I-20 EAST TRANSIT INITIATIVE

Definition of Alternatives Report

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Metropolitan Atlanta Rapid Transit Authority

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EXECUTIVE SUMMARY

The I-20 East Transit Initiative is a study being carried out by the Metropolitan Atlanta Rapid Transit Authority (MARTA), in cooperation with the Federal Transit Administration (FTA), to identify transit investments that would improve east-west mobility within the corridor. In accordance with the FTA New Starts process for transit projects, the I-20 East Transit Initiative will select a Locally Preferred Alternative (LPA) as part of the Detailed Corridor Analysis phase of the project. The LPA will then advance into the environmental review process.

The Definition of Alternatives Report provides a description of the alternatives assessed in Tier 1 Screening and those carried forward into Tier 2 Screening. This report also details how each of these alternatives were identified. As noted throughout the report, for detailed information on how each of these alternatives was evaluated for advancement through the alternatives development process, please reference the *Evaluation Framework Report* and *Tier 1 and Tier 2 Alternatives Screening Report* developed for this effort.

Alternatives Development Process

The first step in the alternatives development and screening process was the identification of feasible alternatives. Using the final transit alternatives identified in the previous *Alternatives Analysis* (2004) as a starting point, the Stakeholder Advisory Committee (SAC) was tasked with identification of transit alignments that would connect activity centers throughout the I-20 East Corridor with central Atlanta and the existing MARTA heavy rail system.

The methodology used to identify and evaluate the proposed transit alternatives was a two-tiered process in which alternatives were evaluated using increasingly detailed data and evaluation criteria. The two phases for the development and evaluation of alternatives for the I-20 East Transit Initiative were:

- **Tier 1 (Preliminary) Screening –** This phase began with the development and evaluation of a broad range of transit alignment alternatives for the I-20 East Corridor. The Tier 1 Screening then utilized a limited number of Measures of Effectiveness (MOEs) to eliminate alignment alternatives that do not meet the objectives of the proposed project. Using a limited number of MOEs allowed the Detailed Corridor Analysis to quickly determine those alternatives which would be infeasible, and allowed the study to expend its resources on a more thorough evaluation of those alternatives which it felt would be practicable.
- **Tier 2 (Detailed) Screening -** The results of the Tier 1 Screening was a smaller group of Tier 2 Alternatives that were subject to more detailed evaluation. This screening included a Baseline Alternative and a No Build Alternative. The Tier 2 Screening was both more in-depth and wider in scope than that performed in the Tier 1 Screening and incorporated a high degree of technical analysis with many different MOEs. This robust process ensured that those alternatives which had been deemed feasible were compared thoroughly for the eventual selection of the appropriate LPA.

Tier 1 Screening Process

The focus of Tier 1 Screening was to identify the more optimal alignments that connect activity centers in the corridor to downtown Atlanta – regardless of technology. As such,

the process of identifying the alignments to be advanced into Tier 2 consisted of three primary decision points:

- Decision Point 1: Identification and Preliminary Evaluation of Mainline Alignments
- Decision Point 2: Identification and Assessment of Downtown Connections
- Decision Point 3: Identification of Panola Road Service Alignments

For the I-20 East Transit Initiative, this process was driven by input from the SAC – which consists of representatives from neighborhood associations, local governments, community groups, and elected officials.

The Tier 1 Screening utilized a limited number of MOEs to determine the more feasible alignments to advance to Tier 2.

Alignments Advancing into Tier 2 Screening

Through the Tier 1 Screening results, the following alignments were carried into Tier 2 Screening:

- Mainline Alignments – All three mainline alignments
- Downtown Connectivity Alignments –
  1) Connection to Five Points and Garnett MARTA stations; and
  2) Connection to Inman Park/Reynoldstown MARTA station and Midtown via BeltLine alignment
- Panola Road Area Service Options – Parallel to I-20 Alignment

More detail on the Tier 1 Screening results can be found in Section 3 of this report and in the *Tier 1 and Tier 2 Alternatives Screening Report*.

Tier 2 Screening Process

The purpose of Tier 2 Screening was to assess the performance of transit technologies on the alignments that advanced from Tier 1 Screening to determine the LPA. This detailed screening process employed a large number of MOEs to help determine the highest performing alternative to be advanced. More information on the Tier 2 MOEs assessed can be referenced in the *Evaluation Framework Report*. The following steps were undertaken in the Tier 2 Screening Process:

- Step 1: Initial Technology Assessment: Potential premium transit technologies were assessed based on their vehicle characteristics, station stop characteristics, operating service, and capital and operating costs to determine their appropriateness for the alignments resulting from Tier 1 Screening. The technologies assessed included Bus Rapid Transit (BRT), modern streetcar, Light Rail Transit (LRT), and Heavy Rail Transit (HRT). The assessment concluded that all technologies with the exception of modern streetcar could meet the overall purpose and need for the project.
- Step 2: Development of Tier 2 Transit Alternatives: Based on the initial technology assessment, alignments advancing from Tier 1 Screening were matched with the appropriate technology. Factors considered for determining technologies included

operational compatibility with transit connections, environmental and community characteristics of the Tier 2 alignments, and SAC input.

- Step 3: Identification of LPA through Evaluation of Tier 2 Alternatives.

The subsections that follow describe the first two steps in greater detail. It should be noted that Step 3 is still ongoing and the results will be presented in the *Locally Preferred Alternative Report.*

Overview of Tier 2 Alternatives

Through the first steps of Tier 2 Screening, the following alternatives were identified for evaluation as the potential LPA to undergo Tier 2 Screening. A map of the Tier 2 Build Alternatives is provided in **Figure ES-1.** Each alternative is described in greater detail in Section 5 of this report.

- **HRT 1 – Garnett MARTA Station to Mall at Stonecrest –** HRT 1 would spur from the existing MARTA rail network just south of Garnett Station. From there, the alignment would extend south parallel to Windsor Street, then east along Glenwood Avenue/Fulton Street, before it would enter the I-20 right-of-way at Hill Street. From there, the alignment would extend east, on structure, to the Mall at Stonecrest in east DeKalb County. First, HRT1 would run in the center of the I-20 median from Hill Street to Glenwood Avenue, where it would transition to the south side of the interstate, and continue to I-285. There, the alignment would cross to the north side of the interstate, then, at Panola Road, cross to the south side again. HRT1 would serve new stations at Turner Field, Glenwood Park, Glenwood Avenue, Gresham Road, Candler Road, Wesley Chapel Road, Panola Road, Lithonia Industrial Boulevard, and Mall at Stonecrest.
- **LRT 1 –** Five Points MARTA Station to Mall at Stonecrest – LRT 1 would operate in-street along Broad Street from Five Points Station to Garnett Station. It would then operate in an exclusive guideway south of Garnett Station and extend south parallel to Windsor Street, then east along Glenwood Avenue/Fulton Street, before it would enter the I-20 right-of-way at Hill Street. From there, the alignment would extend east, on structure, to the Mall at Stonecrest in east DeKalb County. First, LRT1 would run in the center of the I-20 median from Hill Street to Glenwood Avenue, where it would transition to the south side of the interstate, and continue to I-285. There, the alignment would cross to the north side of the interstate, then, at Panola Road, cross to the south side again.LRT1 would serve new stations at Turner Field, Glenwood Park, Glenwood Avenue, Gresham Road, Candler Road, Wesley Chapel Road, Panola Road, Lithonia Industrial Boulevard, and Mall at Stonecrest.
- **BRT 1 –** Five Points MARTA Station to Mall at Stonecrest –BRT 1 would operate in-street along Broad Street from Five Points Station to Garnett Station. It would then operate in an exclusive guideway south of Garnett Station and extend south parallel to Windsor Street, then east along Glenwood Avenue/ Fulton Street, before it would enter the I-20 right-of-way at Hill Street. From there, the alignment would extend east, on structure, to the Mall at Stonecrest in east DeKalb County. First, BRT1 would run in the center of the I-20 median from Hill Street to Glenwood Avenue, where it would transition to the south side of the interstate, and continue to I-285. There, the alignment would cross to the north side of the interstate, then, at Panola Road, cross to the south side again. BRT1 would serve new stations at Turner Field, Glenwood Park, Glenwood Avenue, Gresham Road, Candler Road, Wesley Chapel Road, Panola Road, Lithonia Industrial Boulevard, and Mall at Stonecrest.

- **HRT 2 – Edgewood/Candler Park MARTA Station to Mall at Stonecrest** – HRT 2 would spur from the existing MARTA rail network just west of the East Lake Station. The alignment would enter a tunnel within existing MARTA right-of-way and extend south to I-20. The alignment would then surface and run parallel to I-20 to the Mall at Stonecrest in eastern DeKalb County. After surfacing, HRT2 would cross to the south side of the interstate, and continue to I-285. There, the alignment would cross to the north side of the interstate, then, at Panola Road, cross to the south side again. HRT2 would serve new stations at Glenwood Avenue, Gresham Road, Candler Road, Wesley Chapel Road, Panola Road, Lithonia Industrial Boulevard, and Mall at Stonecrest.

- **LRT 2 – North Avenue via BeltLine Alignment to Inman Park/Reynoldstown MARTA to Mall at Stonecrest** – LRT 2 would originate at the North Avenue Station and operate in-street along North Avenue east to the proposed BeltLine alignment. It would follow the BeltLine alignment south to I-20. It would then extend east in an exclusive guideway, on structure and run parallel to I-20 to the Mall at Stonecrest in eastern DeKalb County. First, LRT2 would run in the center of the I-20 median to Glenwood Avenue, where it would transition to the south side of the interstate, and continue to I-285. There, the alignment would cross to the north side of the interstate, then, at Panola Road, cross to the south side again. LRT2 would serve new stations at Glenwood Park, Glenwood Avenue, Gresham Road, Candler Road, Wesley Chapel Road, Panola Road, Lithonia Industrial Boulevard, and Mall at Stonecrest.

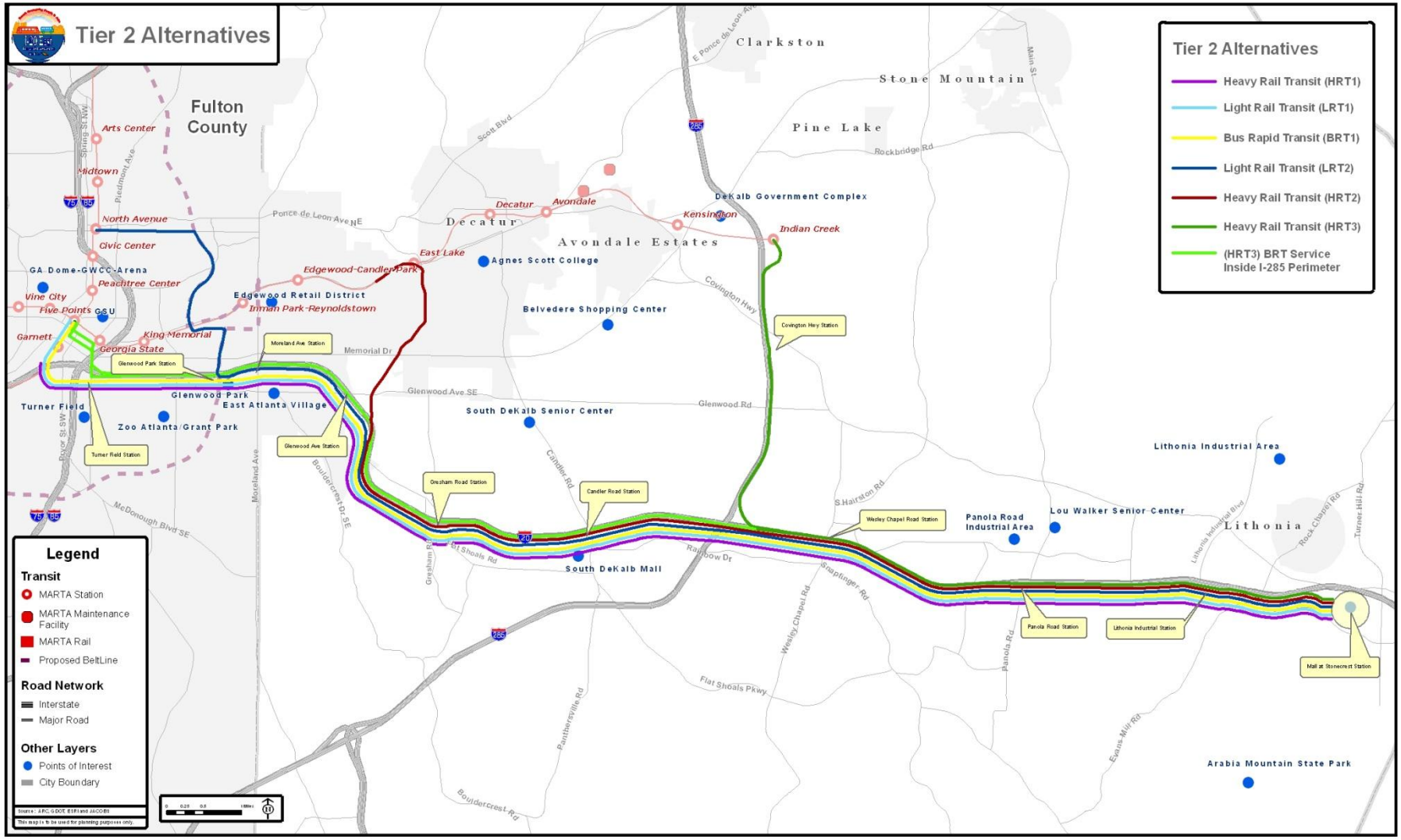
- **HRT 3 – Indian Creek MARTA Station to Mall at Stonecrest** – HRT 3 would extend the existing heavy rail Blue Line from the Indian Creek Station, south parallel to I-285, then east parallel to I-20 to the Mall at Stonecrest in eastern DeKalb County. First, HRT3's heavy rail alignment would run along the east side of I-285, then along the north side of I-20 to Panola Road, where it would cross to the south side of the interstate. This alternative would also include BRT service inside the Perimeter, originating at the Five Points Station, traveling south along surface streets to I-20, then operating in I-20 serving stations eastward to Wesley Chapel Road. New stations along the HRT portion of this alternative would be located at Covington Highway, Wesley Chapel Road, Panola Road, Lithonia Industrial Boulevard, and Mall at Stonecrest. New stations for the BRT portion of the alternative would be located at Moreland Avenue, Glenwood Avenue, Gresham Road, and Candler Road.

No Build and Baseline/Transit System Management (TSM) Alternatives

In addition to the Build Alternatives, two additional alternatives were examined in the Tier 2 Screening. These include the No Build Alternative and Baseline/ Transit System Management (TSM) Alternative. The FTA requires that these alternatives are developed and assessed in comparison to the Build Alternatives to fully understand the actual benefits of a proposed alternative. The No Build Alternative assumed no transportation improvements in the corridor, with the exception of currently funded and committed projects. Only projects that have committed funding in the region's Transportation Improvement Program (TIP) were included in this alternative. This alternative served as a comparison point for all other alternatives.

Another comparative alternative required by the FTA is the Baseline/TSM Alternative, which gauged the benefits of relatively low-cost transit improvements in the study area. It was intended to make more efficient use of the transit infrastructure already in place. This alternative represented the optimal modifications to the existing transit system not involving the construction of new fixed guideway transit. Both the No Build and Baseline/TSM Alternatives are described in further detail in Section 5 of this report.

Figure ES-1: Tier 2 Alternatives Map



Next Steps

The next step in the I-20 East Transit Initiative is the completion of the Tier 2 Screening Process to determine the LPA for the I-20 East Initiative to be carried forward into DEIS. As such, the Tier 2 Alternatives identified herein will be subject to the full set of performance measures developed for this effort, as detailed in the *Evaluation Framework Report*.

Following identification of the LPA, the following steps will occur:

- Adoption of the LPA by the MARTA board;
- Coordination with the Atlanta Regional Commission (ARC) to modify the Long Range Transportation Plan for the region, PLAN 2040, to reflect the improvement identified as the LPA for the I-20 East Transit Initiative; and
- Coordination with FTA to discuss the LPA and identify any needed LPA refinements and enter into the DEIS phase of project development.

1.0 INTRODUCTION

The I-20 East Transit Initiative is a study being carried out by MARTA, in cooperation with the FTA, to identify transit investments that would improve east-west mobility within the corridor. In accordance with the FTA New Starts process for transit projects, the I-20 East Transit Initiative will select an LPA as part of the Detailed Corridor Analysis phase of the project. The LPA will then advance into the environmental review process.

The I-20 East Transit Initiative considered six transit alternatives in the Tier 2 Screening as part of the Detailed Corridor Analysis phase of the project. These six alternatives were comprised of several different alignments and transit technologies which would provide rapid transit service between central Atlanta and the Mall at Stonecrest in eastern DeKalb County. The transit technologies considered in the I-20 East Transit Initiative included HRT, LRT, and BRT.

The two-tier Detailed Corridor Analysis evaluation process utilized an evaluation framework which used a series of MOEs to determine the ability of each alternative to fulfill the study's goals and objectives. For more information, please reference the *Evaluation Framework Report.*

The *Definition of Alternatives Report* provides a description of how each of the Detailed Corridor Analysis alternatives was identified, how they were assessed in the Tier 1 Screening process, and descriptions of those alternatives which carried forward into Tier 2 Screening. Detailed information on how each of these alternatives was evaluated for advancement through the alternatives development process can be found in the *Tier 1 and Tier 2 Alternatives Screening Report*. Detailed information about the Tier 2 Screening described above can be found in the *Locally Preferred Alternative Report.*

2.0 ALTERNATIVES DEVELOPMENT PROCESS

The first step in the alternatives development and screening process was the identification of feasible alternatives. Using the final transit alternatives identified in the previous Alternatives Analysis (2004) as a starting point, the SAC was tasked with identification of transit alignments that would connect activity centers throughout the I-20 East Corridor with central Atlanta and the existing MARTA heavy rail system.

The methodology used to identify and evaluate the proposed transit alternatives was a two-tiered process in which alternatives were evaluated using increasingly detailed data and evaluation criteria. The two phases for the development and evaluation of alternatives for the I-20 East Transit Initiative were:

- **Tier 1 (Preliminary) Screening –** This phase began with the development and evaluation of a broad range of transit alignment alternatives for the I-20 East Corridor. The Tier 1 Screening then utilized a limited number of MOEs to eliminate alignment alternatives that do not meet the objectives of the proposed project. Using a limited number of MOEs allowed the Detailed Corridor Analysis to quickly determine those alternatives which would be infeasible, and allowed the study to expend its resources on a more thorough evaluation of those alternatives which it felt would be practicable.

