marta infill station study

prepared for
the Metropolitan Atlanta Rapid Transit Authority

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Acknowledgements

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Introduction

On June 30, 1979, MARTA began rail service on the East Line between the Avondale and Georgia State Stations. A system 30 years in the making, MARTA is increasingly recognized as critical to the growth and sustainability of Atlanta and its region. The investment made by Fulton and DeKalb Counties and the City of Atlanta will prove incredibly valuable for the broader metropolitan region in the years ahead. The original Metropolitan Atlanta Transit Study Commission report recommended a 66-mile, five-county rail system with feeder bus operation and park-and-ride facilities. Today MARTA operates a 47-mile, two-county rail system with feeder bus operations and park-and-ride facilities.

While the MARTA system has not yet reached as geographically far as originally envisioned, the Atlanta region is a very different place than it was back then. Instead of losing population and employment, the urban core is now growing at an unprecedented pace. With hundreds of thousands of new residents moving into MARTA's service area in the next decade alone (see Appendix C, figures C1.0-C1.4 showing residential density along the MARTA rail for the years 1970, 2007, 2015 and 2030), and with increasing traffic congestion region-wide, the system must carry more weight in future regional growth strategies. A strategic optimization of the existing rail system will better position MARTA to capitalize on new growth projections and new transit investments that could not have been envisioned 30 years ago.

MARTA can take advantage of this growth to increase ridership by optimizing access to its rail system from both within its service area and strategically from the surrounding region.

Infill Stations

Infill stations provide an exciting opportunity to adjust the original rail plan to meet some of these changing needs. An infill station is a new station on existing track between two existing stations. MARTA's current system has many stretches of rail that are over one mile between stations. Research suggests that in urban areas, a gap of more than half a mile between stations will present a ridership gap. Infill stations enable MARTA to minimize ridership gaps in densely populated areas and to increase ridership in a relatively short timeframe by improving passenger access to existing rail. Transit systems in other cities across the country have successfully implemented infill stations, including Metro in Washington DC.

Infill stations will provide cost effective and more convenient future connections to other transit projects such as commuter rail, the Beltline, BRT and streetcars. They will enable MARTA to realize its vision of serving the broader region and will help strategically hold its position as the backbone of the regional transit network.

With infill stations, MARTA has the opportunity in the near term to better optimize its existing system and increase ridership without the addition of new rail.

In addition to the obvious benefits of ridership growth, transit-oriented development (TOD) and connection opportunities, infill stations present a unique opportunity to partner with other agencies or private developers for station development and construction. Economies of scale and scope with respect to costs can better leverage MARTA's dollars; so Transit Oriented Development becomes Transit Joint Development through Public-Private Partnerships.

Scope of Study

This report takes a fresh look at MARTA's existing rail system. Its purpose is to identify "ridership gaps" that present the best opportunities for new infill stations and to help MARTA prioritize those opportunities for planning, development and implementation. The study also highlights prospects for teaming with other agencies and private developers so that MARTA can share station costs and hopefully achieve quicker construction.

The study begins with the 40 gaps between existing stations and runs them through conceptual and technical filters to identify MARTA's best opportunities for infill stations. The thirteen stations identified in this process are further analyzed in a comparative analysis so that the MARTA Board and staff can make informed decisions about which opportunities are most attractive over time. Each is detailed extensively in a profile provided in Appendix A that includes a map, photographs, physical conditions, development potential and other considerations. The highlights are also set in a Summary Matrix (table 3.3) for easy cross-comparison. Because cost and ridership potential are of upmost importance, a high-level cost/benefit analysis is provided as part of the comparative analysis that helps prioritize the stations for further study.

Access Enhancement Projects

In addition to new infill stations, this study identifies thirteen 'Access Enhancement Projects,' which would essentially provide new entrances to existing stations/platforms and in doing so decrease the "ridership gap" between stations. Because these station enhancements are much less costly than infill stations yet have the potential to add significant ridership, and because many have partnering opportunities with other agencies and/or developers, they represent low-hanging fruit and may be viable near-term investments for MARTA. Because station access enhancement was not stated in the original scope of work for the Infill Station Study but rather these opportunities were identified in the course of work, the list of projects described is not intended to represent a thorough analysis of the entire MARTA system for such enhancements. Rather, it is a collection of opportunities which were discovered in the course of the infill study, some of which had been previously identified by MARTA. There are likely many more. Each of these thirteen projects is documented with a profile in Appendix B.

Other Challenges Not in Scope

During the course of this study, another challenge for MARTA service expansion became clear, and although it is beyond this study's scope it does bear mention. As private development occurs along MARTA's existing rail infrastructure, opportunities for connection points for new rail lines are being lost. While there was little urgency to guard these connection points in the past while the city was experiencing little growth, MARTA now needs to aggressively do so in order to protect its future expansion options.

For example, the Northwest spur out of Arts Center to Northside Drive that was part of the original referendum plan is now effectively eliminated by the construction of a major private development in its path. Similarly, the original plan for the Proctor Creek Line extension to Perry Homes will likely see its proposed route challenged in the next few years as the City of Atlanta transforms the old Bellwood Quarry into a large new park associated with the Beltline. This Proctor Creek extension was proposed to route through the quarry property and with the Northwest Line effectively eliminated, it is now the most logical heavy-rail extension to serve Bolton, Vinings and Cobb County. Finally, a logical connection opportunity for a rail spur off the East Line between the Georgia State and King Memorial stations to serve Turner Field, southeast Atlanta and south DeKalb County has become much more difficult with the reconstruction of Capitol Homes by the Atlanta Housing Authority. Connection points and expansion opportunities should be further studied by MARTA so that future expansion options are appropriately protected.

Infill Identification

To begin the task of identifying MARTA's infill station opportunities, we first step back and develop a "station typology" for MARTA's existing stations so that we can make informed recommendations on the physical components and costs required for new infill stations. Then we use an identification strategy to analyze each gap in the entire system through conceptual and technical filters and quickly narrow to a set of logical infill stations for further consideration. Finally, the thirteen that survive these filters undergo a comparative analysis so that MARTA can easily identify on a relative basis the best and most timely station opportunities.

Station Typology

In order to make solid recommendations on the components and costs for new infill stations, we must first have a firm grasp on the physical components that make up a MARTA station given its geographic location and the nature of its service area. MARTA's current rail system includes several different kinds of stations. The distinguishing element between them appears to be the primary mode of patron access to the station. For example, highly urban stations like Peachtree Center are designed to be most often accessed by foot and have no parking associated with the station and no bus transfer facility. Stations in highly suburban environments like H.E. Holmes are designed to be accessed primarily by car and therefore have ample parking for patrons and have entrances oriented towards the parking area and not necessarily towards pedestrian approaches. It is important to understand this spectrum of station types in order to determine the most suitable type for each infill opportunity, and then to estimate that new station's cost and benefit.

Because MARTA has not updated its station typology since the first stations were built in the 1970s, four station types have been identified for the purpose of this report and perhaps for future use by MARTA – see figure 1.0. Each type correlates with the specific facilities provided by MARTA at that station. Because 'Access' is the distinguishing element between station types, the letter "A" is applied to a range of four types: A1–A4.

Changing Typologies

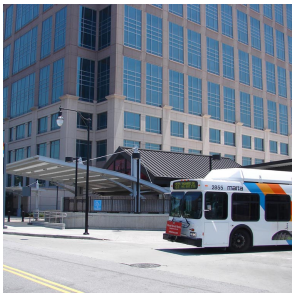
It should be noted that in many cases the station type does not fit well within the urban context of the station area. It may be that the station area has not yet been built out as anticipated, or it may be that the area has changed significantly since the station was originally built. If the station type and station area are not congruent, MARTA may choose to modify the station type by adding or removing certain facilities. Turning underutilized parking lots into transit-oriented development is a perfect example of this strategy. Additionally, the private properties surrounding many auto-oriented stations are being transformed with denser mixed-use development, creating new demand for improved pedestrian access to the transit station. In order to capture this demand and improve ridership, MARTA

should partner with developers to invest in new access enhancement projects, changing these station types from A4 to A3 (see Appendix B).

figure 1.0: ***MARTA Station Types***

A1 **(foot)** stations are designed for primary access by foot. They have multiple pedestrian entrances, little or no parking and curbside bus and taxi service that is integrated into the street environment. Examples include Peachtree Center, Vine City* and Garnett. Because these stations depend heavily on pedestrian access, station areas should include a highly-developed framework of city streets and blocks that are appropriately dimensioned, organized and detailed to provide a strong pedestrian environment.

A2 **(foot, bus)** stations are designed for access by both foot and bus. They have more than one pedestrian entrance, little or no parking, a separate off-street bus transfer facility and most provide only curbside kiss-ride. Examples include Decatur, Bankhead and Midtown. Because these stations depend heavily on pedestrian access, station areas should include a highly-developed framework of city streets and blocks that are appropriately dimensioned, organized and detailed to provide a strong pedestrian environment. Bus transfer loops should be both convenient and unobtrusive to pedestrians.



A3 **(foot, bus, car)** stations are the most versatile type, with convenient access by foot, bus and car. They have more than one pedestrian entrance, ample parking, a separate bus transfer facility and curbside kiss-ride. MARTA's only current example is Lindbergh. Because these stations depend on vehicular access, station areas should be served well by major roadways. Station areas should also have a strong pedestrian environment; however the physical space and access required for ample parking may create challenges for sustaining a vibrant walking district.

