brief overview of potential opportunities to fund last mile connectivity projects in the future. Because of the changing nature of government at all levels, legislation and program requirements should be carefully reviewed before pursuing any funding opportunity to check for project eligibility and other criteria.

C. Next Steps

As made evident by recent activity around the topic of last mile connectivity around Metro Atlanta, there is momentum behind opportunities to improve conditions for biking, walking, and transit usage. To take advantage of this momentum and keep the *Last Mile Connectivity Study* moving forward, there are several steps that the cities and PCIDs can take. These are briefly described below.

- Identify funding for "quick-win" projects and begin the implementation process, working with potential partners as needed.
- Each project partner (cities and PCIDs) should prioritize projects within its own jurisdiction and develop a short-term implementation plan for projects in the next two years. This process should be revisited each year to ensure priority projects continue to align with larger citywide goals and objectives and available resources.
- Collect data to establish baseline measures and identify targets for last mile connectivity goals to measure progress over time.
- Project partners should coordinate to prioritize inter-jurisdictional projects and develop implementation plans as appropriate.
- Review the project list on an annual basis to update the status and descriptions of projects as needed to assist with implementation.