- **Tier 2 (Detailed) Screening -** The results of the Tier 1 Screening was a smaller group of Tier 2 Alternatives that were subject to more detailed evaluation. This screening included a Baseline Alternative and a No Build Alternative. The Tier 2 Screening was both more in-depth and wider in scope than that performed in the Tier 1 Screening and incorporated a high degree of technical analysis with many different MOEs. This robust process ensured that those alternatives which had been deemed feasible were compared thoroughly for the eventual selection of the appropriate LPA.

2.1 Tier 1 Screening Process

The focus of Tier 1 Screening was to identify the most optimal alignments to connect to downtown Atlanta from a service potential standpoint – regardless of technology. As such, the process of identifying the alignments to be advanced into Tier 2 comprised of three primary decision points:

- Decision Point 1: Identification and Preliminary Evaluation of Mainline Alignments
- Decision Point 2: Identification and Assessment of Downtown Connections
- Decision Point 3: Identification of Panola Road Service Alignments

For the I-20 East Transit Initiative, this process was driven through input from the SAC – which consisted of representatives from neighborhood associations, local governments, community groups, and elected officials.

The Tier 1 Screening utilized a limited number of MOEs to determine the most feasible alignments to advance to Tier 2. A detailed description of these MOEs and the evaluation process is provided in the *Evaluation Framework Report*. More detail on the evaluation results of the Tier 1 Screening and the factors that led to the development of

the Tier 2 Alternatives can be referenced in the *Tier 1 and Tier 2 Alternatives Screening Report.*

2.1.1 Identification of Mainline Alignments

In December 2010, the SAC was presented with a blank map of the corridor to identify the best mainline alternatives. As a background to assist in the identification of these alternatives, the SAC was presented with baseline conditions in the I-20 East Corridor such as travel patterns, congestion levels and areas of transit dependent populations. As a result, the following mainline alternatives were identified to be carried forward:

- Parallel to I-20 from the Mall at Stonecrest to downtown Atlanta
- Parallel to I-20 from the Mall at Stonecrest to the Edgewood/Candler Park MARTA station
- Extension of the East-West Line from the Indian Creek MARTA Station south along I-285 to I-20 and then east to the Mall at Stonecrest along I-20.

A more detailed description of these alignments is provided in Section 3.1.

2.1.2 Identification of Downtown Connections

Of the three mainline alignments identified by the SAC, only one provided a direct connection to downtown without connecting to the MARTA East Line outside of the downtown area – either at the Edgewood/Candler Park or Indian Creek MARTA stations. Therefore, the next step in the process was to identify potential connections to downtown for this mainline alignment. The critical factors identified by the SAC for downtown connectivity were the need for connectivity to the MARTA rail system, potential to connect to the proposed BeltLine project, and to connect to employment centers. As a result, the following downtown connections were identified:

1. To King Memorial MARTA Station via BeltLine Alignment
2. To King Memorial MARTA Station and Downtown via Streetcar
3. To King Memorial MARTA Station via Hill Street
4. To Downtown via Streetcar
5. To Garnett and Five Points MARTA Stations
6. To Multi-Modal Passenger Terminal/Five Points MARTA Station
7. To West End Station/Atlanta University Center/Ashby MARTA Station
8. To Inman Park/Reynoldstown MARTA Station and Midtown via BeltLine Alignment

A more detailed description of these alignments is provided in Section 3.2.

2.1.3 Identification of Panola Road Service Options

In recognition of the need to serve the employment centers in and around the Panola Road area of DeKalb County, SAC input suggested two versions of the Mainline Alignments identified earlier in Tier 1 Screening: one to run parallel to I-20 and the other to deviate from I-20 at Snapfinger Woods Drive to and re-enter the I-20 alignment east of Panola Road. Maps of the Panola Road service options are provided in **Figures 3.10 and 3.11** in Section 3.3.

2.1.4 Alignments Advancing into Tier 2 Screening

Through the Tier 1 Screening results, the following alignments were carried into Tier 2 Screening:

- Mainline Alignments – All three mainline alignments
- Downtown Connectivity Alignments –
  1) Connection to Five Points and Garnett MARTA stations; and
  2) Connection to Inman Park/Reynoldstown MARTA station and Midtown via BeltLine alignment
- Panola Road Area Service Options – Parallel to I-20

More detail on the Tier 1 Screening results can be found in the *Tier 1and Tier 2 Alternatives Screening Report*.

2.2 Tier 2 Screening Process

The purpose of Tier 2 Screening was to assess the performance of transit technologies on the alignments that advanced from Tier 1 Screening to determine the LPA. This detailed screening process employed a large number of MOEs to help determine the highest performing alternative to be advanced. The Tier 2 Screening utilized every MOE in the Evaluation Framework, and so measured the alternatives in terms of travel times; new access to transit from residences and from transit to employment; connections to existing and planned transit; new travel options; transit boardings, mode share and ridership; service to traditionally underserved populations; support for economic revitalization; consistency with existing plans and transit-supportive land uses and/or planned land uses; costs and cost-effectiveness; impacts to community and natural resources; potential for displacements of residences and businesses compliance with SAC Guiding Principles, and degree of public support. More information on the Tier 2 MOEs assessed can be referenced in the *Evaluation Framework Report*.

The following steps were undertaken in the Tier 2 Screening Process:

- Step 1: Initial Technology Assessment
- Step 2: Development of Tier 2 Transit Alternatives
- Step 3: Identification of LPA through Evaluation of Tier 2 Alternatives

The subsections that follow describe the first two steps in greater detail. Step 3 includes the Tier 2 Screening, which resulted in the selection of a recommended LPA. It should be noted that Step 3 is not discussed within this report, but for those results and further detail, please refer to the separate *Locally Preferred Alternative Report*.

2.2.1 Initial Technology Assessment

Potential premium transit technologies were assessed based on their vehicle characteristics, station stop characteristics, operating service, and capital and operating costs to determine their appropriateness for the alignments resulting from Tier 1 Screening. The technologies assessed included BRT, modern streetcar, LRT, and HRT. The assessment concluded that all technologies with the exception of modern streetcar could meet the overall purpose and need for the project. For further detail on the analysis

results, please refer to the *Transit Vehicle Technology Assessment* Technical Memorandum.

2.2.2 Development of Tier 2 Alternatives

Based on the initial technology assessment, the next step in the Tier 2 process was to match the alignments advancing from Tier 1 Screening to the appropriate technology. Factors considered for determining technologies included operational compatibility with transit connections, environmental and community characteristics of the Tier 2 alignments, and SAC input. The following details these factors for each of the Tier 2 Alternatives. A more detailed description of these alternatives – including their advantages and disadvantages - is provided in Section 4 of this document.

- **HRT 1 – Garnett MARTA Station to Mall at Stonecrest** – HRT was considered for this alignment because of its travel speed and reliability and its compatibility with the existing MARTA system. This service compatibility also alleviated the need to extend the alternative into the Five Points MARTA Station – which also lowered the capital cost of this alternative.

- **LRT 1 – Five Points MARTA Station to Mall at Stonecrest** – LRT was considered along this alignment because it has similar service and footprint characteristics as HRT. However, given the difference in technology, this alternative would need to be extended to the Five Points Station to enhance connectivity to the East-West Line and Atlanta Streetcar. Nevertheless, the capital costs for LRT are much less than HRT.

- **BRT 1 – Five Points MARTA Station to Mall at Stonecrest** – BRT was considered along this alignment because it has similar service and footprint characteristics as HRT and LRT. Like LRT, this alternative would need to be extended to the Five Points Station to enhance transit connectivity. However, the capital costs for BRT are less than LRT and HRT.

- **HRT 2 – Edgewood/Candler Park MARTA Station to Mall at Stonecrest** – HRT was considered for this alignment because it would leverage the existing MARTA HRT infrastructure between the Edgewood/Candler Park and Inman Park/Reynoldstown MARTA stations and accommodate the tunnel required for this alignment to avoid historic properties.

- **LRT 2 – North Avenue via BeltLine Alignment to Inman Park/Reynoldstown MARTA to Mall at Stonecrest** – LRT was considered for this alignment due to its linkage with the BeltLine alternative, which has already been determined by MARTA to accommodate LRT technology.

- **HRT 3 – Indian Creek MARTA Station to Mall at Stonecrest** – HRT was considered for this alignment primarily because of its ability to leverage existing MARTA HRT infrastructure.

2.2.3 No Build and TSM Alternatives

In addition to the Build Alternatives, two additional alternatives were examined in the Tier 2 Screening. These included the No Build Alternative and Baseline/TSM Alternative. The FTA requires that these alternatives are developed and assessed in comparison to the Build Alternatives to fully understand the actual benefits of a proposed alternative. The No Build Alternative assumed no transportation improvements in the corridor, with the

exception of currently funded and committed projects. Only projects that have committed funding in the region's TIP were included in this alternative. This alternative served as a comparison point for all other alternatives.

The other comparative alternative required by the FTA is the Baseline/TSM Alternative, which gauges the benefits of relatively low-cost transit improvements in the study area. It was intended to make more efficient use of the transit infrastructure already in place. This alternative represented the optimal modifications to the existing transit system not involving the construction of new fixed guideway transit. Both the No Build and Baseline/TSM Alternatives are described in further detail in Section 5 of this report.

2.3 Station Areas

In its December 2010 meeting, the SAC was tasked with the identification of potential stations for Tier 2 alignments and also asked to identify activity centers within the study area in need of new or improved transit service. SAC members were then asked to divide potential station locations into three categories of importance:

- Primary Stations: These are stations that should definitely be included in a new transit system along I-20
- Secondary Stations: These stations would be nice to have but were not critical
- Aspirations Stations: These stations would be developed if cost were no obstacle

It should be noted that all of the aspiration stations were located in Rockdale County, which is outside of the MARTA service area. For the Tier 1 Screening, only primary stations were assumed as part of the mainline alternatives. For the Tier 2 Screening, the primary stations were analyzed where feasible. In order to provide the necessary access to transit identified as a project goal, the Glenwood Avenue station and Lithonia Industrial/Evans Mill station were added. The end result of the exercise is presented in **Table 2-1** and represented graphically in **Figure 2-1**.

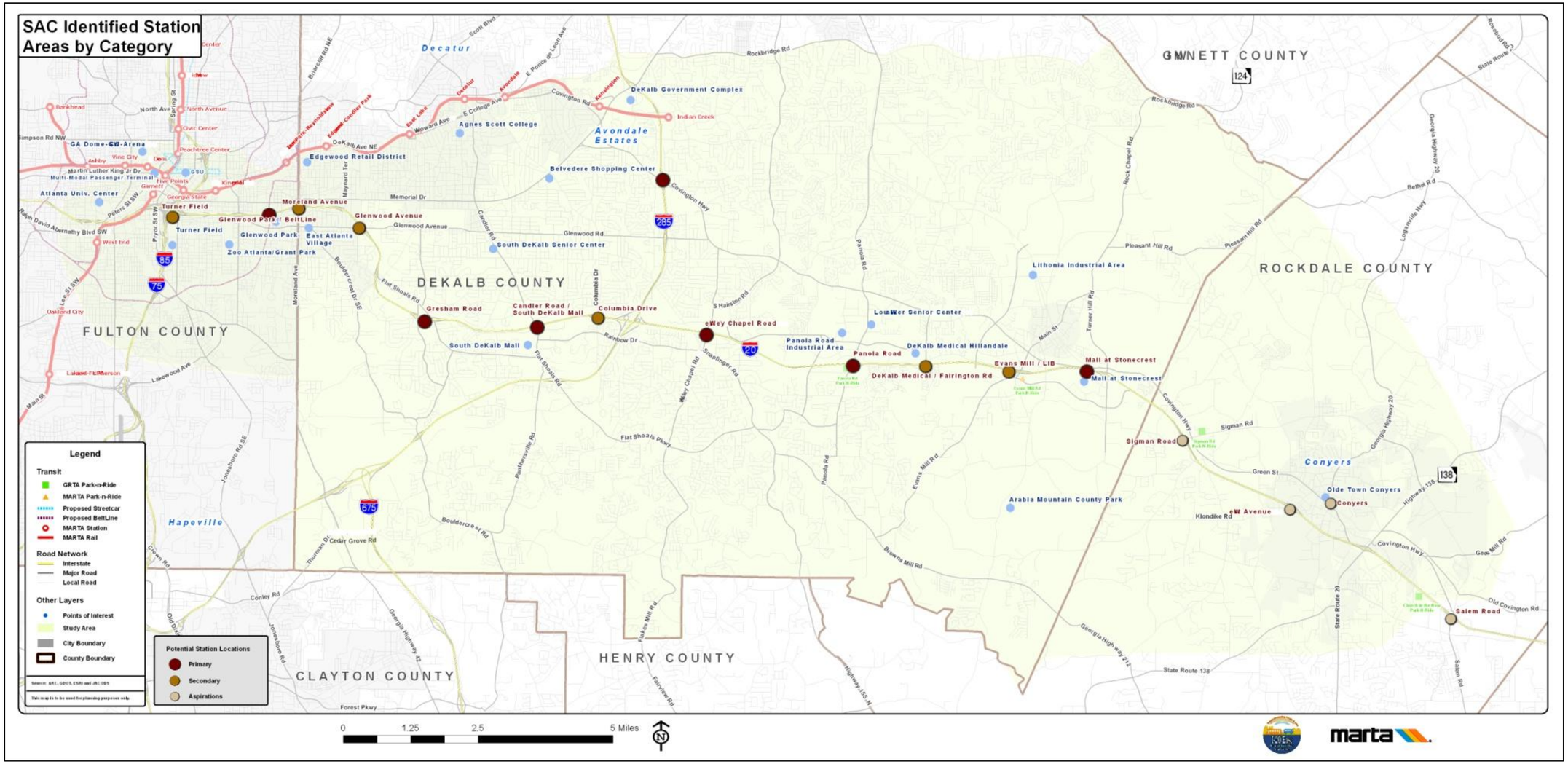
Table 2-1: Overview of Station Areas by Category

Primary Stations		
Station Name	**Description**	**Feeder Bus Service**
Glenwood Park/BeltLine Station	This station was identified by SAC members as being a primary station because it provided a connection to the proposed BeltLine. While there was discussion of a station at Moreland Avenue instead, the connection with BeltLine was deemed more important, thus, this station was identified as being primary. Furthermore, this station location is between Grant Park and East Atlanta Village, thus providing the best access to the greatest number of area residents.	Route 4 Route 74 Route 34 Route 107
Gresham Road/Flat Shoals Road Station	This activity center was identified as a primary station because of the businesses it would serve at this location. It was also identified as primary because of the potential for the transit station to serve as a catalyst for redevelopment in this underdeveloped activity center.	Route 9 Route 34 Route 24 Route 74
Candler Road Station	This location was identified as a primary station because it would serve the Gallery at South DeKalb Mall as well as multiple other businesses in the important activity center. Furthermore, multiple local bus routes provide service to this area. The potential for redevelopment around the transit station was also identified as a key element.	Route 15 Route 74 Route 186 Route 34 Route 114
Wesley Chapel Road Station	This location was identified as a primary station because it would serve multiple businesses in the important activity center. This location recently underwent an LCI study which identified transit and transit oriented development as critical to the long term viability of this activity center. The potential for redevelopment around the transit station was also identified as a key element.	Route 86 Route 186 Route 111
Panola Road Station	This location was identified as a primary station because it would serve multiple businesses in the important activity center. This location is also the current site for the GRTA park and ride lot.	Route 86 Route 186 Route 117
Mall at Stonecrest Station	This location was identified as a primary station because it would serve the Mall at Stonecrest as well as multiple other businesses in the important activity center. With large areas or undeveloped land surrounding this location, it was also identified that this station could be a catalyst for significant transit oriented development.	Route 86 Route 115 Route 111 Route 116
Secondary Stations		
Station Name	**Description**	**Feeder Bus Service**
Turner Field Station	Turner Field was identified as an important station but one that would not serve commuters on a daily basis. Thus, it was identified as a secondary station. The ability to serve Turner Field during Atlanta Braves games was seen as real benefit for the alternatives that connect directly into downtown.	N/A
Moreland Avenue Station	This location was identified as important; however, it was selected as a secondary station because SAC members felt the Glenwood Park/BeltLine station was more important because it provided a connection to the proposed BeltLine.	Route 4 Route 74 Route 34 Route 107
Glenwood Avenue Station	This location was identified by several SAC members. However, due to the residential nature of this location, most SAC members felt it should be classified as a secondary station.	Route 107
Columbia Drive Station	This location was identified by several SAC members. However, due to the residential nature of this location, most SAC members felt it should be classified as a secondary station. DeKalb County planning staff also felt this location was not appropriate for a transit station due to the residential nature of the area.	Route 114

Table 2-1: Overview of Station Areas by Category (continued)

Secondary Stations (continued)		
Station Name	**Description**	**Feeder Bus Service**
DeKalb Medical/Fairington Road Station	This station was identified due to its proximity to the DeKalb Medical Center at Hillandale. It was not recommended as primary since it was not in close proximity to major roadways and because the medical center could be served by local bus service from the Panola Road station.	Route 86 Route 111
Lithonia Industrial/Evans Mill Road Station	This station was identified but classified as secondary since it did not serve a large activity center.	Route 86 Route 111
Aspirations Stations		
Station Name	**Description**	**Feeder Bus Service**
Sigman Road Station	While identified as a station location by SAC members, this station is located in Rockdale County outside the current MARTA service area, so it has been classified as an aspirations station.	N/A
West Avenue Station	While identified as a station location by SAC members, this station is located in Rockdale County outside the current MARTA service area, so it has been classified as an aspirations station.	N/A
Downtown Conyers Station	While identified as a station location by SAC members, this station is located in Rockdale County outside the current MARTA service area, so it has been classified as an aspirations station.	N/A
Salem Road Station	While identified as a station location by SAC members, this station is located in Rockdale County outside the current MARTA service area, so it has been classified as an aspirations station.	N/A

Figure 2-1: Map of Station Areas by Category



3.0 TIER 1 ALTERNATIVES

Tier 1 Alternatives were developed to identify all feasible transit alignments in the corridor and connections to central Atlanta. Transit technologies, or transit modes, were not evaluated or compared as part of the Tier 1 analysis. Rather, the purpose of the Tier 1 Screening was to identify the best performing alignments. The following section provides a detailed description of the alternatives examined in the Tier 1 Screening. These include the three mainline alignments, eight downtown connectivity alignments, two Panola Road service options, and the station areas.