A4 **(bus, car)** stations are designed for primary access by bus and car. They typically have a central access point, ample parking (both structured and surface lots), a separate bus transfer facility and a kiss-ride lane. Examples include H.E. Holmes, Dunwoody and Candler Park/Edgewood. Because these stations depend heavily on vehicular access, station areas should be well served by major roadways. While pedestrian access is possible and the station area may see increased densities over time, the physical space and access required for ample parking may preclude the creation of a vibrant walking district.

** note: some A1 & A2 stations include small (mostly unnecessary) parking lots.*

figure 1.1: ***MARTA Station Types Map***

legend: A1 (red), A2 (yellow), A3 (green), A4 (blue)

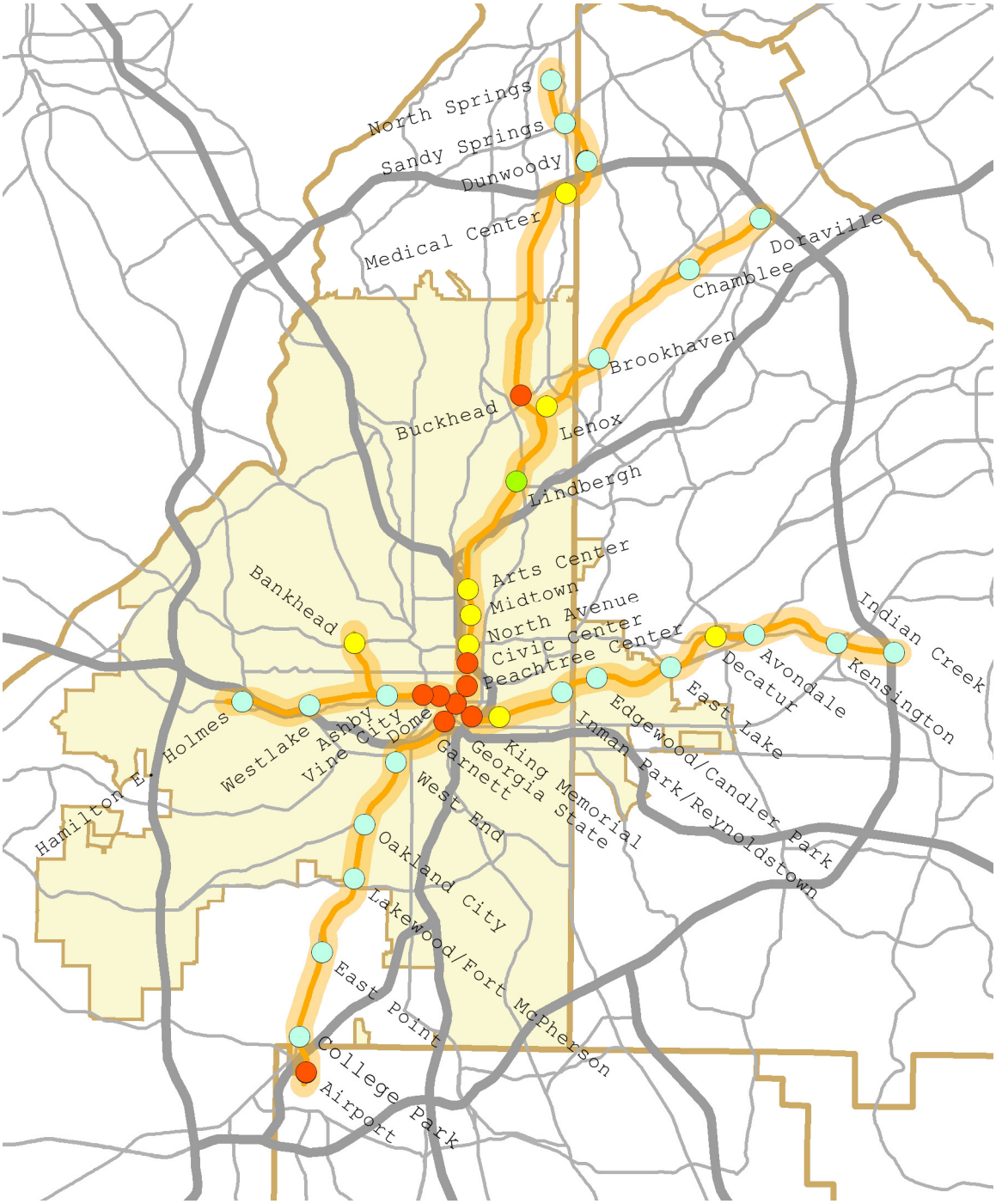


table 1.0

Existing Stations Analysis

MARTA Stations		type	access enhancements	
	Five Points	A1		
EAST LINE		*type*	*access enhancements*	
E1	Georgia State	A1	west to Courtland/Washington Street	**
E2	King Memorial	A2*	south to MLK Jr. Drive	
E3	Inman Park/Reynoldstown	A5	east to Moreland Avenue	**
E4	Edgewood/Candler Park	A5	east to redevelopment	
E5	East Lake	A5		
E6	Decatur	A2		
E7	Avondale	A5		
E8	Kensington	A5		
E9	Indian Creek	A5		
SOUTH LINE		*type*	*access enhancements*	
S1	Garnett	A1		
S2	West End	A5	east to Murphy Avenue; north toward RDA Boulevard	
S3	Oakland City	A5		
S4	Lakewood/Fort McPherson	A5		
S5	East Point	A5		
S6	College Park	A5		
S7	Airport	A1		
WEST LINE		*type*	*access enhancements*	
W1	Dome/Phillips Arena/GWCC/CNN	A1	up to International Plaza	
W2	Vine City	A1*	west to Vine Street/Herndon Stadium	
W3	Ashby	A5		
W4	West Lake	A5		
W5	Hamilton E. Holmes	A5		
PROCTOR CREEK LINE		*type*	*access enhancements*	
P4	Bankhead	A2		
NORTH LINE		*type*	*access enhancements*	
N1	Peachtree Center	A1		
N2	Civic Center	A1	east to Peachtree Street	**
N3	North Avenue	A2		
N4	Midtown	A2		
N5	Arts Center	A2	north toward 17th Street	
N6	Lindbergh	A3		
N7	Buckhead	A1	north to new concourse and Lenox Road	**
N8	Medical Center	A2	north to business park	
N9	Dunwoody	A4		
N10	Sandy Springs	A4		
N11	North Springs	A4		
NORTHEAST LINE		*type*	*access enhancements*	
NE7	Lenox	A2*	north to Lenox Square Mall	**
NE8	Brookhaven	A5		
NE9	Chamblee	A5		
NE10	Doraville	A4	north to GM Plant redevelopment	

* *parking at this station is either so small as to be irrelevant or planned for complete removal in favor of TOD*

** *access project previously identified by MARTA*

Infill Station Identification Strategy

With a better understanding of what facilities infill stations may require, the identification of station opportunities begins with a short set of assumptions:

1. While transit stations at half mile intervals conform to standard planning practices and are consistent with MARTA's existing stations in highly urban areas like downtown Atlanta, stations at *every* half mile are not operationally desirable for a heavy rail system. Therefore, new infill opportunities must not only meet distance requirements, but must also include other substantial development or connection opportunities.
2. New stations are generally expected to be Type A1 (pedestrian) stations. Park & ride facilities are already accommodated at existing stations. Unless there is a specific unmet need at a particular site, infill stations should primarily address improved pedestrian access to the system, development opportunities or connections to existing and future transit service.
3. Proposals for new station platforms may exceed MARTA's current design requirements as long as they comply with standards set by the Americans with Disabilities Act (ADA). In order to move forward with these stations however, the MARTA Board will need to modify its current policies regarding station specifications.
4. The large size, scope and land requirement (and therefore high cost) of many existing MARTA stations (like King Memorial or Lakewood-Fort McPherson) is not required for new infill stations; however many infill opportunities have site constraints that will require substantial structures and features consistent with or even exceeding the older stations.
5. Service disruption during station construction contributes significantly to the cost of infill stations and will be reflected in the assessment. Complete shutdown of any line is not acceptable.

Next, the analysis begins with the entire MARTA rail system and includes three rounds of review: conceptual, technical and comparative.

Conceptual Analysis identifies opportunities for infill stations from a conceptual standpoint, based on analysis of the system and the urban environment at station opportunities. If distances between existing stations exceed one (1) mile and there are development or connection opportunities that make sites worthy of further analysis, infill station sites continue to the next round.

Technical Analysis further analyzes infill opportunities identified in the first round based on technical requirements. A station location may make sense, but unless the existing track can accommodate slope, curvature and width requirements, the infill station site will not be designated an infill opportunity for MARTA.

Comparative Analysis takes a less technical and more practical look at the infill opportunities from the previous two rounds, including an order-of-magnitude assessment of ridership potential, relative cost estimates, connection opportunities, opportunities to leverage other

financial sources and other determinations. Each site is described in detail (Appendix A) so that MARTA Board and staff, as well as other stakeholders can better evaluate the options.

Finally, recommendations are made on which stations present the best near-term opportunities and what immediate actions are needed to protect future opportunities (see Recommendations).

Conceptual Analysis

There are 40 gaps between existing stations along the current MARTA rail system. Three questions quickly narrow these 40 gaps down to sixteen infill station opportunities, comprising a simple conceptual analysis (see table 2.0 for results).

1 *Does the distance between stations justify one or more new stops?*

Distances of a half mile between transit stations are prudent in urban conditions or in areas that are likely to become more urban with the addition of an infill transit station. In low density and less urban conditions or where there is little or no opportunity to build densely, distances between stations may be much greater.

2 *Is there a physical location for a new stop?*

An infill station cannot be justified simply by appropriate distance to existing stations. There must be a physical location with sufficient size and public access to build a new station. Furthermore, station sites must be accessible to a broad public framework of streets or be realistically able to be made accessible to the public as part of the station area improvements.

3 *Is there a significant unmet opportunity at that location?*

More than just a logical location, however, there must also be a compelling reason to build an infill station, such as improved connection to another transit facility like the Beltline, or a sizable area of land suitable for transit-oriented development. A new infill station must justify its expense by either making transit connections or generating TOD much greater than could be accomplished by existing adjacent stations or improved access to existing adjacent stations.

Technical Analysis

Infill station opportunities that survive the Conceptual Analysis continue to the next round. In addition to making sense from a system opportunity standpoint, sites must also meet technical requirements in order to be feasible. Three questions narrow the sixteen first round sites down to thirteen infill opportunities based on technical requirements (see table 2.0 for results).

1 *Does the existing track meet vertical curve requirements?*

MARTA requires a 1% maximum continuous vertical tangent for platform location with no vertical curves. The Americans with Disabilities Act (ADA) allows non-continuous vertical curves with no more than 1% slope. Infill stations should at least meet the ADA requirement.

2 *Does the existing track meet horizontal curve requirements?*

MARTA requires a minimum 750' horizontal tangent section (no curve; 600' platform and 75' clear at each end). This is more stringent than ADA which does allow horizontal curves. The challenge for platforms with horizontal curves is the gap that is made between the vehicle door and the platform. MARTA's maximum theoretical gap is 2.25". ADA, however, restricts this gap between edge of platform and threshold of train to 2.50" with 0.50" tolerance for rail and platform construction, totaling 3.00" maximum gap. If MARTA allows a variance in criteria to match ADA requirements, several infill station opportunities may be realized.

3 *Is there existing sufficient width for platforms?*

MARTA requires 29'-4" for center platforms and 8'-0" clear each for side platforms. Conceivably, center platforms could be narrowed if access was limited to either end of the platform, (it is the elevator and stairs within the center platform that require such a wide dimension), but such stations would require this change to MARTA design standards. Stations that have constricted rights-of-way but where the existing track is elevated and platforms could be built above the adjacent roadway or railroad (Hulsey, Murphy Crossing, Old Avondale, Old Chamblee) are indicated as having sufficient width for platforms (the extra cost is included in third round assessments). Where there is sufficient public right-of-way but platform construction is constricted by alignment of the existing MARTA track within the right-of-way, (Jefferson Park, Oglethorpe - see diagrams in Appendix A), realignment of one track is allowed as long as the other track remains operational during construction (the extra cost is included in third round assessments).

Comparative Analysis

With thirteen infill station opportunities identified, we must now assist MARTA in evaluating which ones are the best near-term opportunities and which ones are still worth future consideration. Perhaps the most important comparative criteria is cost/benefit. Understanding the 'cost per rider' for each opportunity will help MARTA make the most strategic decisions about which stations to invest in.

While extensive cost and ridership analysis for thirteen stations is beyond the scope of this study, we know intuitively that some stations are likely to have high cost with limited ridership and some are relatively cheap with high ridership potential. Three questions deliver an order-of-magnitude comparison of cost/benefit for all thirteen station opportunities. In addition to cost/benefit, the comparative analysis includes an array of station specifics detailed in the Infill Station Profiles (Appendix A) and summarized in the Summary Matrix (table 3.3).

1 *What is the estimated relative capital cost of the station?*

While detailed cost analysis is not within the scope of the study, estimating the relative cost of infill stations is key to identifying which station opportunities are best. Like the 38 existing stations, infill station opportunities come with a range of physical constraints that will undoubtedly present a wide range of costs. While new stations do not need to be built as large and extensive as most existing stations, some infill opportunities are easier to build than others: some are elevated or underground; some lie within constricted rights-of-way; others require service disruption during construction.

Station Condition Multiplier

In order to generate an 'estimated relative capital cost' for new infill stations, MARTA staff provided costs for the last four MARTA stations built: Medical Center, Dunwoody, Sandy Springs and North Springs; as well as figures from a more detailed cost estimate that was done in 2005 for the proposed Uptown infill station. ***These numbers do not represent the entire cost of the station*** because they do not include costs that would be the same regardless of the station's physical condition, such as equipment, track, signalization, signage or similar costs. These costs essentially represent the station structure. With Medical Center representing a station roughly at-grade, its $25 million 'cost' is used as a baseline figure and a 'station condition multiplier' is generated for the other physical conditions: elevated/simple (Dunwoody), elevated/complex (North Springs), underground (Sandy Springs) and underground/elevated (Uptown). So for example, Dunwoody's multiplier is 1.6 because its cost is 1.6 times the cost of Medical Center (see Appendix C, table C3.0).

The next step is to assess the physical condition of each of the thirteen infill station sites and assign each a station condition multiplier. This factor estimates that roughly 80% of a proposed station's platform is at grade (Mechanicsville), in an open cut (Simpson), elevated/complex (Old Chamblee), underground (Hunter Hills) or underground/elevated (Uptown). The station condition multiplier assigned to each is based on the multipliers developed for the older stations (Medical Center, Dunwoody, etc.), but modified to logically represent the different conditions at each proposed site (conditions are detailed for each station in Appendix A).

Other Considerations

The station condition multiplier assigned to each station is shown on table 3.0, along with five other cost considerations described below. These work similarly by including multiplying factors (shown also on table 3.0) to the baseline cost where conditions suggest a higher cost.

1) *Platform Type* – Station platforms are either center style where a single center platform has tracks on either side, or side style with narrower platforms flanking the tracks in the center. Center style platforms are generally less expensive because they require fewer vertical circulation components (like stairs and elevators). However, most infill opportunities require side-style platforms because the existing tracks are tight together.

Stations that require realignment of one track (Jefferson Park, Oglethorpe) recoup a little cost by using center platforms.

2) *Special Condition* – At some infill station locations, service disruption to the existing line during construction cannot be avoided. This is especially true at conditions where the right-of-way is constricted such that one direction of track needs to be realigned (Jefferson Park, Oglethorpe), and at underground conditions (Hunter Hills, Uptown). Armour Station requires realignment of a spur track leading into the adjacent maintenance facility; this is also shown as a special condition.

3) *Land Acquisition* – MARTA and other government entities already own land at some infill locations; at others, land would have to be acquired for station facilities. A factor for land value and acreage is included in the estimated relative cost.

4) Bus Facility – For the purpose of this study, off-street bus facilities add $10 million to the estimated relative capital cost. Because most infill stations are intended to be type A1 stations, off-street bus facilities are generally not included.

5) Parking Garage – Parking garages are estimated to cost $14,000 per space. For the purpose of this study, the two stations requiring garages are allocated 1,000 spaces each.

2 ***What is the estimated ridership potential at each location?***

Because extensive ridership data and modeling are outside the scope of this project, two separate strategies are undertaken in order to describe an order-of-magnitude number of potential boardings at each of the thirteen stations. The first is based on 2006 demographic data and the second is TAZ (Traffic Analysis Zone) data projected to the year 2015. Both are supplemented with supporting data (see below) and compared in table 3.1. While these two strategies clearly do not compare apples-to-apples, they do deliver essentially the same order of station readiness and thus provide a basis with which to make strategic decisions regarding infill station development.

It should be noted that the numbers in both data sets likely capture many existing transit riders who currently connect to MARTA rail at existing stations. However, it is also likely that with the implementation of a new infill station, bus routes would be optimized and would likely capture new transit riders from beyond the half-mile radius due to the shorter bus connection. Because projections for this type of optimization are outside the scope of this study, results should be considered on an order-of-magnitude and not as refined data.

<u>2006 Demographic Transit Trips</u>

Nationally, privately-sourced 2006 demographic data is used to deliver population and employment within a half-mile radius of each infill station site. Standard multipliers were provided by MARTA and are used to assess the number of trips made for each (1.0 round trip per employment; 1.5 round trip per population), and a 30% mode share was assumed for transit (a high percentage regionally, but remember that this is only within the half-mile radius). This delivers the total

round trips made on transit in that half-mile area, (see Appendix C, table C3.1a).

2015 TAZ Transit Trips

Separately, MARTA planning staff provided 2015 projections for transit ridership within a half-mile of each station site (see Appendix C, table C3.1c) based on Traffic Analysis Zones (TAZ). This is a rough estimate based on transportation trips within zones. The data was then run through the same set of standard multipliers, delivering the total round trips made on transit in that same half-mile radius (see Appendix C, table C3.1b).

It should be noted that TAZs do not correspond well with the half-mile radius. The statistics have been adjusted (area weighted) to the region within a half-mile from each station site and therefore assume that the trips are evenly distributed throughout the TAZ. This is typically only the first step for MARTA in ridership analysis; supplemental analysis is recommended to refine these estimates.

Supporting Data

Table 3.1 shows both the 2006 Demographic and 2015 TAZ data supplemented with supporting data:

1) *2007-2015 Development* – Through field work and extensive knowledge of Atlanta's development community, known new residential, commercial and mixed-use projects that are within a half-mile of an infill station site and that are planned for completion before 2015 but not captured in the 2006 Demographic data are identified and tabulated as to size and number of units, etc., (see Appendix C, table C3.1f). The same multipliers are then used as for the previous data to deliver total round trips made on transit for these new developments (table C3.1e). These trips are then added to the 2006 Demographic data in table 3.1 to deliver the total ridership projected at each of the thirteen infill sites (table 3.1). These numbers are not added to the 2015 TAZ data because they are theoretically already included with the 2015 projection.