3.1 Mainline Alignment Alternatives

This section provides a detailed description of the three mainline alignments that were subject to Tier 1 Screening:

- **Parallel I-20 Alignment** - Parallel to I-20 from the Mall at Stonecrest to downtown Atlanta.
- **Connection to Edgewood/Candler Park Station Alignment** - Parallel to I-20 from the Mall at Stonecrest to the Edgewood/Candler Park MARTA station.
- **Heavy Rail Extension from Indian Creek** - Extension of the East-West Line from the Indian Creek MARTA Station south along I-285 to I-20 and then east to the Mall at Stonecrest along I-20.

A map of these alignments is provided in **Figure 3-1**.

3.1.1 Mainline Alignment 1 - Parallel I-20 Alignment

The Parallel I-20 Alignment would run adjacent to I-20 from the Mall at Stonecrest to downtown Atlanta and would have the potential to connect to the MARTA rail system at various locations in central Atlanta. These potential connections are detailed in Section 3.2.

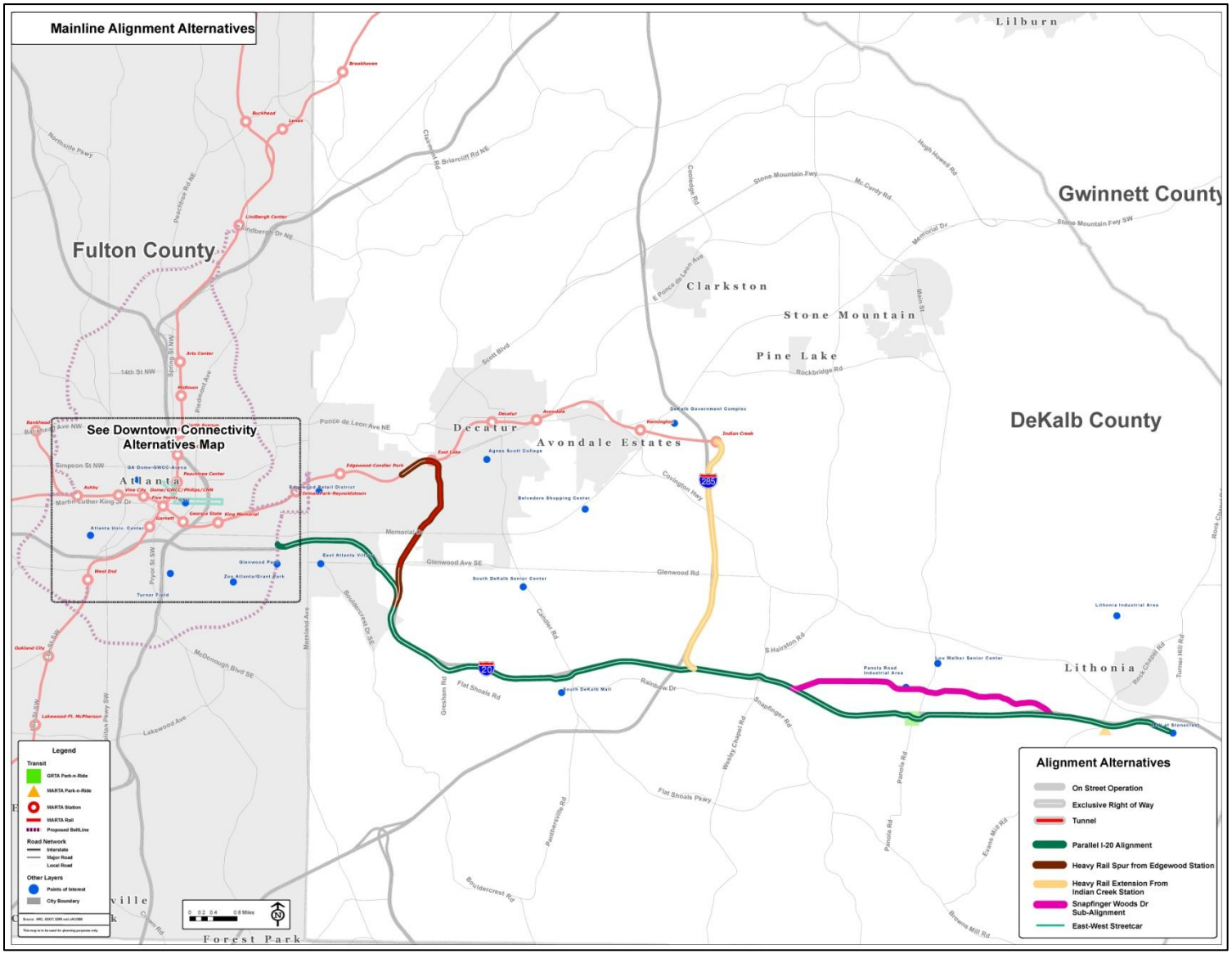
This alignment would be primarily located in Georgia Department of Transportation (GDOT) right-of-way along I-20. Given the limited right-of-way in numerous locations and development in close proximity to I-20, a number of residential and commercial displacements are likely with this alignment. In the vicinity of Glenwood Avenue through downtown Atlanta it will be required to locate the transit-way on an elevated structure in the median of I-20 due to the lack of right-of-way and abutting historic neighborhoods.

Potential Alignment Advantages and Disadvantages

Potential advantage:

- Would serve a number of activity centers along I-20 inside I-285 including South DeKalb Mall/Candler Road, Gresham Road/Flat Shoals Road, Grant Park, East Atlanta Village and Glenwood Park. This, in turn, equates to greater ridership potential. Additionally, this alternative would have a direct connection with the proposed Atlanta BeltLine.

Figure 3-1: Mainline Alignment Alternatives



Potential disadvantages:

- It is likely that the initial construction phase would only extend to the Gallery at South DeKalb and not extend outside I-285.
- Significant engineering and environmental constraints associated with a connection into downtown Atlanta.
- Higher total costs associated with the implementation of more than 18 miles of new transit line.
- Potential for significant impacts to historic districts inside I-285.
- Potential for high number of commercial and residential displacements.

3.1.2 Mainline Alignment 2 - Connection to Edgewood Station Alignment

The Connection to Edgewood Station Alignment would run adjacent to I-20 from the Mall at Stonecrest and diverge from I-20 near Maynard Terrace. It would travel north through the Kirkwood Neighborhood and connect to the Edgewood/Candler Park MARTA Station. Given its potential for impacts to the historic Kirkwood Neighborhood, the portion of the alignment from I-20 to the Edgewood/Candler Park Station was assumed as a tunnel for Tier 1 Screening.

Potential Alignment Advantages and Disadvantages

Potential advantages:

- Service to activity center areas of South DeKalb Mall/Candler Road and Gresham Road/Flat Shoals Road.
- Avoids the engineering and cost issues associated with connecting directly into downtown Atlanta.

Potential disadvantages:

- Costs and complex construction associated with extensive tunneling through the Kirkwood Neighborhood.
- Potential neighborhood opposition over potential for noise, vibration, or other impacts to historical neighborhoods and community resources in the Kirkwood Neighborhood.
- No direct, premium transit service (e.g., high quality transit, either rail or bus, with rapid travel times and enhanced connectivity to attract new, choice riders) provided to the East Atlanta Village, Glenwood Park, and Grant Park activity centers.

3.1.3 Mainline Alignment 3 – HRT Extension from Indian Creek

The HRT Extension from Indian Creek would include an extension of the existing MARTA heavy rail line from the Indian Creek Station that would run south adjacent to I-285 and then east adjacent to I-20 to the Mall at Stonecrest.

Potential Alignment Advantages and Disadvantages

Potential advantages:

- Initial construction phase would extend MARTA rail from the Indian Creek Station to Wesley Chapel Road, thus providing rapid transit service to areas outside I-285 in an expedient manner.
- Lower total costs associated with the implementation of just over 12 miles of new transit line.
- Cost savings associated with the use existing infrastructure, e.g., the MARTA heavy rail system.

Potential disadvantages:

- No direct premium transit service provided to the South DeKalb Mall/Candler Road, Gresham Road/Flat Shoals Road, East Atlanta Village, Glenwood Park, and Grant Park activity centers.
- Potential for longer travel times to downtown Atlanta due to numerous stations along East-West line.

3.2 Downtown Connectivity Alternatives

This section defines the eight potential Downtown Connectivity Alternatives (DCAs) that were examined in Tier 1 Screening to connect the Parallel I-20 Alignment into the MARTA heavy rail system in central Atlanta. All downtown connectivity alternatives would also provide a connection to the proposed Atlanta BeltLine. These are displayed collectively in **Figure 3-2**. Individual maps for each downtown connectivity alternative are provided in the following subsections.

3.2.1 DCA 1 – King Memorial Station via BeltLine

This alignment (**Figure 3-3)** would deviate from the Parallel I-20 Alignment at the Bill Kennedy Way overpass where it would operate in mixed traffic on Bill Kennedy Way north to Memorial Drive, then west along Memorial Drive, then north along Grant Street where it would connect to the King Memorial MARTA Station. This alternative would include a stop at Boulevard. Within the City of Atlanta, DCA 1 would operate in mixed traffic because there is insufficient right-of-way to provide exclusive lanes.

Potential Connection Advantages and Disadvantages

Potential advantages:

- Lower capital costs due to on-street operation.
- Limited need for elevated structures.

Potential disadvantages:

- Potential delay due to congestion on surface streets.
- Longer travel times to access the MARTA Red and Gold Lines.

Figure 3-2: Downtown Connectivity Alternatives

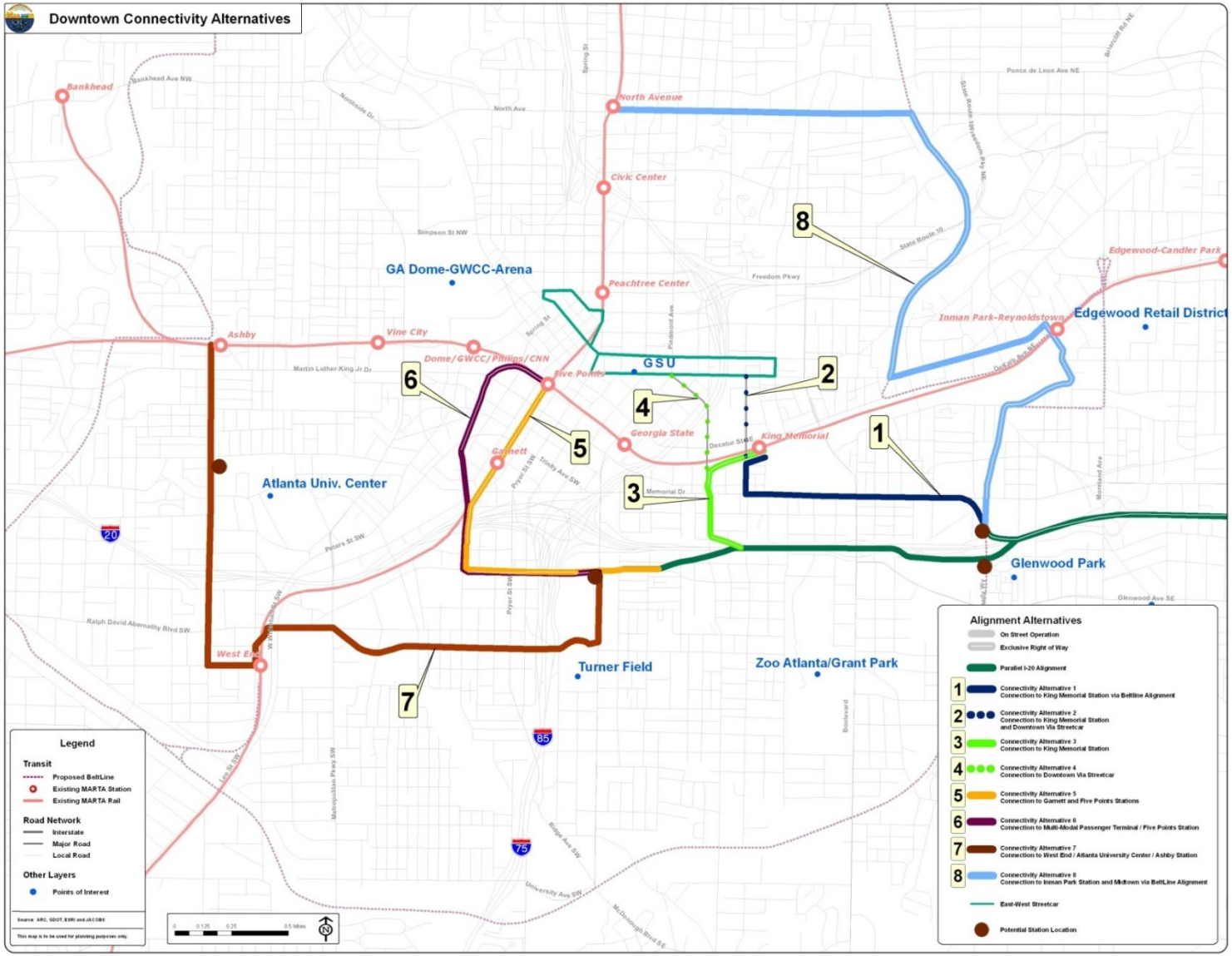
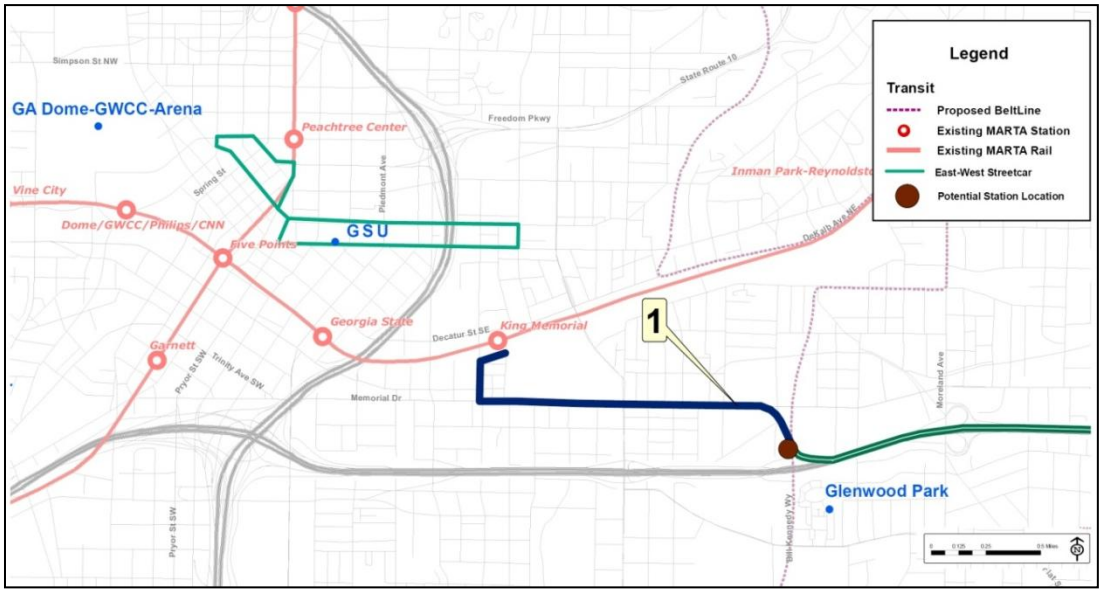


Figure 3-3: Downtown Connectivity Alternative 1



3.2.2 DCA 2 – King Memorial Station via Streetcar

This alternative (**Figure 3-4)** would consist of the same alignment as DCA 1, but it would continue north along Grant Street, which transitions to Hilliard Street. It is assumed that the technology selected would operate in mixed traffic. At Edgewood Avenue, inbound service would follow the Atlanta Streetcar alignment to Centennial Olympic Park via Edgewood Avenue, Jackson Street, Auburn Avenue, Peachtree Street, Ellis Street, Carnegie Way, Andrew Young International Boulevard, Centennial Olympic Park Drive and Luckie Street. From Centennial Olympic Park, service would operate via Luckie Street, Auburn Avenue, Park Place and Edgewood Avenue to Hilliard Street.

This alternative would allow riders to transfer to the East-West Line at King Memorial Station and the North-South Line at Peachtree Center Station. This alternative would also include stations or stops at Boulevard, Piedmont Avenue at Edgewood Avenue, Jackson Street, Piedmont Avenue at Auburn Avenue, and Ellis Street.

Potential Connection Advantages and Disadvantages

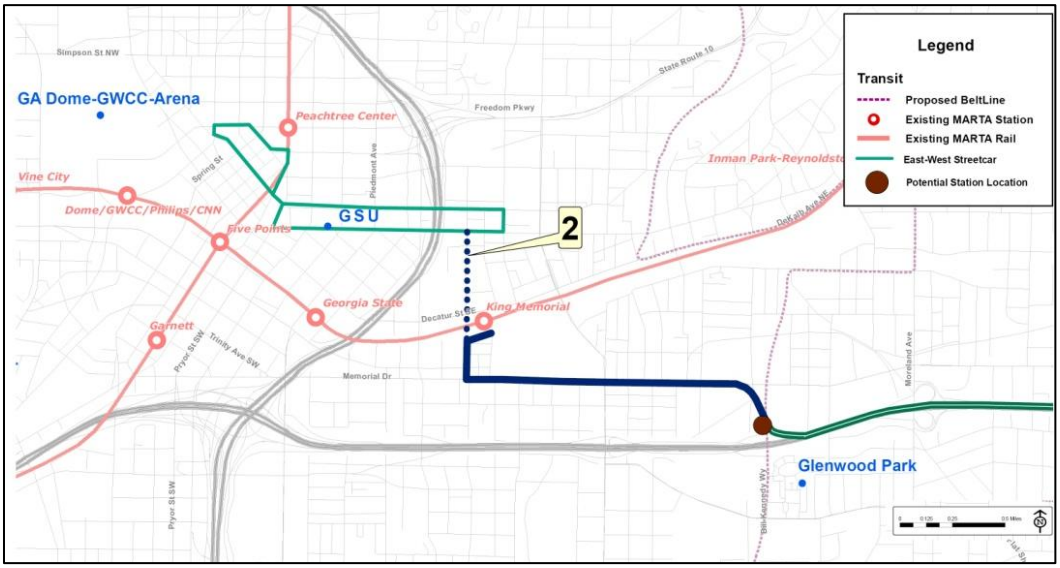
Potential advantages:

- Lower capital costs due to on-street operation and limited elevated structures
- Ability to serve major points of interest along the Streetcar alignment
- Connection to MARTA North-South and East-West rail lines

Potential disadvantages:

- Potential delay due to congestion on surface streets
- Utilization of the relatively lengthy Streetcar alignment would likely lead to longer travel times to MARTA North-South lines than other Downtown Connectivity Alternatives

Figure 3-4: Downtown Connectivity Alternative 2



3.2.3 DCA 3 – King Memorial Station via Hill Street

This alternative (**Figure 3-5)** would diverge from I-20 at Hill Street and run north along Hill Street in on-street operation. It would veer off from Hill Street in exclusive right-of-way and connect with the King Memorial Station. This alternative would connect to the East-West line, but would require a transfer at King Memorial Station.