2) *New Daily Transfers* – Because one of the primary benefits for investing in infill stations is the opportunity to better integrate MARTA rail with existing and future transit options, understanding these connections is of primary interest and is detailed in this section. With that said, assigning ridership gains for most of these connections is highly speculative. For example, the Beltline would benefit significantly from the streamlined connections provided by several infill stations. But because the Beltline is proposed to connect to MARTA rail anyway (albeit slightly less conveniently), the unknowable answer is how many *MORE* riders would ride the Beltline and make the transfer *BECAUSE* of the streamlined connection. For this reason, many of the likely ridership gains made by improved transit connections are unfortunately not reflected in this study (see Appendix C, table C3.1d). The transfer connections that we *can* make logical assumptions about are added to both the 2006 Demographic data and

the 2015 TAZ data to deliver the total ridership projected for each station site.

For reference, transfers are described here in this section in three categories – existing connections, future connections and non-transit connections:

Existing Connections – Several existing transit services could be dramatically improved with the implementation of infill stations. The following existing services were included in this analysis:

Local Bus

The reassessment of MARTA bus routes is already underway and clearly beyond the scope of this study anyway. It is logical, however, that infill stations will include further optimization of bus routes and therefore likely that MARTA will see increased patronage on those routes connecting from beyond the half-mile radius.

Regional Bus

GRTA XPress, CCT (Cobb Community Transit), Gwinnett County Transit and C-Tran (Clayton County) all make bus connections from various parts of the Atlanta metropolitan area to the MARTA rail system. As more routes are likely in the future and there is some disagreement as to where those connections should be made, infill station opportunities will be noted if they provide improved connectivity from major roadways to MARTA rail.

Amtrak

Amtrak's 'Crescent' line stops daily at the Brookwood Station on Peachtree Street, almost a mile north of Arts Center, the closest MARTA rail station. Relocation of its daily stop could coincide with an infill station opportunity, creating a seamless transition from Amtrak to Atlanta's other transportation services – like Hartsfield-Jackson Atlanta International Airport.

Future Connections – In addition to existing services, proposed transit projects would also connect directly to the MARTA rail system. This analysis strategically includes the following key projects in the assessment of infill station opportunities:

I-20 East BRT

The I-20 East Bus Rapid Transit (BRT) project will provide service from downtown Atlanta to the Mall at Stonecrest in DeKalb County along the I-20 corridor. Initially to be built as BRT within a mostly exclusive guideway, the route may later be converted to rail if ridership and development patterns warrant. The MARTA Board approved an LPA (Locally Preferred Alternative) for the I-20 East BRT in December 2004.

Beltline

The Atlanta Beltline is a joint initiative of MARTA and the City of Atlanta. It combines rail transit in a mostly exclusive guideway with bicycle and walking trails along a 22 mile loop of mostly abandoned railroads circling the central city. It crosses MARTA rail at each of the north, south, east, west and Proctor Creek lines. Unfortunately, existing MARTA stations were not located anticipating the reuse of Atlanta's belt line railroads as transit, so in every case careful investigation should be made into the opportunity for new infill stations. The MARTA Board approved an LPA for the Beltline in January 2007.

Peachtree Streetcar

While not currently designated as a MARTA project, the Peachtree Streetcar is one component of a broader attempt by the City of Atlanta to reinvigorate and upgrade its signature boulevard from the northern city limits south through downtown. Through the possible reconfiguration and renaming of other streets, Peachtree may extend south all the way to Fort McPherson. Conceived as a collector/distributor, the Peachtree Streetcar must connect riders with the MARTA rail system. Along this 14.5 mile route, it engages both existing MARTA stations and infill station opportunities.

SEHSR

The Southeast High Speed Rail corridor (SEHSR) has been identified by several southeastern states to connect Washington DC to Charlotte, North Carolina with extensions to Macon via Atlanta and other destinations. It is anticipated that high speed rail will provide travelers an alternative for trips between 100 and 500 miles. GDOT is currently overseeing the proposal in partnership with other state DOTs.

Commuter lines (including Brain Train or Macon-Athens line)

GDOT is also overseeing proposals for regionwide commuter rail, including two prominent proposals - the Macon line (also known as the Lovejoy line) which enters Atlanta from the south and heads into the proposed downtown Multi-modal station at Five Points and the Athens line (also known as the Brain Train) which enters Atlanta from the northeast via Emory University. Opportunities exist for multiple connections between these and other commuter lines with infill MARTA stations.

Emory/Clifton Corridor Rail Shuttle (& C-Loop)

The Clifton Corridor TMA (Traffic Management Association) including Emory University, Emory Hospital, the Centers for Disease Control and Prevention among other stakeholders, is in the process of determining what kind of transit service would best suit the needs of the area. One alternative includes half-hour shuttle service along the proposed Athens

commuter train line. The proposal would use FRA compliant vehicles along the existing freight line between Lawrenceville and downtown Atlanta.

Non-transit Connections – Finally, where infill stations are near major highways, this analysis includes identification of new park and ride facilities. For the purposes of this study, these stations are assigned 1,000 space garages.

3 *What is the estimated relative cost per trip?*

The 'cost per trip' shows which infill station opportunities will provide the most 'bang for the buck' for MARTA. By simply dividing the estimated relative capital cost (from table 3.0) by the projected transit trips (from table 3.1), we arrive at a cost/benefit or 'estimated relative capital cost per trip' (see table 3.2).

Because ridership was calculated for both 2006 Demographic and 2015 TAZ data, we consequently have two numbers representing the estimated relative capital cost per trip. Because the cost from table 3.0 is not the actual cost of the proposed station, similarly the 'estimated relative capital cost per trip' is also not the *actual* cost per trip, and useful only for comparing the stations with one another. In order to keep this number abstract, pennies are used as the monetary format for comparison of the cost per trip score.

The resulting scores (one number for 2006 Demographic data, and one for 2015 TAZ data) highlight stations that are relatively less expensive and also demonstrate solid ridership potential in the near-term. These infill station opportunities would be relatively easy to build and would provide significant improvements in service. Even though the 2006 Demographic and 2015 TAZ data represent different approaches to estimate ridership, the results are essentially the same. With analysis of the scores, all thirteen proposed infill stations fall into three cost/benefit tiers:

Tier 1 includes stations with an average cost per trip score of $0.01 or less. These are the top performing stations in the cost/benefit analysis. Unless they have serious obstacles in other categories of the comparative analysis, they should receive immediate attention from MARTA.

Tier 2 includes stations with an average score of $0.02 to $0.04. These are good opportunities for MARTA that deserve further investigation. However, with limited funding for such projects they are slightly more challenging to justify because they have either high trips but also high cost; are inexpensive but also have low ridership, or they simply have an average score in both categories.

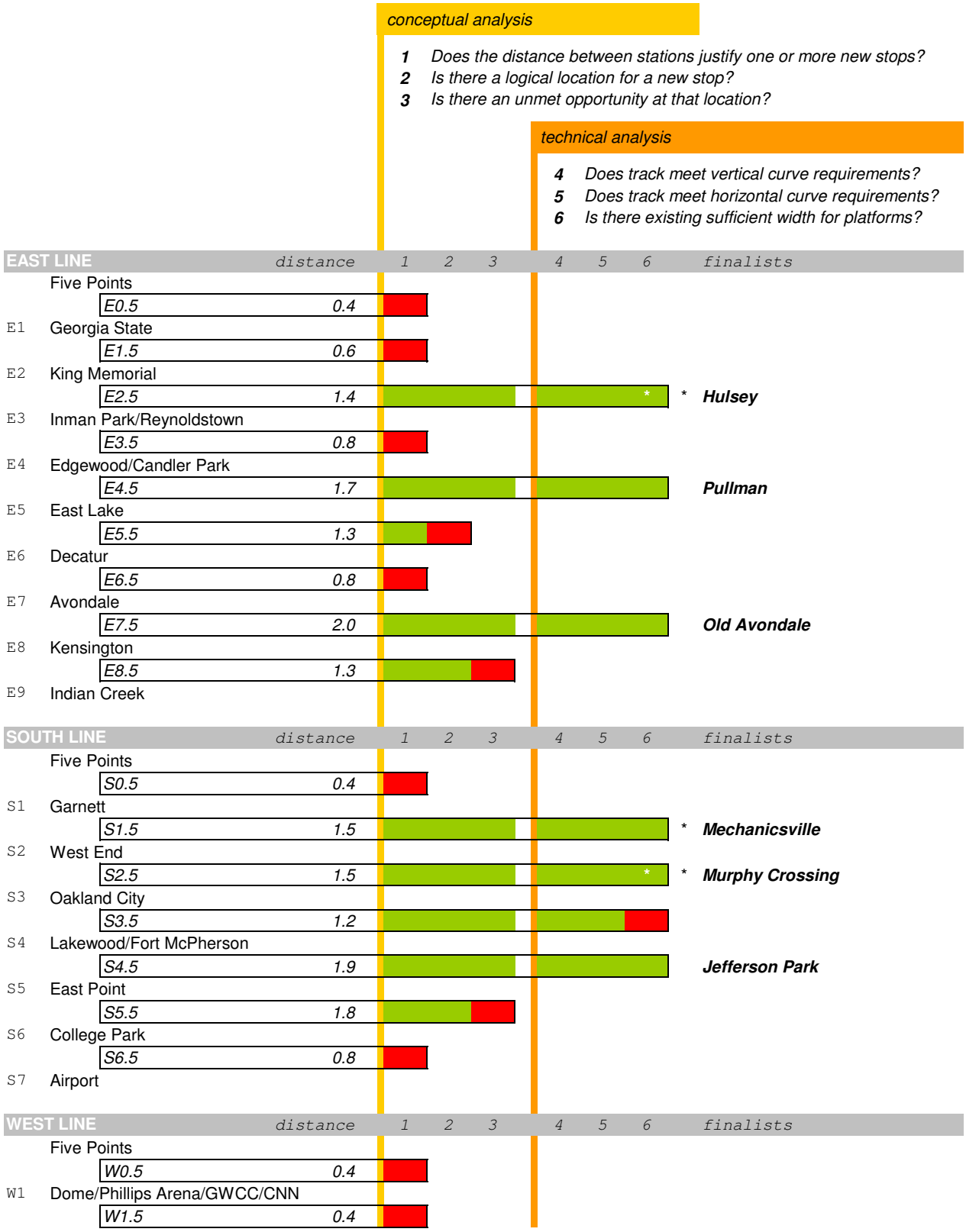
Tier 3 includes stations with an average score of $0.05 or higher. These stations are still worth consideration, even though currently they score poorly in cost/benefit. They are high-cost stations where there is either no adjacent development potential or where *actual* redevelopment has yet to catch up with redevelopment potential.

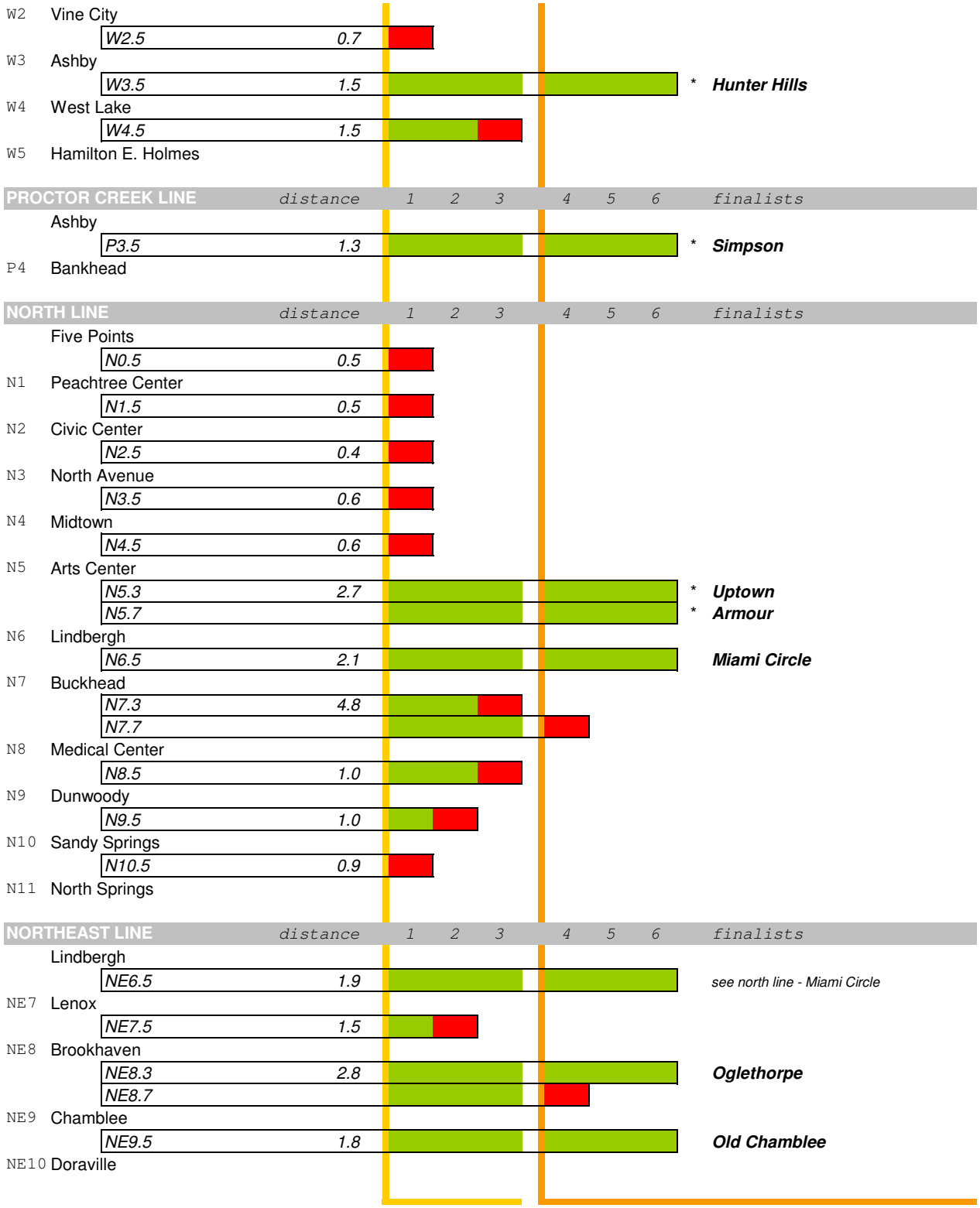
Summary Matrix

Table 3.3 is the Summary Matrix. It includes the cost/benefit analysis but also includes other important factors necessary for MARTA to make strategic decisions about infill stations. Among these other factors are whether station implementation requires changes to MARTA's design specifications (for curved stations or narrow platforms); whether there is significant TOD *potential* (as opposed to actual on-the-ground development); whether there are partnering opportunities with developers or other agencies to share costs; and whether the station fits strategically within a broader regional context.

table 2.0

Conceptual and Technical Analysis





* *station site previously identified by MARTA*

* *right-of-way is constrained, but condition is accommodated - see profile in Appendix A*

table 3.0

Comparative Analysis – COST

			estimated relative capital cost							
		station type	station condition multiplier	platform type	special condition **	property ownership	bus facility	parking garage	estimated relative capital cost *	
EAST LINE										
E2.5	Hulsey	A1	3.0	1.2	1.0	1.0			$	80
E4.5	Pullman	A1	1.2	1.2	1.0	1.0			$	35
E7.5	Old Avondale	A1	2.5	1.2	1.0	1.0			$	68
SOUTH LINE										
S1.5	Mechanicsville	A1	1.0	1.2	1.0	1.5			$	43
S2.5	Murphy Crossing	A1	3.0	1.2	1.0	1.0			$	80
S4.5	Jefferson Park	A2	1.0	1.0	3.0	1.0	10		$	85
WEST LINE										
W3.5	Hunter Hills	A1	3.0	1.2	3.0	1.0			$	130
PROCTOR CREEK LINE										
P3.5	Simpson	A1	1.1	1.2	1.0	1.0			$	33
NORTH LINE										
N5.3	Uptown	A1	4.6	1.0	1.0	1.0			$	114
N5.7	Armour	A3	1.2	1.2	1.3	1.5	10	14	$	79
N6.5	Miami Circle	A3	1.0	1.2	1.0	1.0	10	14	$	54
NORTHEAST LINE										
NE8.3	Oglethorpe	A1	1.0	1.0	3.0	1.0			$	75
NE9.5	Old Chamblee	A1	2.5	1.2	1.0	1.0			$	68

** (in millions) These are **NOT** station costs. Cost proxy does not include equipment, track, parking, etc. – station structure only*

*** single track realignment at Jefferson Park and Oglethorpe; uncapping and recapping underground track at Hunter Hills; realignment of spur track to maintenance facility at Armour. Uptown does have special condition, but is included in 'platform condition' (cost from previous study).*

table 3.1

Comparative Analysis - TRANSIT TRIPS

		2006 demographic transit trips				2015 TAZ transit trips		
		transit trips (table C3.1a)	*new development (table C3.1e)*	*transfers (table C3.1d)*	***total transit trips***	*transit trips (table C3.1b)*	*transfers (table C3.1d)*	***total transit trips***
EAST LINE								
E2.5	Hulsey	3,313	655	0	***3,968***	3,248	0	***3,248***
E4.5	Pullman	1,600	107	0	***1,707***	2,057	0	***2,057***
E7.5	Old Avondale	1,725	322	0	***2,048***	1,919	0	***1,919***
SOUTH LINE								
S1.5	Mechanicsville	4,094	287	0	***4,381***	3,164	0	***3,164***
S2.5	Murphy Crossing	1,620	0	0	***1,620***	1,741	0	***1,741***
S4.5	Jefferson Park	1,258	76	0	***1,334***	1,324	0	***1,324***
WEST LINE								
W3.5	Hunter Hills	1,963	0	0	***1,963***	2,009	0	***2,009***
PROCTOR CREEK LINE								
P3.5	Simpson	2,502	15	0	***2,517***	2,329	0	***2,329***
NORTH LINE								
N5.3	Uptown	6,290	1,652	0	***7,942***	4,077	0	***4,077***
N5.7	Armour	2,163	833	5,101	***8,098***	2,375	5101	***7,476***
N6.5	Miami Circle	3,709	0	1,000	***4,709***	2,922	1000	***3,922***
NORTHEAST LINE								
NE8.3	Oglethorpe	2,733	1,818	0	***4,550***	1,675	0	***1,675***
NE9.5	Old Chamblee	2,583	522	0	***3,104***	2,210	0	***2,210***

table 3.2

Comparative Analysis - COST PER TRIP

		cost	transit trips		estimated relative capital cost per trip		
		*estimated relative capital cost * (table 3.0)*	*2006 demographic (table 3.1)*	*2015 TAZ (table 3.1)*	*2006 demographic*	*2015 TAZ*	***cost/benefit tier***
EAST LINE							
E2.5	Hulsey	$ 80	3,968	3,248	$ 0.02	$ 0.02	*2*
E4.5	Pullman	$ 35	1,707	2,057	$ 0.02	$ 0.02	*2*
E7.5	Old Avondale	$ 68	2,048	1,919	$ 0.03	$ 0.04	*2*
SOUTH LINE							
S1.5	Mechanicsville	$ 43	4,381	3,164	$ 0.01	$ 0.01	*1*
S2.5	Murphy Crossing	$ 80	1,620	1,741	$ 0.05	$ 0.05	*3*
S4.5	Jefferson Park	$ 85	1,334	1,324	$ 0.06	$ 0.06	*3*
WEST LINE							
W3.5	Hunter Hills	$ 130	1,963	2,009	$ 0.07	$ 0.06	*3*
PROCTOR CREEK LINE							
P3.5	Simpson	$ 33	2,517	2,329	$ 0.01	$ 0.01	*1*
NORTH LINE							
N5.3	Uptown	$ 114	7,942	4,077	$ 0.01	$ 0.03	*2*
N5.7	Armour	$ 79	8,098	7,476	$ 0.01	$ 0.01	*1*
N6.5	Miami Circle	$ 54	4,709	3,922	$ 0.01	$ 0.01	*1*
NORTHEAST LINE							
NE8.3	Oglethorpe	$ 75	4,550	1,675	$ 0.02	$ 0.04	*2*
NE9.5	Old Chamblee	$ 68	3,104	2,210	$ 0.02	$ 0.03	*2*