Potential Connection Advantages and Disadvantages

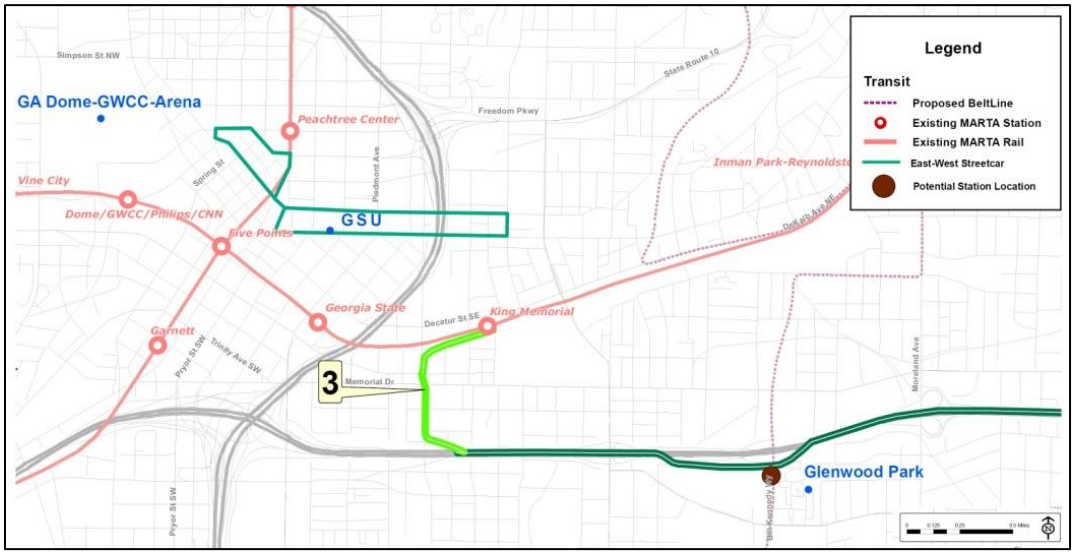
Potential advantages:

- Moderate costs due to elevated structures along I-20
- Offers faster access to MARTA East-West heavy rail line than other Downtown Connectivity Alternatives.

Potential disadvantages:

- Potential delay due to congestion on surface streets
- No direct access to MARTA North-South heavy rail line

Figure 3-5: Downtown Connectivity Alternative 3



3.2.4 DCA 4 – Downtown via Streetcar

DCA 4 (**Figure 3-6**) would deviate from I-20 at Hill Street and run north along Hill Street with street-running operation. It would include a station at Decatur Street and Hill Street. This alignment would tie into the Atlanta Streetcar alignment at Edgewood Avenue. The alignment would run along Edgewood Avenue, Jackson Street, Auburn Avenue, Park Place, Peachtree Street, Ellis Street, Carnegie Way, Margaret Mitchell Square, Andrew Young International Boulevard, Centennial Olympic Boulevard and Luckie Street. It would feature stops at Piedmont Avenue at Edgewood Avenue, Jackson Street, Piedmont Avenue at Auburn Avenue, and Ellis Street.

This alternative would connect with the Peachtree Center MARTA Station at Peachtree Street and Ellis Street. This alternative would provide a connection to the MARTA North-South line, but would require a transfer at the Peachtree Center Station.

Potential Connection Advantages and Disadvantages

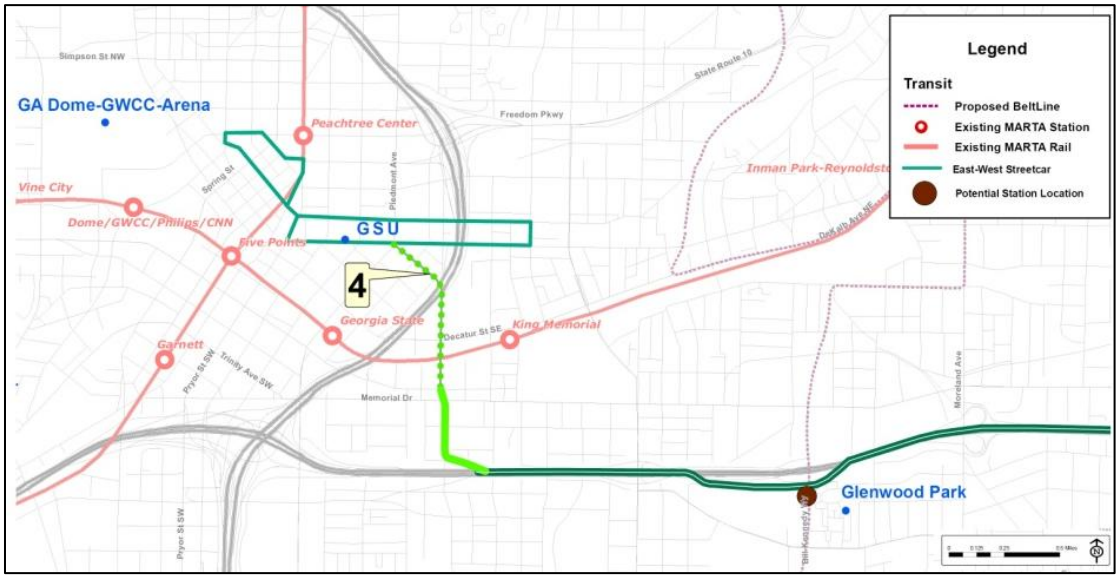
Potential advantages:

- Moderate costs due to elevated structures along I-20
- Ability to serve major points of interest along the Streetcar alignment

Potential disadvantages:

- Potential delay due to congestion on surface streets
- No direct access to MARTA East-West heavy rail line
- Longer travel times to access the MARTA North-South heavy rail via the Streetcar alignment

Figure 3-6: Downtown Connectivity Alternative 4



3.2.5 DCA 5 – Garnett and Five Points

DCA 5 (**Figure 3-7**) would exit the I-20 right-of-way at Hill Street and travel along Glenwood Avenue to Fulton Street in exclusive right-of-way on elevated structure. This alternative would include a station at Fulton Street and Capitol Avenue to serve Turner Field. At Windsor Street it would turn north running on structure in exclusive right-of-way where it would connect to Garnett Station and then in an exclusive transit way it would travel along Broad Street where it would terminate at the Five Points Station. This alternative would provide a direct connection to the North-South and East-West line.

Potential Connection Advantages and Disadvantages

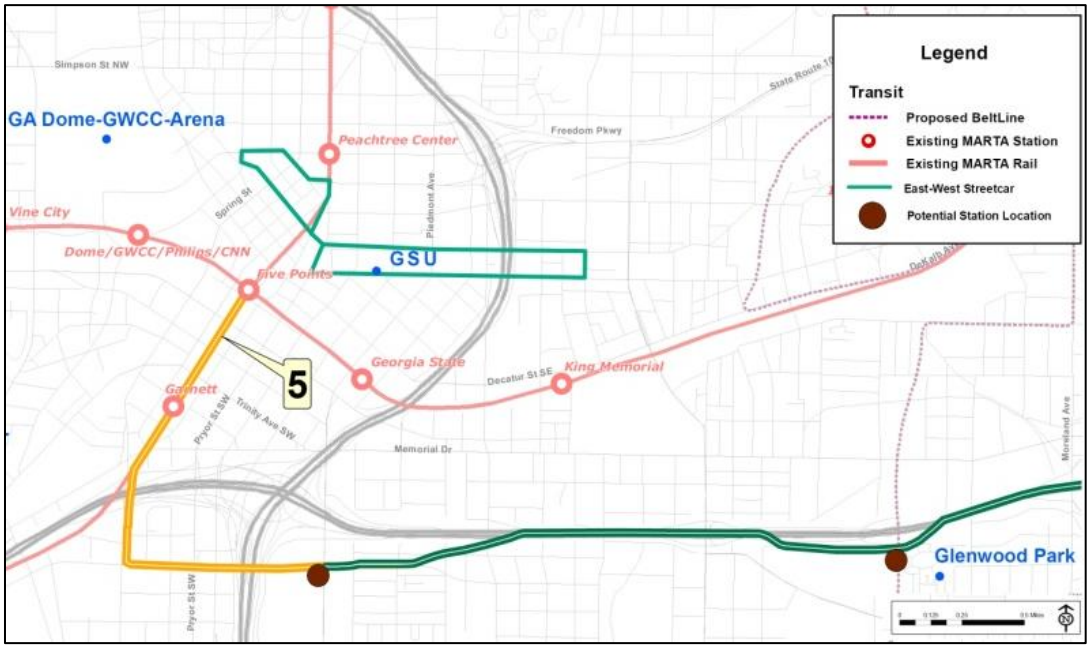
Potential advantages:

- Direct connection to MARTA North-South and East-West rail lines
- Reliable travel times due to operation in designated right-of-way, rather than in mixed traffic on surface streets.
- Potential Station at Turner Field

Potential disadvantage**:**

- Higher costs associated with significant elevated structure through downtown

Figure 3-7: Downtown Connectivity Alternative 5



3.2.6 DCA 6 – Multi-Modal Passenger Terminal/Five Points

From I-20 East to Windsor Street, the DCA 6 alignment (**Figure 3-8**) is identical to DCA 5. DCA 6, like DCA 5, would exit the I-20 right-of-way at Hill Street and travel along Glenwood Avenue to Fulton Street, then turn north at Windsor Street, all in exclusive right-of-way on elevated structure. Whereas DCA 5 connects to Garnett Station, DCA 6 would continue north, in mixed traffic, on Windsor Street which becomes Spring Street. This alternative would connect to the proposed Multi-Modal Passenger Terminal (MMPT), which would have direct connection into the Five Points Station. The MMPT is planned as a major transportation hub downtown that would provide a connection between express buses, local buses, streetcar, MARTA rail, and potential high-speed and commuter rail lines.

Potential Connection Advantages and Disadvantages

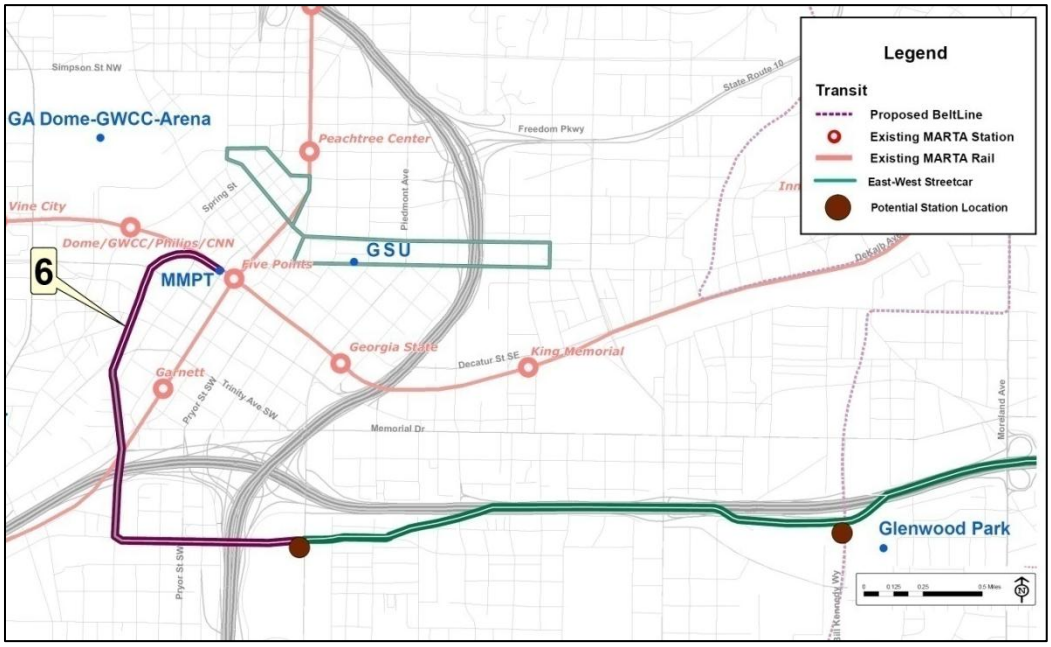
Potential advantages:

- Direct connection to potential MMPT
- Direct connection to MARTA North-South and East-West rail lines
- Potential Station at Turner Field

Potential disadvantages:

- Higher costs associated with extensive elevated structure.
- Potential for delay due to operation in mixed traffic on Windsor Street/Spring Street

Figure 3-8: Downtown Connectivity Alternative 6



3.2.7 DCA 7 – West End Station/Atlanta University Station/Ashby

DCA 7 (**Figure 3-9**) would deviate from I-20 and follow Glenwood Avenue to Fulton Street. The alignment would then turn south along Capitol Avenue operating in mixed traffic. At Georgia Avenue the alignment would turn west onto Ralph David Abernathy Boulevard, then south along Whitehall Street to the West End MARTA Station. From there, it would extend north along Lee Street to Oglethorpe Avenue, then north along Joseph Lowery Boulevard to serve the Atlanta University Center. This alignment would continue north along Joseph Lowery Boulevard and terminate at the Ashby MARTA Station. DCA 7 would feature a station at Turner Field, located at Capitol Avenue and Fulton Street, a stop at Ralph David Abernathy Boulevard and McDaniel Street, and a connection to the West End MARTA Station at Glenn Street and Lee Street. A station at Fair Street would be provided, which would be within convenient walking distance to Morehouse College, Spelman College, Clark Atlanta University, and Morris Brown College.

Potential Connection Advantages and Disadvantages

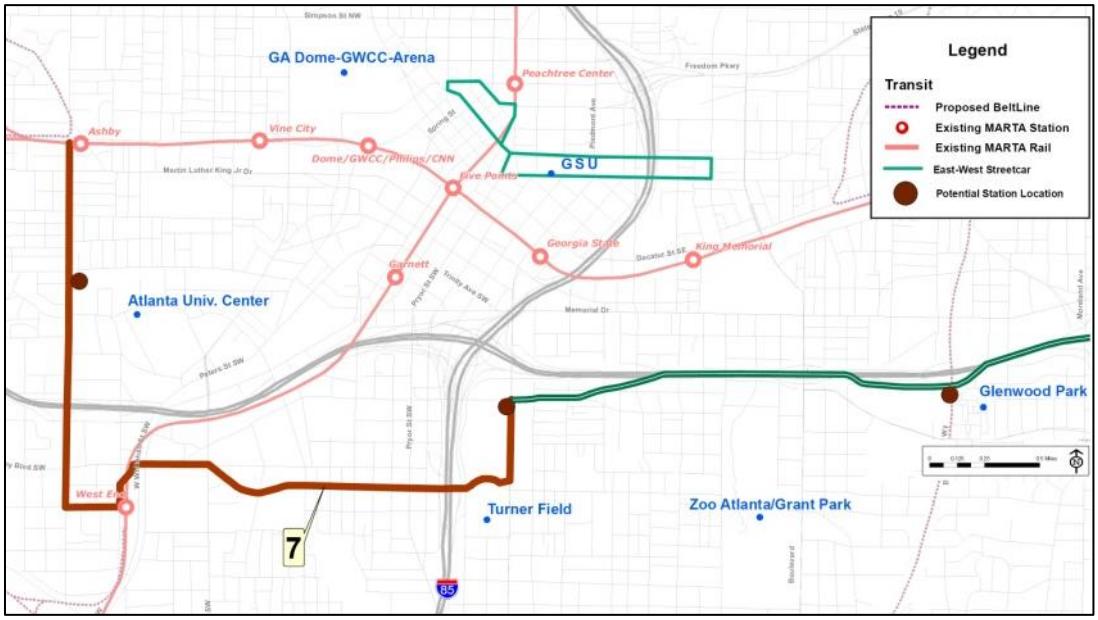
Potential advantages:

- Connection to Atlanta University Center
- Connection to MARTA North-South and East-West rail lines
- Potential station at Turner Field

Potential disadvantages:

- Potential for delay due to congestion on surface streets
- Longer travel times to access MARTA North-South and East-West rail lines

Figure 3-9: Downtown Connectivity Alternative 7



3.2.8 DCA 8 – Inman Park Station and Midtown via BeltLine

DCA 8 (**Figure 3-10**) would diverge from I-20 at Bill Kennedy Way and follow the proposed BeltLine alignment north to connect with the Edgewood/Inman Park MARTA Station. From there it would continue north along the proposed BeltLine alignment to the North Avenue Station, where passengers could transfer to the existing MARTA North-South line. This alignment would feature stations at North Highlands Avenue at Inman Park Village and North Avenue at Glen Iris Drive. Service would operate in mixed traffic along North Avenue.

Potential Connection Advantages and Disadvantages

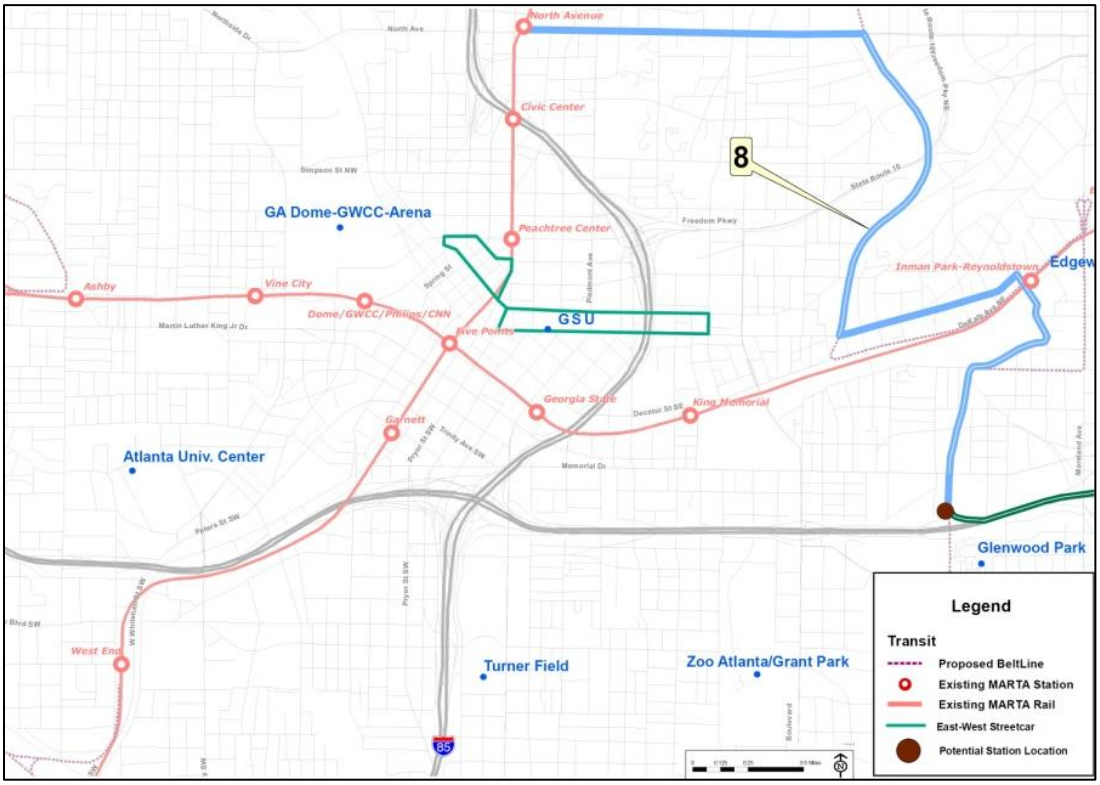
Potential advantages:

- Lower costs due to on-street operation and use of BeltLine right-of-way
- Connection to points of interest along the BeltLine alignment

Potential disadvantages:

- Potential for delay due to congestion on surface streets
- Longer travel times to access the MARTA North-South rail line

Figure 3-10: Downtown Connectivity Alternative 8



3.3 Panola Road Area Service Options

Two potential service options were identified in the Panola Road area: an alignment adjacent to I-20 and an alignment that would run along Snapfinger Woods Drive.

3.3.1 Parallel I-20 Service Option

This sub-alignment (**Figure 3-11**) would run, in a dedicated transitway, parallel to I-20 through the Panola Road Area and would feature a station at Panola Road. This alignment is identical to the Parallel I-20 Alignment in the Mainline Alternatives, and is included in the Panola Road Area Alternatives to provide a comparison to the Snapfinger Woods Drive Sub-Alignment.

Potential Service Option Advantages and Disadvantages

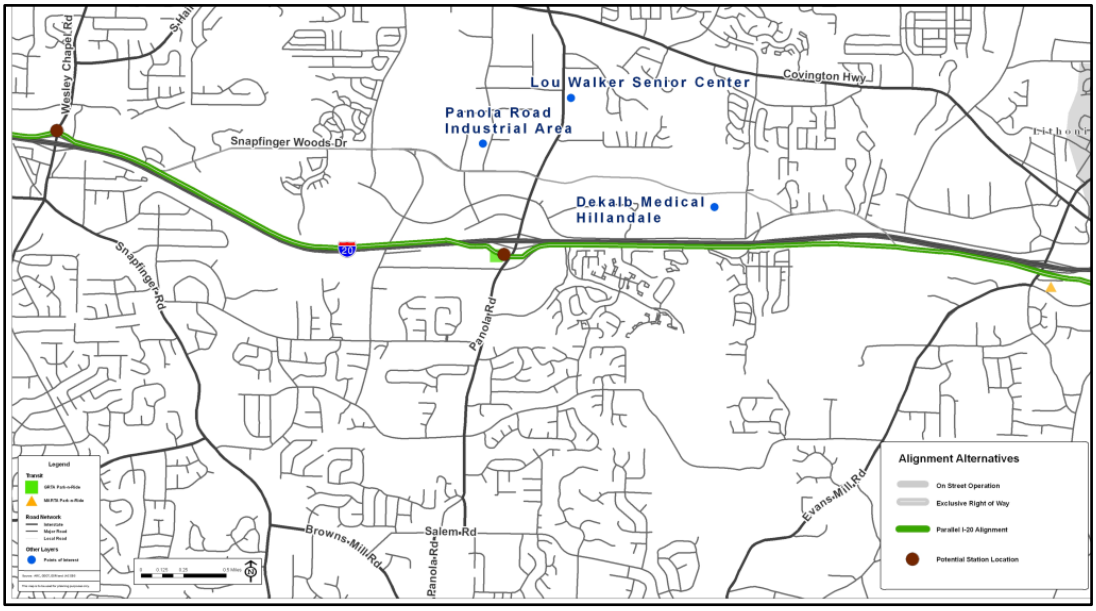
Potential advantages:

- Reduced and more reliable travel times due to dedicated transitway
- Convenient park and ride access for commuters on I-20

Potential disadvantages:

- Lack of direct access to DeKalb Medical Hillandale campus and the Panola Road industrial area
- Higher costs associated with dedicated transitway

Figure 3-11: Parallel I-20 Panola Road Service Option



3.3.2 Snapfinger Woods Drive Service Option

This option was identified to serve employment at businesses along Snapfinger Woods Drive. This service option (**Figure 3-12)** would deviate from I-20 between the Wesley Chapel Road and Panola Road and operate in mixed traffic along Snapfinger Woods Drive until rejoins the Parallel I-20 Mainline Alignment east of DeKalb Medical Parkway.

Potential Service Option Advantages and Disadvantages

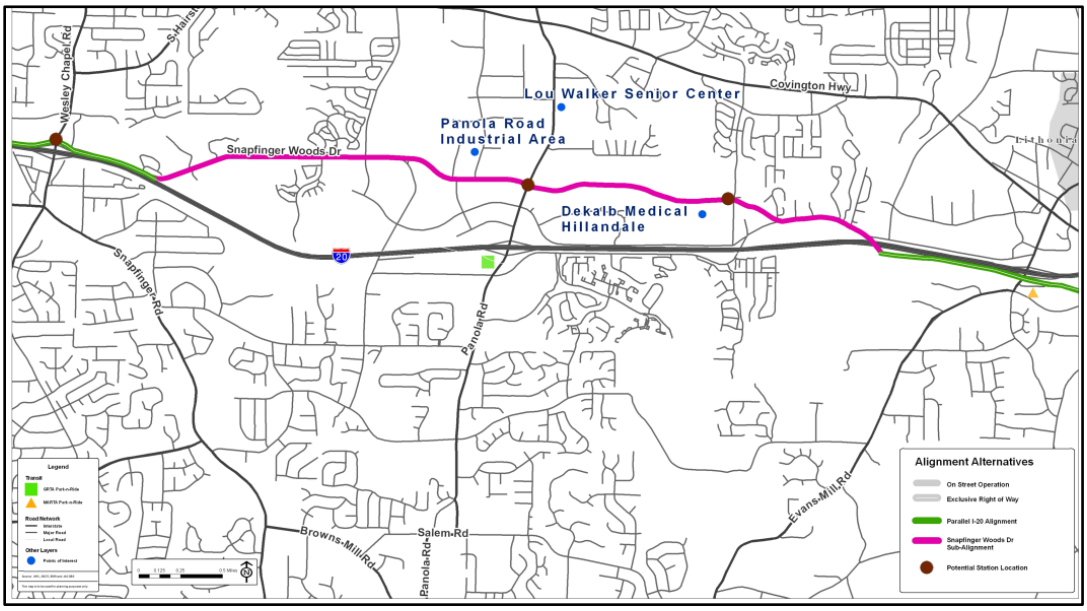
Potential advantages:

- Better serves the DeKalb Medical Hillandale campus
- Better access to employment in the Panola Road Industrial Area
- Lower costs due to on-street operation

Potential disadvantages**:**

- Longer and less reliable travel times due to operation in mixed traffic on Snapfinger Woods Drive
- Less convenient access for commuters on I-20

Figure 3-12: Snapfinger Woods Drive Panola Road Service Option



3.4 Tier 1 Alternative Cost Estimates

The Tier 1 Alternatives cost estimates were high-level conceptual cost estimates. As stated earlier, the Tier 1 Screening was intended to identify the best transit connections between south DeKalb County and central Atlanta. For this reason, all cost estimates were originally prepared assuming LRT as a common transit mode for all alternatives. However, as the alternatives were developed, Mainline Alignments 2 and 3 were identified as being feasible only as extensions of the existing MARTA HRT system. Thus, cost estimates for these mainline alignments were assumed as HRT alternatives and all others were assumed as LRT alternatives. Since the purpose of the Tier 1 Screening was the identification of the best transit connections into downtown Atlanta, stations were not included in Tier 1 Alternative cost estimates.

The cost estimates for the Tier 1 Screening were derived through the utilization of the prescribed methodology in the *Preliminary Order of Magnitude Capital Cost Estimating Methodology* technical memorandum developed to support the I-20 East Transit Initiative. The report provided detailed capital cost estimates for each alternative that utilized technology-based FTA Standard Cost Categories (SCCs) to derive capital costs associated with each of the alternatives specific to items such as guideway and track elements, maintenance facility requirements, vehicle costs, etc. These estimates were then adjusted to reflect costs specific to the Atlanta region. This report has been attached as **Appendix A**.

Table 3-1 presents the concept level cost estimates for the Tier 1 Alternatives. Concept level cost estimates were developed using FTA standard cost categories for reporting, estimating and managing capital costs for New Starts projects. Please refer to the *Preliminary Order of Magnitude Capital Cost Estimating Methodology* technical memorandum for more detail on the methodology employed to develop these estimates.

Table 3-1: Tier 1 Concept Level Cost Estimates

Alternative #	Alternative Name	Approximate Alignment Length	ROW Cost	Capital, Professional, Finance, & Contingency Costs	Total Cost
Mainline Alignment Alternatives					
Mainline Alternative 1	Connection Directly to Downtown Atlanta	16.8 miles	$199.8M	$2,221M	**$2,421M**
Mainline Alternative 2	Connection to Edgewood Station	17.5 miles	$78.6M	$2,777M	**$2,856M**
Mainline Alternative 3	Heavy Rail Extension from Indian Creek	12.3 miles	$53.3M	$1,697M	**$1,750M**
Downtown Connectivity Alternatives					
DCA 1	Connection to King Memorial Station via Memorial Drive	1.4 miles	$80.8M	$1,871M	**$1,952M**
DCA 2	Connection to King Memorial Station and Downtown via Streetcar Alignment	1.8 miles	$80.8M	$1,881M	**$1,962M**
DCA 3	Connection to King Memorial Station	1.9 miles	$186.4M	$2,008M	**$2,194M**
DCA 4	Connection to Downtown via Streetcar	2.2 miles	$143.8M	$2,018M	**$2,162M**
DCA 5	Connection to Garnett and Five Points Stations	3.4 miles	$199.8M	$2,221M	**$2,421M**
DCA 6	Connection to Multi-Modal Passenger Terminal/Five Points Stations	3.5 miles	$197.5M	$2,148M	**$2,346M**
DCA 7	Connection to West End Station/Atlanta University Center/Ashby Station	6.1 miles	$187.2M	$2,144M	**$2,331M**
DCA 8	Connection to Inman Park Station and Midtown via BeltLine Alignment	4.9 miles	$83.7M	$1,988M	**$2,072M**
Panola Road Area Alternatives					
Panola Road Service Option 1	Parallel I-20 Sub-Alignment	16.8 miles	$199.8M	$2,221M	**$2,421M**
Panola Road Service Option 2	Snapfinger Woods Drive Sub-Alignment	16.6 miles	$165.1M	$1,933M	**$2,098M**

4.0 POTENTIAL TRANSIT TECHNOLOGIES CONSIDERED

The I-20 East Transit Initiative conducted an assessment of technologies to determine which transit modes would be appropriate for use in the study area. Based on vehicle characteristics, station and/or stop characteristics, operating service, and capital and operating costs, BRT, LRT, and HRT were recommended for consideration. These modes would be paired with those alignments that advanced from Tier 1 Screening into Tier 2 Screening to form the Tier 2 Alternatives. This section provides an overview of the typical operating characteristics of each of these transit modes. An overview of the transit technology assessment and the recommended modes can be found in the *I-20 East Transit Vehicle Technology Assessment*.

4.1 Bus Rapid Transit

BRT systems combine the service characteristics of rail transit with the flexibility of buses. While it is a relatively new technology, BRT is now being used in many locations and its use is rapidly expanding. BRT uses a system of rubber-tired vehicles operating in dedicated right-of-way (ROW), such as exclusive transitways, in HOV lanes or expressways, in mixed traffic on ordinary streets, or some combination of the three. BRT systems are frequently distinguished from local bus service on the same streets by special branding. These systems also incorporate the use of Intelligent Transportation Systems (ITS) technology for vehicle location, possible use of signal prioritization, and passenger information. A BRT system typically provides a similar level of service to that of a light rail system in terms of service frequency and stop spacing, but provides the flexibility of using buses.

Silver Line BRT - Boston, MA

4.1.1 Vehicle Characteristics

BRT vehicles are rubber-tired vehicles that operate on roadways and do not require tracks or other fixed guideway technology. BRT vehicles range between 40 to 60 feet in length and 10 to 15 feet in height. Vehicle capacities range from approximately 60 to 120 passengers per vehicle, which reflects a combination of seated and standing passengers Maximum vehicle speed generally ranges from 30 to 55 miles per hour along exclusive ROW; however, for in-street operation, maximum operating speeds are similar to that of vehicular traffic along the corridor. The vehicles usually have a distinct identity, to differentiate them from regular bus service, and typically have easy and fast boarding capabilities, including low floors and multiple door entry and exit. Examples of BRT vehicles can be found in Los Angeles, Boston, Pittsburgh, and Honolulu. BRT vehicles can be powered with gas, diesel or with environmentally-friendly alternative fuels, such as compressed natural gas (CNG), or a hybrid technology contained within the vehicle, all of which permit the flexibility to deviate from a fixed route, if necessary.

4.1.2 Station Stop Characteristics

BRT systems frequently have stations that are designed to be distinctive and that provide a high level of passenger comfort and convenience. Features can include enclosed or sheltered waiting areas, seating, lighting, passenger information, ranging from basic signs, maps, and schedules to electronic ITS passenger information systems that provide real-time information on arrival and departure times, concessions and retail, parking, and joint use land development. The stop may also include platforms that could be long enough to accommodate two to three buses at a time, or may simply utilize an existing sidewalk.

Frequently, a defining characteristic of BRT stations is high curb design, which allows for low-floor vehicles to dock to station platforms and provide efficient level boarding and alighting, especially for riders with mobility limitations. Station platforms can also be extended length-wise to allow for multiple vehicle, or articulated vehicle docking.

Stops are generally located along curb lanes and are spaced approximately every ¼ mile in urban areas to 1-mile in suburban areas. BRT stops are spaced farther apart than local stops and are typically sited to serve major trip generators and attractors along a corridor (including at heavy transfer points with crossing local routes).

Park and ride access is an important consideration because it can extend BRT's service area. Park and rides provide access to those that would like to use the service, but are outside of a comfortable walking or bicycling distance from a BRT line. Park and ride facilities are typically located in lower-density, suburban areas.

4.1.3 Operating Service

Different BRT systems may encompass a range of service parameters such as frequency and span of service but typically provide frequent, all-day service and are used in medium to high volume commute routes. Service typically runs seven days a week and operates with peak headways of 10 minutes or less and midday headways of 15 minutes or less. Service hours are typically at least 16 hours a day. One advantage of BRT service is that the buses are not restricted to a specially constructed guideways but can operate on regular streets to provide "one seat" feeder bus service, thus minimizing or eliminating transfers. Ridership can vary, but the minimum number of daily corridor boardings to support the service level inherent to BRT would typically be 5,000 daily passengers.

4.1.4 Capital Costs

Costs for BRT systems vary depending upon the BRT elements being implemented. BRT systems using a dedicated ROW are typically more expensive than arterial median running busways or systems running in mixed traffic. On average, costs range between $2 and $10 million per mile for construction. BRT vehicles can cost between $300,000 and $1 million. BRT is the least expensive transit mode of the three technologies evaluated in Tier 2 Screening, with capital costs ranging from $10-$40 million per mile.

4.2 Light Rail Transit

LRT is a fixed guideway technology that uses electrically powered vehicles. LRT systems are typically electric railways with smaller passenger volumes than HRT. LRT is the technological descendant of streetcars and is in widespread use, but would be a new mode in the Atlanta region. LRT is more flexible than HRT due to its ability to easily maneuver through existing communities. LRT does not require exclusive ROW; it can

operate in mixed traffic, semi-exclusive or exclusive ROW. The alignment can be laid at ground-level, elevated or in tunnels.

LYNX LRT – Charlotte, NC

4.2.1 Vehicle Characteristics

An LRT vehicle typically receives power from an overhead catenary, which allows LRT to be integrated with other at-grade transportation modes and pedestrians. LRT vehicles can also use a third rail supply technology, which is similar to the technology used for the existing MARTA HRT system. LRT vehicles generally average between 50 and 90-feet in length and 8 to 20-feet in height. This type of technology requires between 25 and 30 feet of ROW for two tracks. LRT vehicles have a capacity of up to 250 passengers, both seated and standing with amenities and characteristics varying by vendor. LRT vehicles often run in multiple car trains. Average operating speeds generally range from 20-25 miles per hour (including stops), with maximum speeds up to approximately 55 miles per hour. Examples of LRT vehicles can be found in Houston, Charlotte, Dallas, Denver, and Baltimore. As is stated above there are currently no local example of an LRT system.