** (in millions) These are **not** station costs. Cost proxy does not include equipment, track, parking, etc. - station structure only*

table 3.3

Comparative Analysis – SUMMARY MATRIX

Notes:

(1) existing track exceeds MARTA's standard for horizontal curves

(2) center-style station platform would be narrower than MARTA's standard

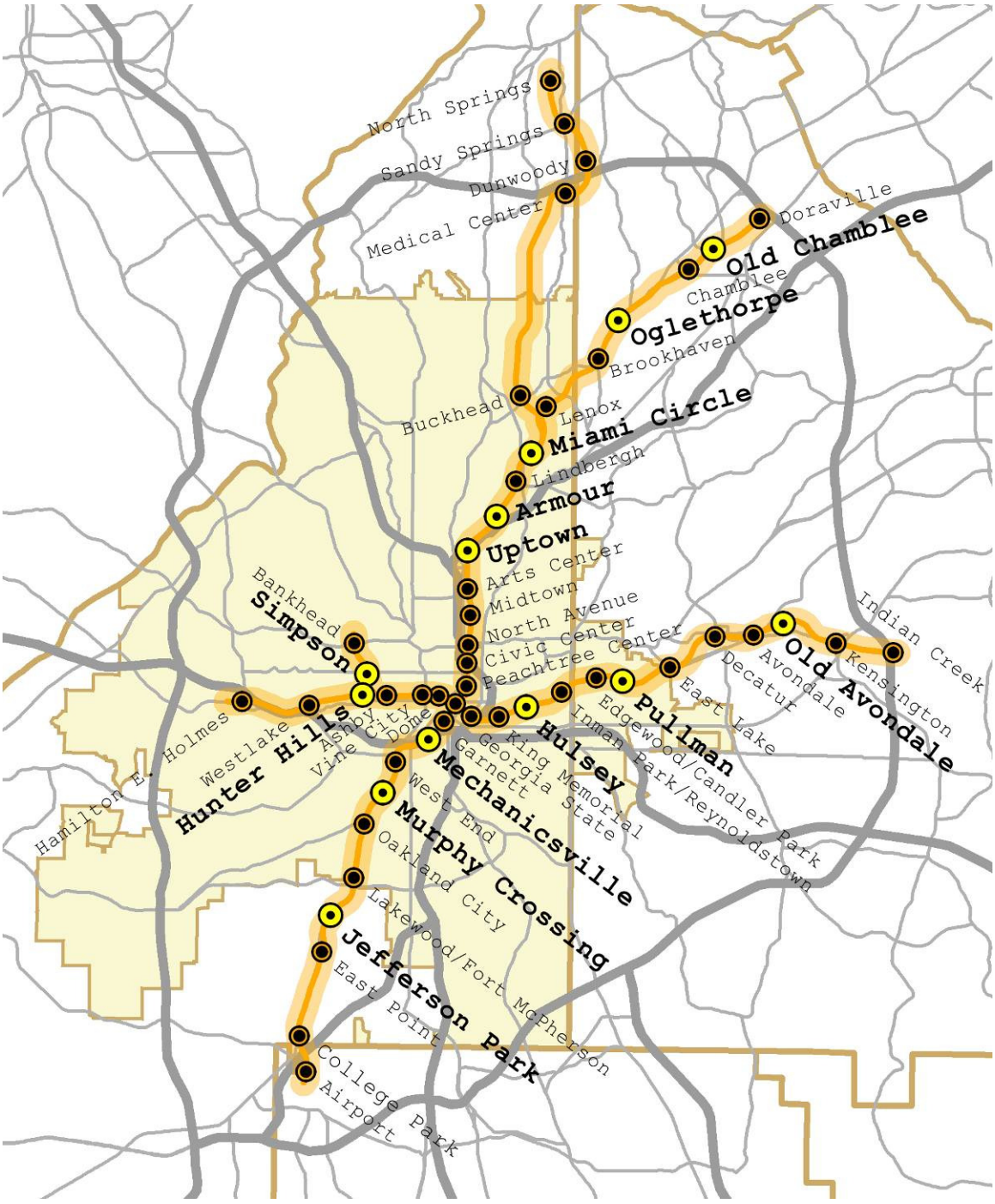
(3) current zoning significantly limits residential development in the station area

(4) major redevelopment opportunity is long-term due to environmental contamination

(5) Armour Station is in community 'Blueprints' plan which typically translates later into official City designation

* *Armour connects MARTA rail to regional bus, Amtrak, commuter rail, and Emory/Clifton*

figure 4.0: ***MARTA System Map with Thirteen Infill Stations***



Infill Station Results

After a full review of the entire MARTA rail system, the Conceptual Analysis delivers sixteen infill station opportunities. Technical Analysis narrows that list somewhat to thirteen. All thirteen (shown on a system map at figure 4.0) are evaluated in the Comparative Analysis including cost and ridership potential and results are highlighted in the Summary Matrix (table 3.3). Profiles for each infill station opportunity can be found in Appendix A including maps, photographs, descriptions, jurisdiction, distance to adjacent stations, and other details used in the evaluation.

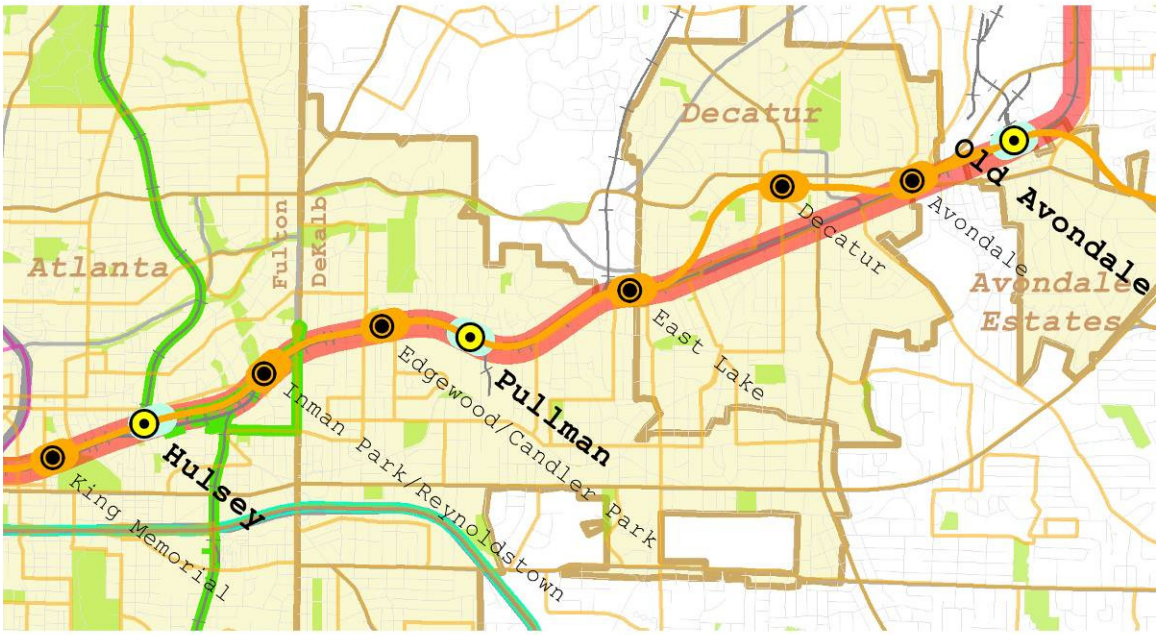
All thirteen sites are viable opportunities for new infill stations. Some are timelier than others and this is most easily seen in the cost/benefit assessment. Stations with relatively low costs and high trip potential score better than others. **Four stations come out on top: Mechanicsville Station on the South Line, Simpson Station on the Proctor Creek Line and Armour Station and Miami Circle Station on the North Line.**

The four stations that do the best in cost/benefit also do well in the other categories of the Comparative Analysis. For example, the Armour Station has both significant development potential but perhaps more importantly would be an incredibly strategic regional connection for MARTA. It would connect MARTA rail with existing transportation like regional bus, Amtrak and I-85, as well as anticipated transit connections like the Beltline, Emory/Clifton Corridor, commuter rail to Athens and Gainesville. In addition to TOD and transit connections, Armour has significant partnering opportunities with other agencies (like Amtrak, GDOT, GRTA) to help bear the cost of station construction. Miami Circle presents the opportunity to work with SRTA and GDOT to alleviate congestion on GA 400 and I-85. Mechanicsville presents a more direct connection between MARTA and I-20 BRT and Simpson presents an ideal connection to the Beltline.

All thirteen stations in the Comparative Analysis present opportunities that MARTA should consider. While some are top-performing stations today, the others should be constantly monitored as their optimal timing is in the future. It is important to note that in cases where the opportunity to implement is in the future, steps must be taken now to preserve that future option. This can involve securing easements for future structural components necessary for the station, acquiring land or working with local municipalities to ensure that development does not proceed without consideration of MARTA (these steps are identified under each station profile in Appendix A).

The following pages highlight MARTA's thirteen infill station opportunities.

figure 4.1: ***East Line Infill Stations***



East Line stations:
Three East Line stations are highlighted here, mapped in figure 4.1 and more extensively detailed in Appendix A.

E2.5 Hulsey Station

- at Beltline/Hulsey Yard
- 0.6 mi west to King Memorial Station
- 0.8 mi east to Inman Park/Reynoldstown Station

advantages

- streamlines Beltline alignment
- significant new development underway in station area
- large and multiple redevelopment opportunities on both sides of track

disadvantages

- scores average in cost/benefit due to high cost
- elevated condition and constricted right-of-way adds to station cost
- track curvature requires changes in MARTA standards
- primary opportunity depends on sale of CSX's Hulsey Yard which is not currently planned
- limited window of opportunity due to new development underway; immediate action required

E4.5 Pullman Station

- near historic Pullman Yard
- 0.6 mi west to Edgewood/Candler Park Station
- 1.1 mi east to East Lake Station

advantages

- significant new development underway in station area
- large and multiple redevelopment opportunities on both sides of track
- new public soccer fields
- less expensive station construction conditions
- partnership opportunities with Georgia Power and State of Georgia

disadvantages

- scores average in cost/benefit due to low trip potential (tier 2)
- track curvature prevents ideal location
- track curvature requires changes in MARTA standards

E7.5 Old Avondale Station

- near historic village of Avondale Estates
- 0.7 mi west to Avondale Station
- 1.3 mi east to Kensington Station

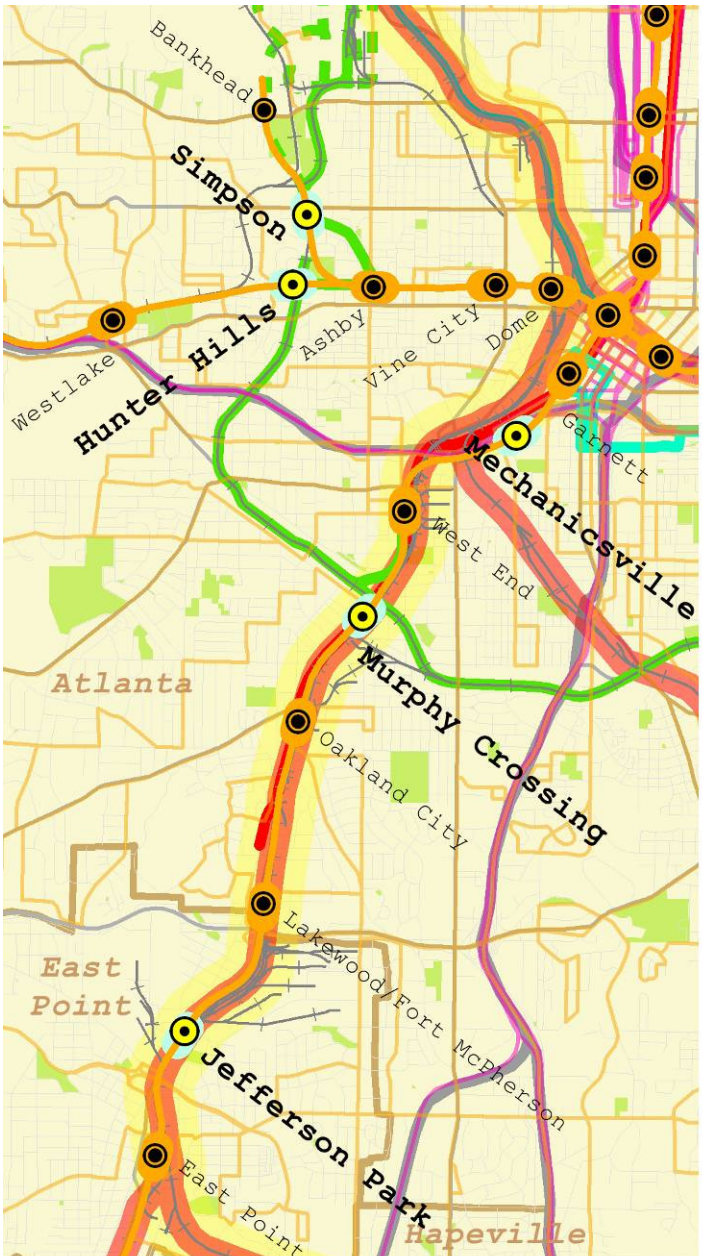
advantages

- adjacent to the historic center of Avondale Estates
- multiple redevelopment opportunities to south of station
- MARTA owns large piece of adjacent land for transit-oriented development

disadvantages

- scores average in cost/benefit due to average cost and average trip potential (tier 2)
- elevated condition adds to station cost
- track curvature & slope prevent ideal location
- one-sided development unless MARTA redevelops Avondale shop facility
- zoning restrictions currently prevent dense residential development

figure 4.2: ***South, West and Proctor Creek Line Infill Stations***



South Line stations:
Three South Line stations are highlighted here, mapped in figure 4.2 and more extensively detailed in Appendix A.

S1.5 Mechanicsville Station

- at McDaniel Street
- 0.5 mi north to Garnett Station
- 1.0 mi south to West End Station

advantages

- scores well in cost/benefit due to low cost and strong trip potential (tier 1)
- significant redevelopment underway in station area at McDaniel Glen
- large and multiple redevelopment opportunities on both sides of I-20
- walking distance to Turner Field (same distance as from Georgia State Station on the East-West line)
- possible alternate terminus for MARTA's I-20 East BRT
- less expensive station construction conditions

disadvantages

- moderate site constraints
- track curvature requires changes in MARTA standards

S2.5 Murphy Crossing Station

- at Beltline
- 0.7 mi north to West End Station
- 0.8 mi south to Oakland City Station

advantages

- streamlines Beltline alignment
- large redevelopment opportunities on both sides of track
- connection to Beltline and Peachtree Streetcar

disadvantages

- scores poorly in cost/benefit because actual development has yet to catch up with development potential (tier 3)
- elevated condition and constricted right-of-way adds to station cost
- limited window of opportunity; action required

S4.5 Jefferson Park Station

- near Tri-Cities High in East Point
- 0.8 mi north to Lakewood/Ft McPherson Station
- 0.8 mi south to East Point Station

advantages

- near existing employment corridor
- large and multiple redevelopment opportunities to west
- many small development opportunities along Main Street
- no/little land acquisition required – MARTA owns land for bus transfer

disadvantages

- scores poorly in cost/benefit because actual development has yet to catch up with development potential (tier 3)
- constricted right-of-way requires realignment of southbound track; service disruption adds to station cost
- major redevelopment opportunities are long-term

West Line stations:
One West Line station is highlighted here, mapped in figure 4.2 and more extensively detailed in Appendix A. The lack of more infill opportunities on the West Line appears mostly due to the short length of the line. Stations east of Ashby are fairly close together already and west of Ashby the conditions are fairly low density and suburban in character. It seems that an extension of the West Line would be a more appropriate investment, and this is already an identified project and priority for MARTA.

W3.5 Hunter Hills Station

- at Beltline
- 0.5 mi east to Ashby Station
- 1.2 mi west to Westlake Station

advantages

- streamlines Beltline alignment
- no/little land acquisition required

disadvantages

- scores poorly in cost/benefit due to high cost and low trip potential (tier 3)
- underground condition adds to station cost; service disruption to uncap and recap track adds to station cost
- track curvature requires changes in MARTA standards
- limited construction access through residential area
- no/little transit-oriented development potential
- limited existing ridership in low-density neighborhood

Proctor Creek Line stations:
Even with its short length, the Proctor Creek Line delivers one of the best opportunities for new infill stations. Because the line has historically underperformed in terms of ridership, strategic investment in the line will make it a more viable part of the whole system. The station opportunity is highlighted here, mapped in figure 4.2 and more extensively detailed in Appendix A.

P3.5 Simpson Station

- at Beltline/Simpson Road
- 0.7 mi east to Ashby Station
- 0.7 mi west to Bankhead Station

advantages

- scores well in cost/benefit due to low cost (tier 1)
- connects to Beltline
- large and multiple redevelopment opportunities on both sides of track
- less expensive station construction conditions
- MARTA owns portion of land required
- increases use of Proctor Creek Line investment
- already noted in City of Atlanta's redevelopment plans

disadvantages

- not a high regional impact station

North Line stations:

Three North Line stations are highlighted here, mapped in figure 4.3 and more extensively detailed in Appendix A. Because the north has enjoyed significant redevelopment in recent years, the opportunities here are timely.