4.2.2 Station Stop Characteristics

Light rail transit stops include patron amenities such as shelters, off-vehicle fare dispensing machines, passenger information, benches, lighting and trash collection. Stops are generally spaced every ½ to 2 miles. Platforms are typically 14-inches high and up to 270-feet in length (to accommodate the length of a three-car train).

4.2.3 Operating Service

LRT service generally operates on a daily basis with service frequencies of 10 to 15 minute headways during the peak and non-peak, respectively. Typical daily ridership averages between 15,000 and 60,000 passengers per days. LRT service is suited to medium to high volume commute routes.

4.2.4 Capital Costs

Typical LRT systems range in cost from $20 to $105 million per mile. LRT vehicles can cost between $2 and $4 million per vehicle, depending on the vendor and desired specifications.

4.3 Heavy Rail Transit

HRT systems have proven safe and reliable in a large number of applications throughout the world, including MARTA's existing rail system. HRT is a high speed, high-capacity system, which operates in an exclusive ROW. Heavy rail provides a high level of service and is typically found in densely populated urban centers and in the suburbs as commuter service.

MARTA HRT – Atlanta, GA

4.3.1 Vehicle Characteristics

HRT vehicles operate within a dedicated and grade-separated ROW and are propelled by electricity provided by an exposed top contact third rail located within the track ROW. Washington Metrorail vehicles, which are another good example of HRT, are 75-feet in length and 10-feet in width, and are typically linked in sets of four or six car trains.

HRT vehicles typically can accommodate somewhere between 68 and 120 passengers per vehicle, both seated and standing. The typical operating speed of an HRT system ranges between 30 and 55 miles per hour, with a maximum speed of approximately 70 miles per hour.

4.3.2 Station Stop Characteristics

Platforms are at-grade with the train doors and are 600 feet in length, which allows for expansion to eight car operations. Stations require up and down movement of passengers by way of stairs, escalators, or elevators. Stops have a wide range of amenities including off-board fare collection, shelters, information (including real time), benches, and passenger information. MARTA operates with a paid area that is reached by passing through fare gates. Stops are spaced every ½ mile to approximately three miles, depending on the area being served.

4.3.3 Operating Service

HRT systems have the ability to operate on a frequency of every 3 to 6 minutes during peak hours and every 10 to 15 minutes in the off peak.

4.3.4 Capital Costs

HRT is one of the more expensive transit technologies; therefore, HRT is only implemented where large passenger capacity is warranted. HRT is estimated to cost from $80 to $100 million per mile to construct and the vehicles cost about $2.5 million each, or roughly $15 million for one six-car train.

5.0 DEFINITION OF TIER 2 ALTERNATIVES

5.1 Descriptions of Build Alternatives

The result of the Tier 1 Screening was a set of feasible transit alignments that would connect activity centers along I-20 East Corridor with central Atlanta and the existing MARTA heavy rail system. The Tier 2 Screening paired these alignments with compatible transit technologies, or modes, which are described in Section 4.0. If a given alignment was compatible with multiple transit technologies, it was analyzed with each technology. The transit technologies identified as suitable for this project included HRT, LRT, and BRT. The following section details the Tier 2 Build Alternatives. The *I-20 East Tier 1 and Tier 2 Alternatives Screening Report* provides for a full description of the evaluation and results of the Tier 1 Screening

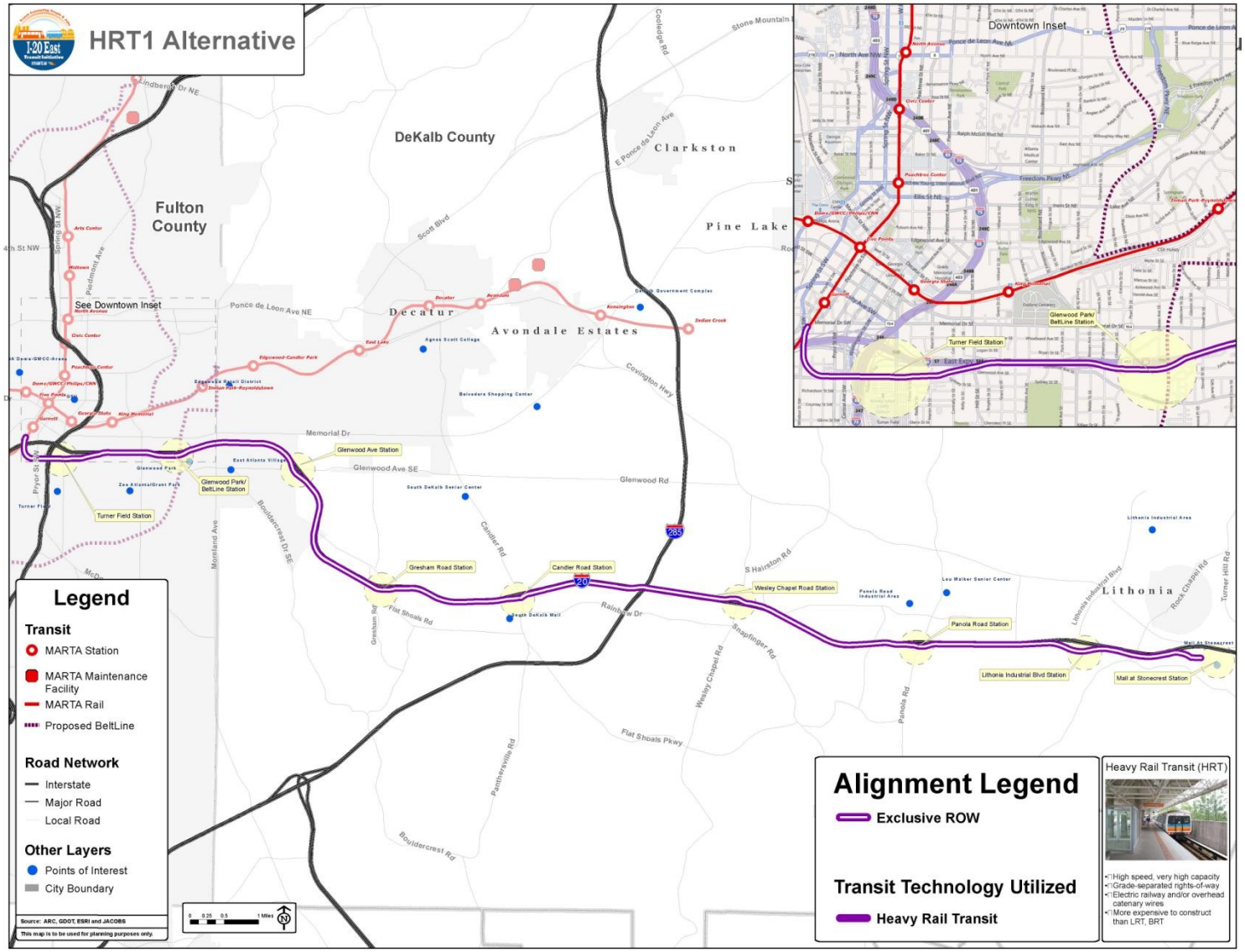
5.1.1 Heavy Rail Transit Alternative 1 (HRT 1)

HRT 1 would consist of a new HRT line that would spur from the existing MARTA rail network just south of the Garnett station. From there, the alignment would extend south parallel to Windsor Street, then east along Glenwood Avenue/Fulton Street, before it would enter the I-20 right-of-way at Hill Street. From there, the alignment would extend east, on structure, in the I-20 median. At Glenwood Avenue, the alignment would transition to one side of the interstate and run parallel to I-20 to the Mall at Stonecrest in eastern DeKalb County.

HRT 1 would include stations at Turner Field, Glenwood Park, Gresham Road, Candler Road, Wesley Chapel Road, Panola Road, and Mall at Stonecrest. The majority of the alignment will run along the southern side of I-20 and cross over to the northern side of I-20 dependent upon available right-of-way. A conceptual map of this alignment is shown in **Figure 5-1**. A map of the HRT 1 Alternative is provided in **Figure 5-2**.

Figure 5-1: HRT 1 Alternative Concept

Figure 5-2: HRT 1 Alternative Map



Operating Characteristics

As shown above, this alternative would tie into the existing MARTA heavy rail system just south of the Garnett Station. This new service would continue north along the Red/Gold line serving all stations in downtown and Midtown Atlanta. The service would continue to the Lenox station where it would utilize a pocket track for a turn around without disruption to existing service. This alternative would serve as a new MARTA heavy rail line. An illustration of the potential service concept is provided in **Figure 5-3**. Other general operating characteristics of the HRT 1 alternative include:

Hours of Operation:

Weekdays: 6 AM – 12 AM

Weekends: 6 AM – 2 AM

Peak Hours (All Other Times Off Peak):

AM Peak: 6 AM – 10 AM

PM Peak: 3 PM – 7 PM

Headways:

Peak Hour: 10 minutes

Off-Peak Hour, Weekends and Holidays: 15 minutes

Vehicles per trip:

6-car trains

5.1.2 Light Rail Transit Alternative 1 (LRT 1)

The LRT 2 Alternative would be LRT service that would operate in-street along Broad Street from Five Points Station to Garnett Station. It would then operate in an exclusive guideway south of Garnett Station and extend south parallel to Windsor Street, then east along Glenwood Avenue/Fulton Street, before it would enter the I-20 right-of-way at Hill Street. From there, the alignment would extend east, on structure, in the I-20 median. At Glenwood Avenue, the alignment would transition to the side of the interstate and run parallel to I-20 to the Mall at Stonecrest in eastern DeKalb County.

This alternative would include stations at Five Points, Garnett, Turner Field, Glenwood Park, Gresham Road, Candler Road, Wesley Chapel Road, Panola Road, and the Mall at Stonecrest. A conceptual map of this alternative is shown in **Figure 5-4**. A map of the LRT 1 Alternative is provided in **Figure 5-5**.

Figure 5-4: LRT 1 Alternative Concept

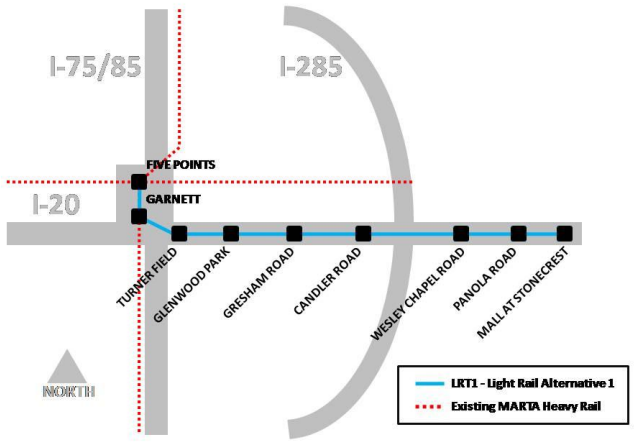
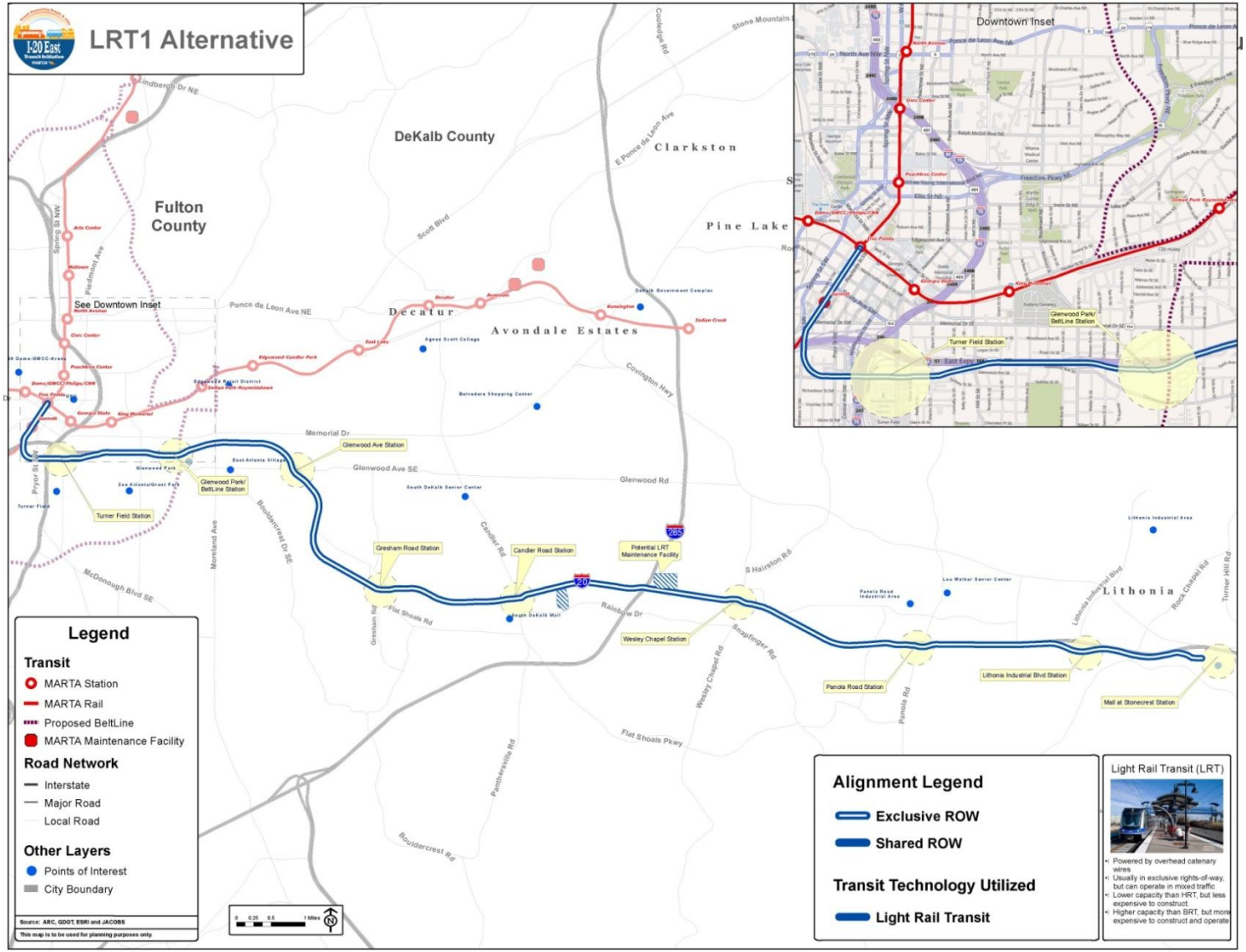


Figure 5-3: HRT 1 Integration with MARTA System

Figure 5-5: LRT 1 Alternative Map



Operating Characteristics

As shown above, this alternative would tie into the existing MARTA heavy rail system at the Garnett Station and run parallel to the HRT alignment to the Five Points Station. As an LRT service, this alternative would be a new MARTA service altogether.

Other general operating characteristics of the LRT 1 alternative include:

Hours of Operation:	Peak Hours (All Other Times Off Peak):
Weekdays: 6 AM – 12 AM	AM Peak: 6 AM – 10 AM
Weekends: 6 AM – 2 AM	PM Peak: 3 PM – 7 PM
Headways:	Vehicles per trip:
Peak Hour: 10 minutes	4-car trains
Off-Peak Hour, Weekends and Holidays: 15 minutes	

5.1.3 Bus Rapid Transit Alternative 1 (BRT 1)

The BRT 1 Alternative would be a BRT line that would operate in-street along Broad Street from Five Points Station to Garnett Station. It would then operate in an exclusive guideway south of Garnett Station and extend south parallel to Windsor Street, then east along Glenwood Avenue/ Fulton Street, before it would enter the I-20 right-of-way at Hill Street. From there, the alignment would extend east, on structure, in the I-20 median. At Glenwood Avenue, the alignment would transition to the side of the interstate and run parallel to I-20 to the Mall at Stonecrest in eastern DeKalb County. A concept of the BRT 1 Alternative is shown in **Figure 5-6**. A map of the BRT 1 Alternative is provided in **Figure 5-7**.

Figure 5-6: BRT 1 Alternative Concept

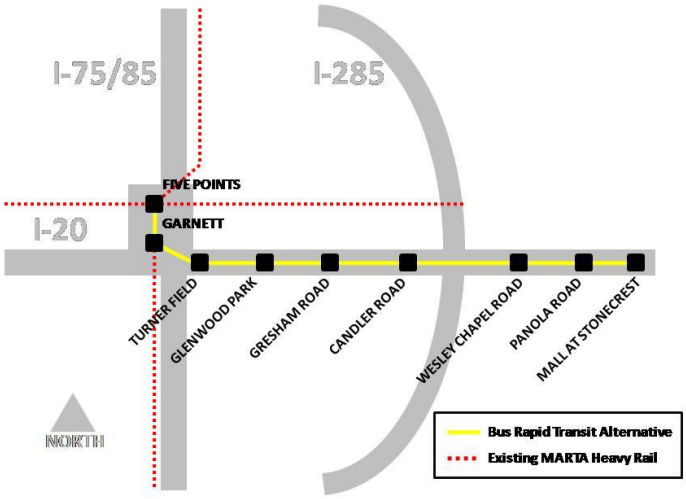
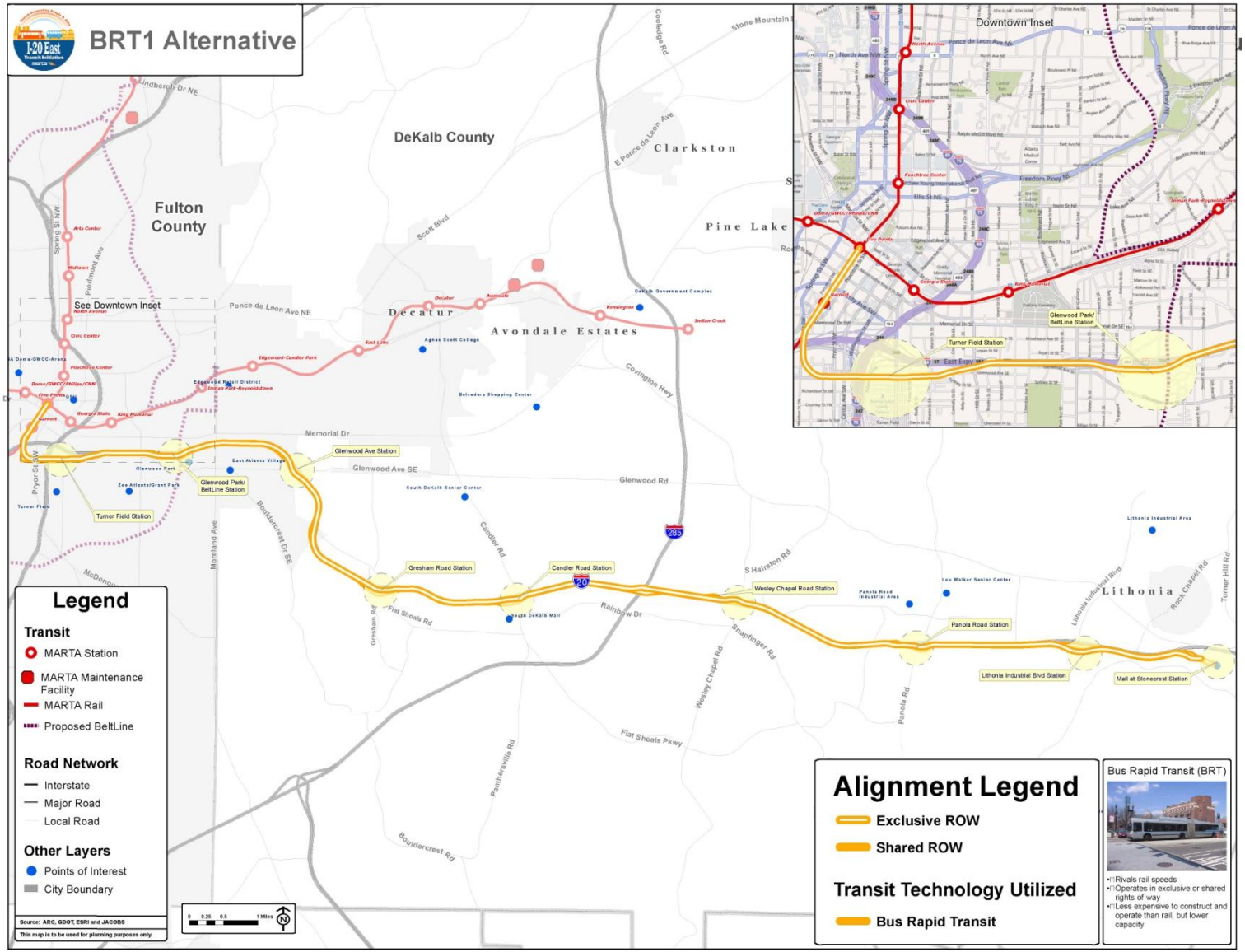


Figure 5-7: BRT 1 Alternative Map



This alternative would include stations at Five Points, Garnett, Turner Field, Glenwood Park, Gresham Road, Candler Road, Wesley Chapel Road, Panola Road, and the Mall at Stonecrest. This alignment is identical to and includes the same station areas as the LRT 1 and HRT 1 alternatives.

Operating Characteristics

This alternative would tie into the existing MARTA heavy rail system at the Garnett Station and run parallel to the HRT alignment to the Five Points Station. As with LRT service, BRT would also be a new MARTA service and, therefore, a new MARTA line.

Other general operating characteristics of the BRT 1 alternative include:

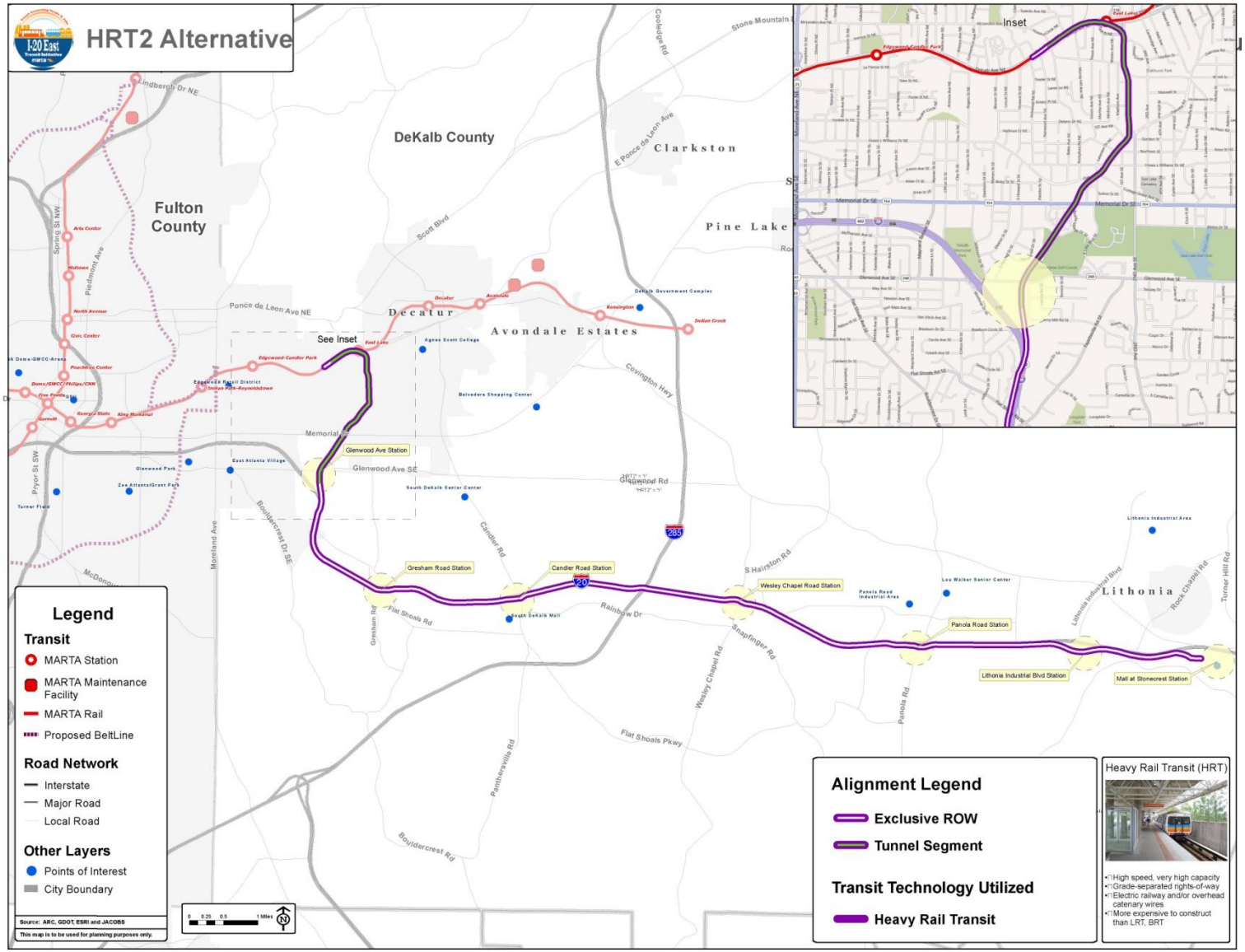
Hours of Operation:	Peak Hours (All Other Times Off Peak):
Weekdays: 6 AM – 12 AM	AM Peak: 6 AM – 10 AM
Weekends: 6 AM – 2 AM	PM Peak: 3 PM – 7 PM
Headways:	Vehicles per trip:
Peak Hour: 10 minutes	4-car trains
Off-Peak Hour, Weekends and Holidays: 15 minutes	

5.1.4 Heavy Rail Transit Alternative 2 (HRT 2)

HRT 2 is comprised of a new HRT line that would spur from the existing MARTA rail system just east of the Edgewood/Candler Park Station. This alternative would utilize the existing tunnel portal constructed with the east-west line that was originally intended for the proposed Tucker – North DeKalb line. This tunnel portal would allow the HRT2 line to enter a tunnel alignment before leaving the MARTA right-of-way, which would ensure that this alternative does not adversely affect the surrounding historic neighborhoods. The tunnel alignment would extend south to I-20 where it would surface and run parallel to I-20 to the Mall at Stonecrest in eastern DeKalb County. This alternative would include stations at Gresham Road, Candler Road, Wesley Chapel Road, Panola Road, and the Mall at Stonecrest. A conceptual map of this alternative is provided in **Figure 5-8**. A map of the HRT 2 Alternative is provided in **Figure 5-9**.

Figure 5-8: HRT 2 Alternative Concept

Figure 5-9: HRT 2 Alternative Map



Operating Characteristics

This alternative would tie into the existing MARTA heavy rail system at the Edgewood/Candler Park Station. This alternative would essentially serve as an extension of the MARTA Green Line from the Bankhead Station to the Mall at Stonecrest. An illustration of the potential service concept is provided in **Figure 5-10**.

Other general operating characteristics of the HRT 2 alternative include:

Hours of Operation:	Peak Hours (All Other Times Off Peak):
Weekdays: 6 AM – 12 AM	AM Peak: 6 AM – 10 AM
Weekends: 6 AM – 2 AM	PM Peak: 3 PM – 7 PM
Headways:	Vehicles per trip:
Peak Hour: 10 minutes	6-car trains
Off-Peak Hour, Weekends and Holidays: 15 minutes	

5.1.5 Light Rail Alternative 2 (LRT 2)

LRT 2 is comprised of a LRT line that would originate at the North Avenue Station and operate in mixed traffic on North Avenue east to the proposed BeltLine alignment. It would follow the BeltLine alignment south to I-20. It would then extend east in an exclusive guideway, on structure, in the I-20 median. At Glenwood Avenue, the alignment would transition to the side of the interstate and run parallel to I-20 to the Mall at Stonecrest in eastern DeKalb County.

This alternative would include stations at North Avenue, Glen Iris Drive, North Highlands Avenue, Inman Park Station, Glenwood Park, Gresham Road, Candler Road, Wesley Chapel Road, Panola Road, and the Mall at Stonecrest. It would include three stations along the BeltLine alignment; North Highland Avenue, Inman Park Station, and Glenwood Park. A simplified conceptual map is provided in **Figure 5-11**. A map of the LRT 2 Alternative is provided in **Figure 5-12**.

Figure 5-11: LRT 2 Alternative Concept

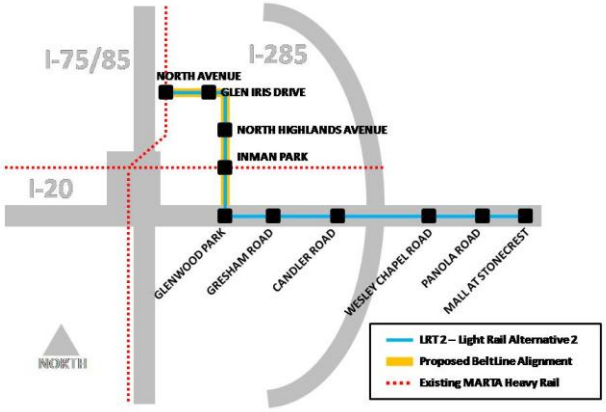
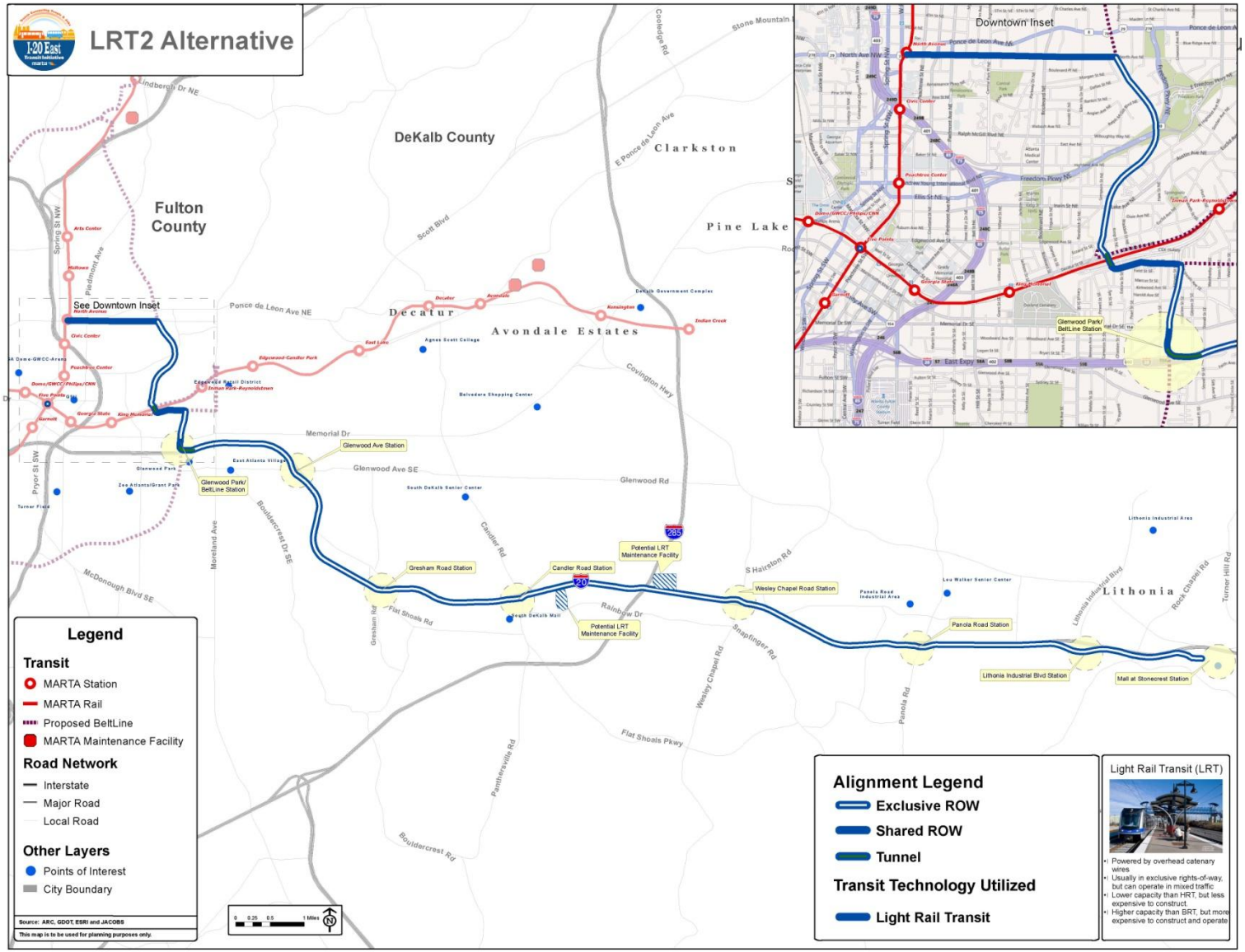


Figure 5-10: HRT 2 Integration with MARTA System

Figure 5-12: LRT 2 Alternative Map



Operating Characteristics

General operating characteristics of the LRT 2 alternative include:

Hours of Operation:	Peak Hours (All Other Times Off Peak):
Weekdays: 6 AM – 12 AM	AM Peak: 6 AM – 10 AM
Weekends: 6 AM – 2 AM	PM Peak: 3 PM – 7 PM
Headways:	Vehicles per trip:
Peak Hour: 10 minutes	4-car trains
Off-Peak Hour, Weekends and Holidays: 15 minutes	

5.1.6 Heavy Rail Transit Alternative 3 (HRT 3)

HRT3 originated as the Tier 1 Mainline Alternative 1 – HRT Extension from Indian Creek. However, that alternative would not provide improved transit service to stakeholder-identified activity centers along I-20 inside the I-285 Perimeter. Therefore, BRT service was added to this alternative along I-20 between Wesley Chapel Road and downtown Atlanta to create HRT3. HRT3 would extend the existing HRT line from the Indian Creek Station south parallel to I-285, then east parallel to I-20 to the Mall at Stonecrest in eastern DeKalb County. BRT service would originate at the Five Points Station, travel south along surface streets to I-20, then operate in I-20 serving stations eastward to Wesley Chapel Road. Stations along the HRT portion of this alternative would be located at Covington Highway, Wesley Chapel Road, Panola Road, Lithonia Industrial Boulevard, and Mall at Stonecrest. Stations for the BRT portion of the alternative would be located at Moreland Avenue, Glenwood Avenue, Gresham Road, and Candler Road. A concept of the alternative is provided in **Figure 5-13**. A map of the HRT 3 Alternative is provided in **Figure 5-14**.