N5.3 Uptown Station

- at the northern extent of midtown
- 0.8 mi south to Arts Center Station
- 1.8 mi north to Lindbergh Station

advantages

- significant new development underway in station area
- alternative to a-b bridge improves operations
- large and multiple redevelopment opportunities
- connection to Peachtree Streetcar and I-85 bus lines
- adjacent land owner is interested in joint development
- MARTA owns portion of land required
- serves SCAD campus and other institutions

disadvantages

- scores average in cost/benefit due to high cost (tier 2)
- increased cost due to service disruption
- local roadway access to station area is extremely limited

N5.7 Armour Station

- at Beltline and near MARTA's Armour Yard facility
- 1.8 mi south to Arts Center Station
- 0.8 mi north to Lindbergh Station

advantages

- scores well in cost/benefit due to high trip potential (tier 1)

- multiple transit connections: Amtrak Crescent Line, I-85 and I-75 bus lines, Beltline, Clifton Corridor/C-Loop, commuter rail to Charlotte and Brain Train
- streamlines Beltline alignment
- MARTA owns portion of land required
- true multi-modal station complements future downtown terminal
- key regional strategic connection (Athens to Airport)
- large and multiple redevelopment opportunities
- significant new development underway in station area
- less expensive station construction conditions

disadvantages

- realignment of spur track to Armour Yard Facility required

N6.5 Miami Circle Station

- at Georgia 400
- 0.7 mi south to Lindbergh Station
- 1.5 mi north to Buckhead Station
- 1.2 mi north to Lenox Station

advantages

- scores well in cost/benefit due to low cost and strong trip potential (tier 1)
- direct terminus for GA 400 bus routes
- direct access for GA 400 park & ride
- large and multiple redevelopment opportunities
- less expensive station construction conditions
- possible partnership opportunities with SRTA/GDOT on I-85/GA 400 interchange improvements

disadvantages

- access ramps to GA 400 add to station cost
- local roadway access to station area is extremely limited

Northeast Line stations:
Two Northeast Line stations are highlighted here, mapped in figure 4.3 and more extensively detailed in Appendix A.

NE8.3 Oglethorpe Station

- at Oglethorpe University
- 0.7 mi south to Brookhaven Station
- 1.8 mi north to Chamblee Station

advantages

- significant new development underway in station area by Sembler directly across Peachtree Road
- multiple redevelopment opportunities on both sides of track

- university desires closer link with transit for students

disadvantages

- scores average in cost/benefit due to average cost and average trip potential (tier 2)
- constricted right-of-way requires realignment of southbound track; service disruption adds to station cost
- Peachtree Road would need to be narrowed/realigned
- narrow center platform may require changes to MARTA standards

NE9.5 Old Chamblee Station

- adjacent to the historic center of Chamblee.
- 0.7 mi south to Chamblee Station
- 1.2 mi north to Doraville Station

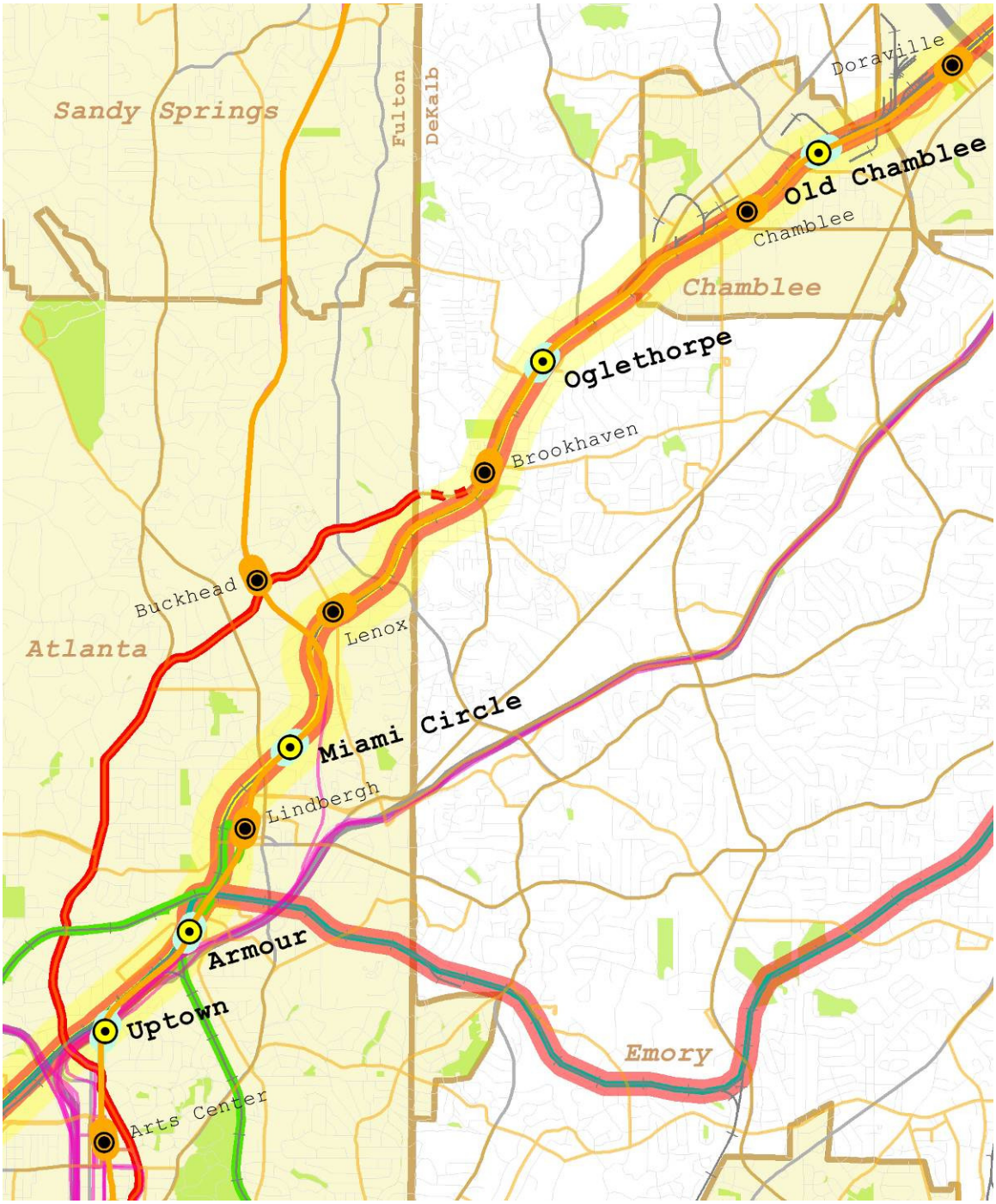
advantages

- significant new development underway in station area including International Village
- large and multiple redevelopment opportunities on both sides of track
- zoning of station area supports transit-oriented development; highest densities allowed in the City of Chamblee

disadvantages

- scores average in cost/benefit due to average cost and average trip potential (tier 2)
- elevated condition adds to station cost
- station orientation would be greatly improved with joint redevelopment of Plaza del Sol property

figure 4.3: ***North and Northeast Line Infill Stations***



Access Enhancement Projects

During the course of the Infill Study, it became clear that in addition to new infill stations, one strategic way to capitalize on station area growth and improve public accessibility to the rail system, is through the construction of new entrances to existing stations, or 'access enhancement projects.' In many cases, they can more inexpensively access at least part of the ridership gap which was the aim of the infill station proposals. MARTA has already made these kinds of improvements at several stations; most notably at the Midtown Station in partnership with the Federal Reserve Bank of Atlanta.

While a full assessment of these projects is outside the scope of the study, (but would be a worthwhile investment for MARTA) the thirteen projects identified here are worth reporting because they share two primary objectives with the concept of infill stations: 1) strategic optimization of existing infrastructure and 2) partnering opportunities to share implementation costs. The projects identified in this report include some that were previously identified by MARTA and some new ideas that came about during our system review, but there are likely many more. Each is detailed with a profile in Appendix B.

The first group of projects includes stations that are in highly pedestrian environments (or potentially high) but where connections are needed for improved pedestrian access. These include:

E1	Georgia State	A1
E2	King Memorial	A2
W1	Dome	A1
W2	Vine City	A1
N2	Civic Center	A1
N5	Arts Center	A2
N7	Buckhead	A1
N8	Medical Center	A2
NE7	Lenox	A2

The second group of projects includes stations that were designed for primary access by car and bus but where the station area is changing (or likely to change) and now has or will have increased pedestrian demand. These include:

E3	Inman Park/Reynoldstown	A4
E4	Edgewood/Candler Park	A4
S2	West End	A4
NE10	Doraville	A4

See Appendix B for a more detailed profile of each project.

Recommendations

All thirteen sites are viable opportunities for new infill stations. Some are more timely than others and this report identifies the four best stations for near-term investment: **Mechanicsville Station on the South Line, Simpson Station on the Proctor Creek Line and Armour Station and Miami Circle Station on the North Line.**

While these are the top-performing stations today, the others should be constantly monitored as their optimal timing is in the future. As population (and traffic) continues to grow within MARTA's service area, and as demand increases for improved public transportation, several of these stations may quickly become more feasible. In order for MARTA to move forward with infill stations, we make the following recommendations:

1. The Armour and Simpson Stations should immediately undergo more extensive schematic design and cost estimation. We believe these two stations are the most ready to begin the implementation process.
2. Strategic conversations with other state and regional agencies, as well as with landowners or developers as appropriate, should begin immediately in regard to Armour, Simpson, Miami Circle and Mechanicsville Stations.
3. For other stations of interest to MARTA, the immediate action steps listed for each in the final report should be taken.
4. For other stations of interest that require changes to MARTA's design standards, this evaluation process should begin.
5. Understand that conditions such as development activity may change for stations that performed less-well in this study, and that these stations could quickly become significantly more viable investments for MARTA in the near-term. Therefore, MARTA should initiate conversations with local municipalities about the opportunities to be sure that any development activity does not proceed without consideration for access to MARTA.

Over the course of this study we have developed two additional strategic recommendations for MARTA:

6. Because access enhancement projects represent relatively inexpensive improvements that could result in increased connectivity and ridership, MARTA should further assess the opportunities and begin discussions with agency and developer partners.
7. Growth in the urban core is not only closing the window of opportunity for new infill stations, but also for new line connections or line extensions. MARTA should take steps to protect these opportunities.