Figure 5-13: HRT 3 Alternative Concept

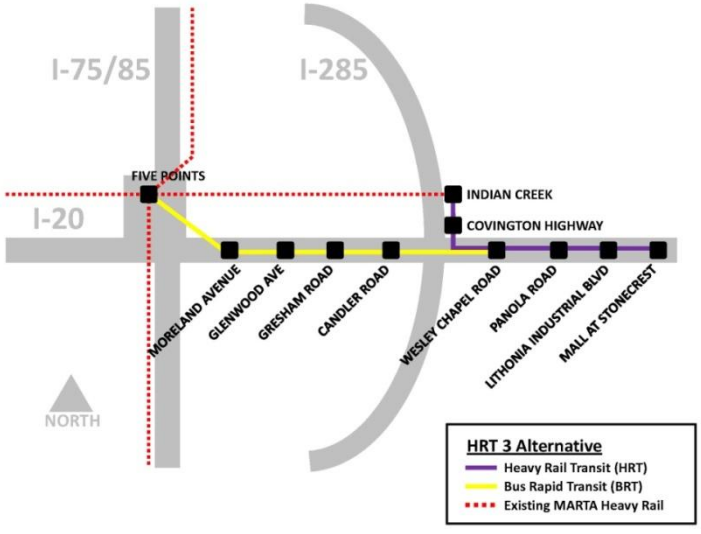
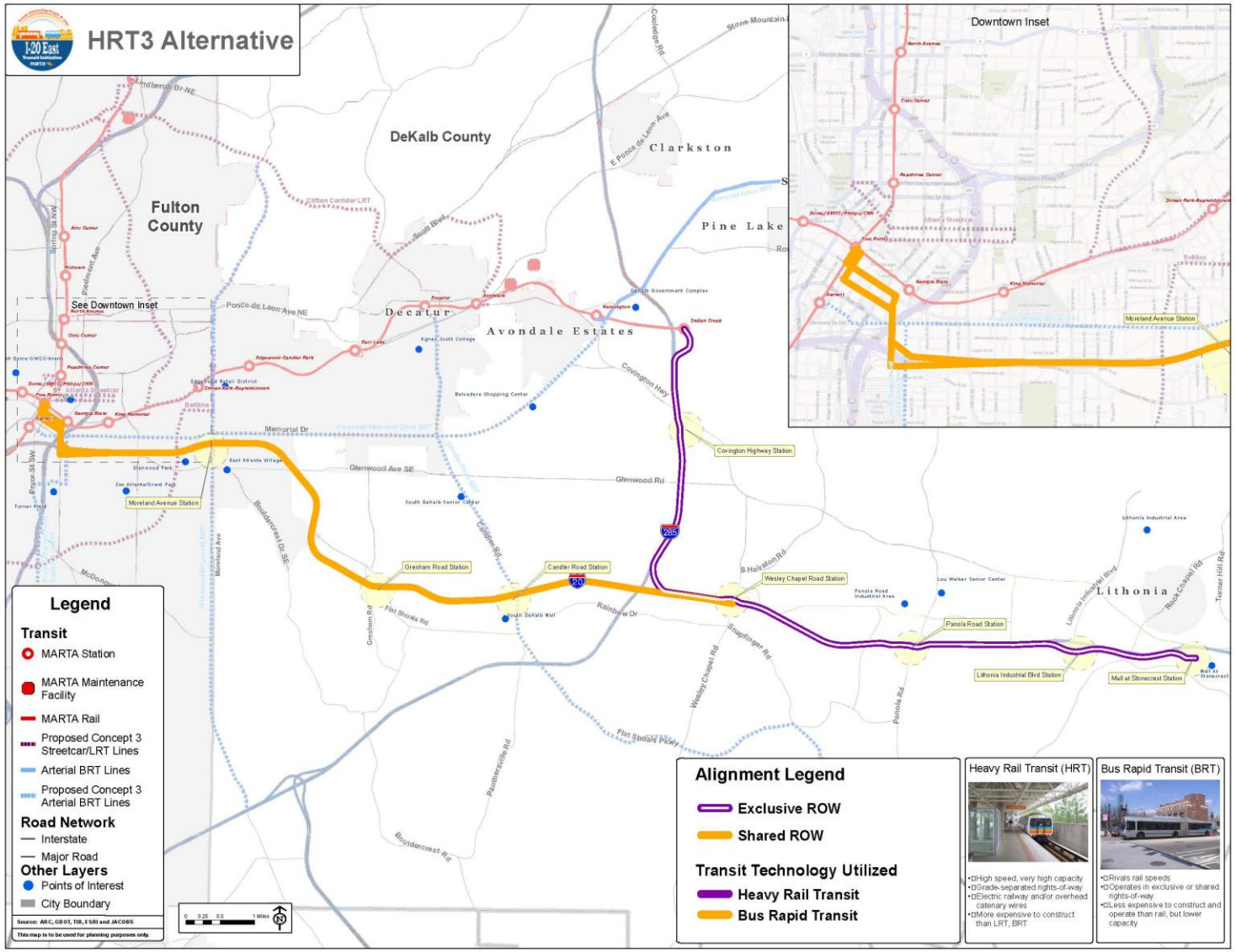


Figure 5-14: HRT 3 Alternative Map



Operating Characteristics

Much like HRT 2, this alignment would also serve as an extension of the MARTA Green Line to the Mall at Stonecrest. However, the Green Line service east of the Five Points Station would be amended to only provide service to Decatur, Kensington and Indian Creek Stations in addition to those added by this alternative. An illustration of the potential service concept with respect to the MARTA system is provided in **Figure 5-15**. The BRT portion of this alternative would be a new MARTA service and, therefore, a new MARTA line.

Other general operating characteristics of the HRT 3 alternative (for both HRT and BRT) include:

Hours of Operation:	Peak Hours (All Other Times Off Peak):
Weekdays: 6 AM – 12 AM	AM Peak: 6 AM – 10 AM
Weekends: 6 AM – 2 AM	PM Peak: 3 PM – 7 PM
Headways:	Vehicles per trip:
Peak Hour: 10 minutes	HRT: 6-car trains
Off-Peak Hour, Weekends and Holidays: 15 minutes	Articulated BRT vehicles:

5.2 Cost Estimates for Tier 2 Build Alternatives

Cost estimates for the Tier 2 Alternatives were completed through a refinement of the Tier 1 cost estimates. The refinement process involved the integration of factors specifically related to the chosen technology for each alignment advancing from Tier 1, specifically:

- Matching appropriate technologies for the alignments advancing from Tier 1;
- Operational characteristics of a given technology with respect to the existing and planned transit infrastructure; and
- ROW availability to accommodate a specific technology.

The documents that describe the refinement of the initial Tier 1 estimates to develop cost estimates for Tier 2 Alternatives were as follows:

- *Station Cost Estimating Methodology* - This memorandum provided preliminary costs for HRT, LRT, and BRT technologies based on a comparison of similar projects throughout the U.S and was utilized to refine the Tier 1 cost estimates to include capital costs for stations based on their location and type. This report has been attached hereto as **Appendix B**.

Figure 5-15: HRT 3 Integration with MARTA System

- *Conceptual Right-of-Way Cost Estimating Methodology* – This memorandum documented the development of ROW costs for each alternative. ROW estimates were developed through the assumption of an 80' foot footprint for each alternative and applying land values based on Tax Assessor Office information from Fulton and DeKalb Counties. These initial estimates were then inflated to reflect market values, scheduling, and administrative and court costs. This document has been included as **Appendix C**.

Table 5-1 presents the concept level cost estimates for the Tier 2 Build Alternatives. Please refer to the *I-20 East AA/DEIS Cost Estimating Methodology* and *Conceptual Right-of-Way Cost Estimating Methodology* memoranda for more detail on the methodology employed to develop these estimates.

Table 5-1: Cost Estimates for Tier 2 Alternatives

Alternative #	Alternative Name	Right-of-Way Cost	Capital, Professional, Finance, & Contingency Costs	Total Cost	Annual Operating & Maintenance Costs
HRT1	Heavy Rail Transit 1	$233.7M	$3.05B	**$3.28B**	$35.2M
LRT1	Light Rail Transit 1	$233.7M	$2.47B	**$2.70B**	$10.4M
BRT1	Bus Rapid Transit 1	$233.7M	$1.88B	**$2.11B**	$6.4M
HRT2	Heavy Rail Transit 2	$112.7M	$2.61B	**$2.73B**	$23.8M
LRT2	Light Rail Transit 1	$116.7M	$2.00B	**$2.12B**	$10.4M
HRT3	Heavy Rail Transit 2	$107.4M	$1.73B	**$1.84B**	$18.0M

5.3 Baseline/TSM Alternative

The Baseline/TSM Alternative was intended to be the best that could be done to improve mobility without making a major capital investment in guideway infrastructure. This alternative is generally considered to be a low cost approach to addressing transportation problems in the study corridor. As such, the improvements associated with the Baseline/TSM Alternative were developed to respond to and satisfy the defined purpose and need associated with enhancing mobility in the study area. These improvements typically consist of a variety of actions to improve existing transportation services including modifications to existing bus routes, additions to existing park-and-ride facilities, and minor roadway signal improvements. The FTA guidance designates the Baseline/TSM Alternative to serve as the benchmark against which the Build Alternatives are evaluated in the New Starts program. To this end, the Baseline/TSM Alternative was used during the I-20 East Detailed Corridor Analysis process as the basis for calculating incremental costs and benefits of a fixed guideway facility.

The I-20 East Baseline/TSM strategy focused on developing a set of new express routes to provide linkages to downtown markets via connections to the existing MARTA heavy rail stations at Five Points or Indian Creek. The key objective of the Baseline/TSM strategy was to facilitate convenient transit access and connectivity by increasing service frequency, reducing transit travel times, and creating convenient opportunities for transfers to occur. To accomplish these objectives, new park and ride facilities, improvements to existing transit services and additional express services were proposed as part of the Baseline/TSM Alternative, which is shown in **Figure 5-16**.

The I-20 East Baseline/TSM strategy was a low cost approach to solving transportation needs in the corridor and included the following:

- Provide new park and ride facilities to expand opportunities to access transit.
- Enhance existing transit services to provide greater transit connectivity and accessibility within the corridor and the existing rail network; and
- Provide new limited stop express service with competitive travel times to destinations served by the Build Alternatives.

Figure 5-16 presents a map of the proposed Baseline/TSM Alternative, which included the new and improved express routes and new park-and-ride lots. More detail on the development and operational characteristics can be referenced in the *Baseline/Transportation System Management Alternative Report*.

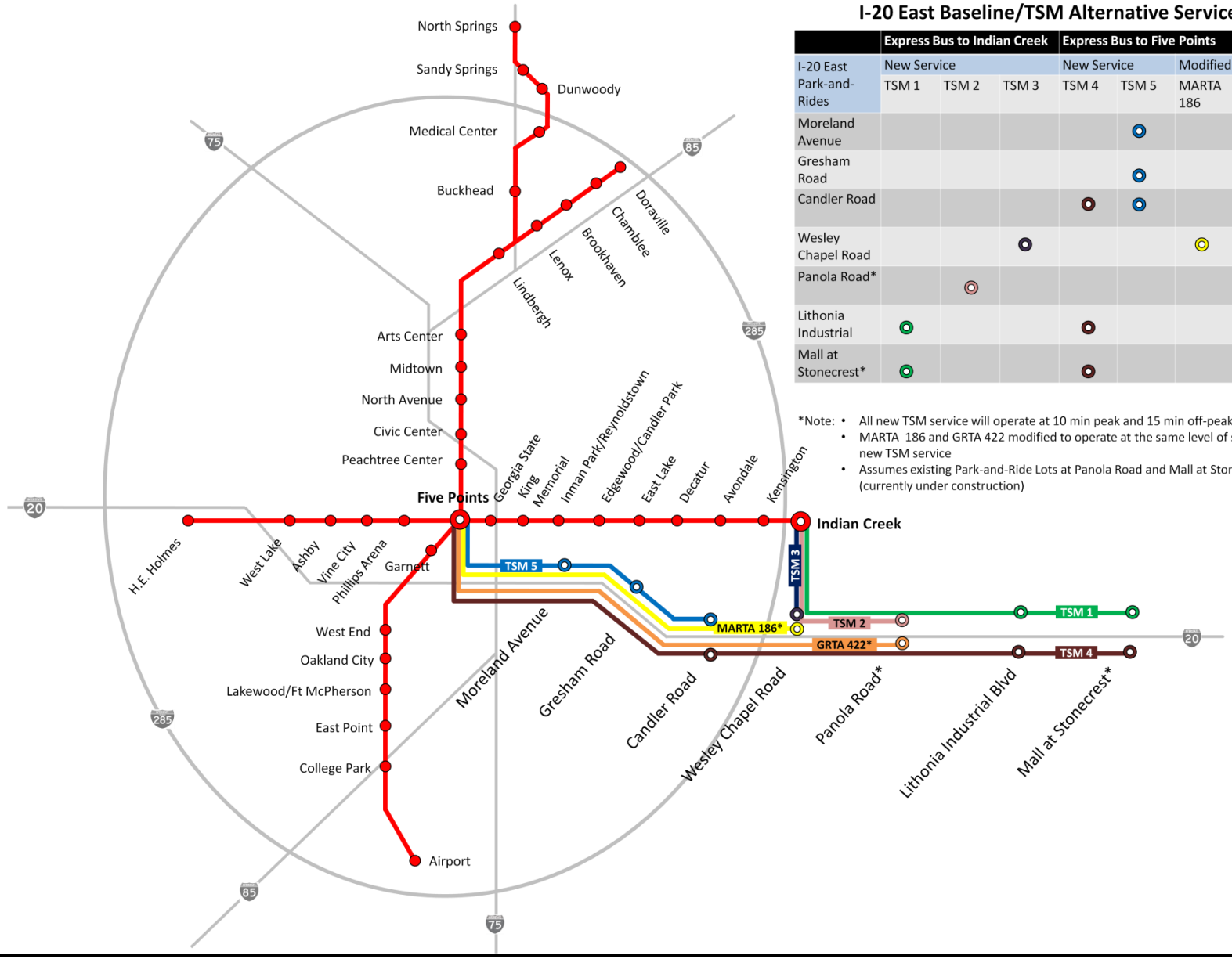
Proposed Park and Ride Facilities

First step in the development of the Baseline/TSM Alternative involved the identification of potential park and ride facilities in the corridor that are consistent with the proposed stations associated with the Build Alternatives. As illustrated in Figure 5-16, park and rides were proposed at Moreland Avenue, Gresham Road, Candler Road, Wesley Chapel Road, Panola Road, Lithonia Industrial Boulevard and Mall at Stonecrest. These facilities would be designed to provide sufficient parking to meet the demand estimated from the travel demand model. In combination, it was assumed that the existing park and ride facility at Panola Road and future facility at the Mall at Stonecrest would have adequate supply of parking to meet the forecast demand.

Improved Existing Service

The next step in the Baseline/TSM strategy required an inventory of existing transit routes that provide direct connections to either Five Points or Indian Creek MARTA stations. Similar to the park and rides, these termini were chosen for their consistency with the Build Alternatives, which would allow for valid comparisons to be made among the existing and proposed routes. **Table 5-2** presents all the existing routes that were initially considered for inclusion in the Baseline/TSM based on the types of service offered and the destinations served within the corridor. The specific improvements and associated benefits that would result are detailed in the *Baseline/Transportation System Management Alternative Report*.

Figure 5-16: Baseline/TSM Alternative



I-20 East Baseline/TSM Alternative Service Plan

	Express Bus to Indian Creek			Express Bus to Five Points			
I-20 East Park-and-Rides	New Service			New Service		Modified Service*	
	TSM 1	TSM 2	TSM 3	TSM 4	TSM 5	MARTA 186	GRTA 422
Moreland Avenue					●		
Gresham Road					●		
Candler Road				●	●		
Wesley Chapel Road			●			●	
Panola Road*		●					●
Lithonia Industrial	●			●			
Mall at Stonecrest*	●			●			

*Note:
- All new TSM service will operate at 10 min peak and 15 min off-peak headways
- MARTA 186 and GRTA 422 modified to operate at the same level of service as new TSM service
- Assumes existing Park-and-Ride Lots at Panola Road and Mall at Stonecrest (currently under construction)

Table 5-2: Existing Routes Considered for TSM/Baseline

Operator	Service Description	Recommendation
GRTA Xpress	422 Panola Road to Five Points	Include in TSM with headways reduced from 30 minutes to 15 minutes
MARTA Local/Express	186 Wesley Chapel Rd to Five Points	Include in TSM with weekday peak hour headways reduced from 20 minutes to 12 minutes
MARTA Local	74 Flat Shoals to Five Points	No Change - maintain local service
MARTA Local	111 Stonecrest to Indian Creek	No Change - maintain local service
MARTA Local	115 Evans Mill to Indian Creek	No Change - maintain local service
MARTA Local	116 Stonecrest to Indian Creek	No Change - maintain local service

New Express Service

In addition to identifying existing routes for enhancements, a series of new limited stop express services that meet the purpose and need of the study were recommended for inclusion in the Baseline/TSM Alternative. **Table 5-3** presents the new TSM routes and the park and rides they serve in the corridor. These new routes are grouped based on their service to either Indian Creek or Five Points. The specific improvements and associated benefits that would result are detailed in the *Baseline/Transportation System Management Alternative Report*.

Table 5-3: New Express Services

		TSM Route	Park and Ride Lots Served
Service to Indian Creek			
I-20	New Express Bus	TSM 1	Stonecrest Mall and Lithonia Industrial
I-20	New Express Bus	TSM 2	Panola Road
I-20	New Express Bus	TSM 3	Wesley Chapel Road
Service to Five Points			
I-20	New Express Bus	TSM 4	Stonecrest Mall, Lithonia Industrial and Candler Road
I-20	New Express Bus	TSM 5	Candler Road, Gresham Road and Moreland Avenue

5.4 No Build Alternative

The No Build Alternative encompasses the estimated reduction in speeds in the 2030 roadway network derived from the ARC travel demand model. The change in 2010 to 2030 travel times projected by the model was used to calculate 2030 bus travel times. The model reflected an average change in travel speeds on the freeway of -15.5 percent and -16.6 percent on arterials. An overall average 16.5 percent reduction in travel speeds between 2010 and 2030 was projected by the model. This change in travel speeds was applied to the 2010 transit service base to estimate 2030 No Build transit requirements.

In addition, MARTA has designated programmed changes to service headways (frequencies) for certain routes between 2010 and 2030. The estimation of the 2030 No Build reflects these changes. The referenced service changes are listed in **Table 5-4**.

Table 5-4: Change in 2010 Existing Transit and 2030 No Build Transit Headways

Service	2010		2030	
	Weekday		Weekday	
	Peak	Off-Peak	Peak	Off-Peak
MARTA 74 Flat Shoals to Five Points	20	40	20	45
MARTA 186 Wesley Chapel Rd to Five Points	20	25	12	55
MARTA 111 Stonecrest to Indian Creek	20	30	30	40
MARTA 115 Evans Mill to Indian Creek	15	20	15	30
MARTA 116 Stonecrest to Indian Creek	15	30	15	30
GRTA 422 Panola Road to Five Points	30		15	0

6.0 NEXT STEPS

The next step in the I-20 East Detailed Corridor Analysis is the completion of the Tier 2 Screening Process to determine the LPA for the I-20 East Initiative to be carried forward into DEIS. As such, the Tier 2 Alternatives identified herein will be subject to the full set of performance measures developed for this effort, as detailed in the *Evaluation Framework Report*.

Following identification of the LPA, the following steps will occur:

- Adoption of the LPA by the MARTA board;
- Coordination with the ARC to modify the Long Range Transportation Plan for the region, PLAN 2040, to reflect the improvement identified as the LPA for the I-20 East Transit Initiative; and
- Coordination with FTA to discuss the LPA and identify any needed LPA refinements and enter into the DEIS phase of project development.

APPENDIX A:

PRELIMINARY ORDER OF MAGNITUDE CAPITAL COST ESTIMATING METHODOLOGY

APPENDIX B:

STATION COST ESTIMATING METHODOLOGY

APPENDIX C:

CONCEPTUAL COST ESTIMATES TECHNICAL MEMORANDUM