Detailed Screening Results and Selection of Locally Preferred Alternative

Metropolitan Atlanta Rapid Transit Authority

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Detailed Screening Results and Selection of Locally Preferred Alternative

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Executive Summary

Introduction

The Metropolitan Atlanta Rapid Transit Authority (MARTA) conducted an Alternatives Analysis (AA) to identify and evaluate transit improvements within the Beltline corridor in an effort to improve local and regional mobility, accessibility and connectivity, and to support the City of Atlanta's redevelopment plans. The Beltline is a 22-mile loop of existing rail corridor that encircles the City of Atlanta's Central Business District (CBD), specifically the Downtown and Midtown areas.

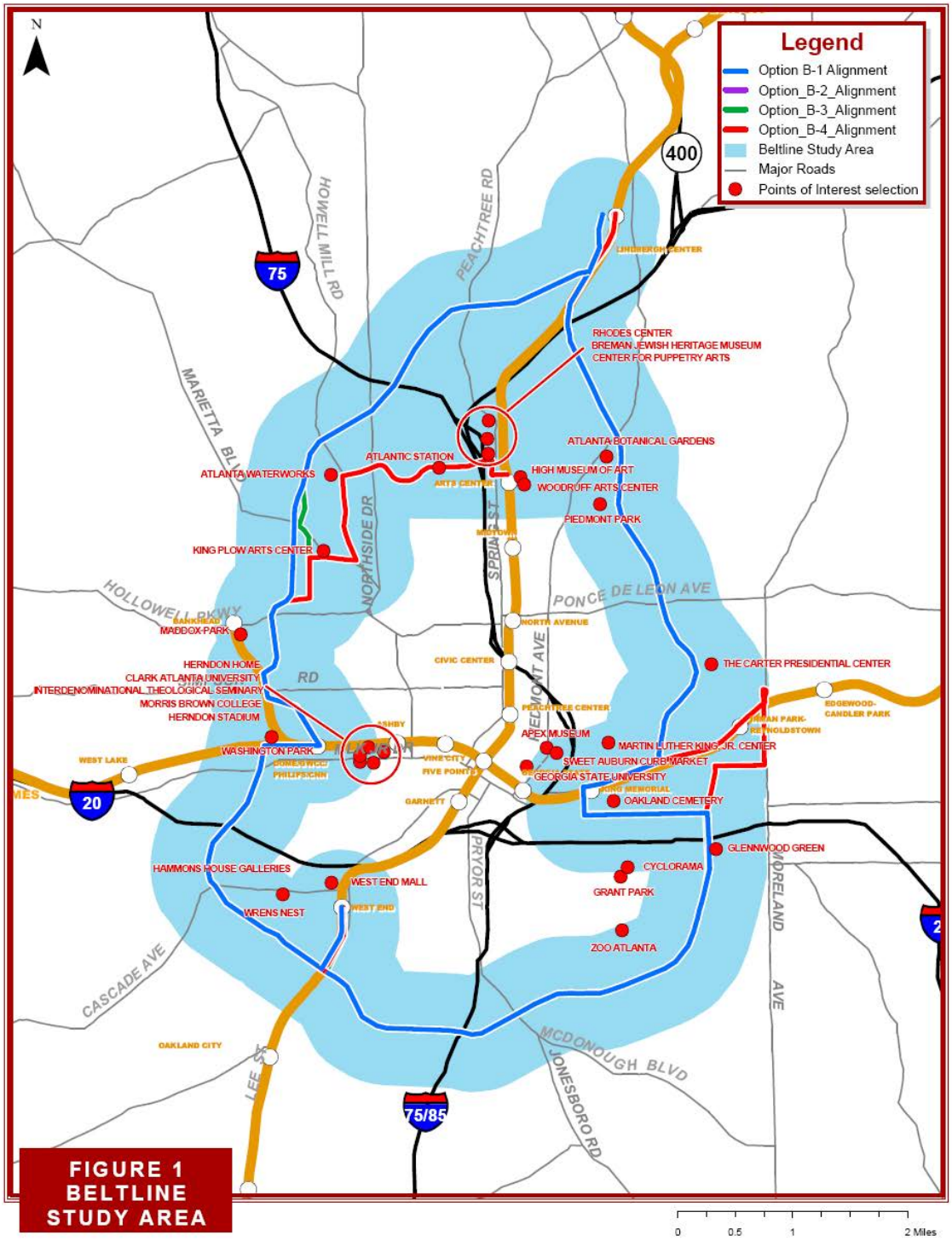
Study Area Description

The Beltline Corridor study area contains many of Atlanta's residential neighborhoods, major employment centers, a majority of the parks in the central city area, as well as a significant number of major attractions and points of interest. The study area identified in Figure 1 follows a series of railway tracks, approximately two to four miles from the center and encircles downtown Atlanta. The proposed Beltline would connect the existing MARTA rail network with up to 45 established residential communities, new affordable housing developments, light industrial areas, and abandoned areas identified for redevelopment. In addition, the Beltline would support the metropolitan Atlanta regional transit system, including the existing MARTA rail and bus network, other regional bus services, future Bus Rapid Transit (BRT) projects along I-75, I-285, Memorial Drive and Buford Highway, and the pending commuter rail service between Lovejoy and downtown Atlanta.

Project Development Process

In April 2005, the MARTA Board of Directors approved the initiation of the Inner Core Alternatives Analysis. The original charge of the study was to assess the merits of two distinct transit alignments, the Beltline and the C-Loop. In January 2006, the MARTA Board approved a resolution to split the Inner Core study into two separate but parallel studies for the Beltline and C-Loop. The separation of the two projects provided the opportunity to focus on the distinct needs of each corridor and the simplicity needed to segment and phase the projects. It also recognized jurisdictional support and resources for projects, addressed Federal Transit Administration (FTA) concerns regarding independent utility and logical termini, and improved project posture for potential New Starts Funding.

Figure ES-1: Beltline Study Area



The development of the Purpose and Need Statement was a critical step in the Alternatives Analysis (AA) process and an important factor in determining and evaluating the various potential mobility solutions for the Beltline corridor. The Statement presents the following goals and objectives developed from information obtained through a significant public involvement process, regional plans and other regional transportation studies.

Goals and Objectives

- Improve mobility, access and reliability for personal travel within the Beltline Corridor.
- Contribute to a seamless, integrated regional multimodal transportation network that fully utilizes the capacity of the MARTA rail system, the existing bus systems and the existing roadway network.
- Provide a bicycle and pedestrian friendly transit environment.
- Promote seamless intermodal connectivity, increase community access to the existing rail rapid transit network and support the development of a continuous urban fabric through the core of the Atlanta Region.
- Provide compatible transportation solutions that support ARC's Regional Development Plan (RDP) by connecting existing neighborhoods and facilitating emerging trends towards mixed-use redevelopment.
- Support local and regional land use development policies and plans, such as the *New Century Economic Development Plan for the City of Atlanta* - and fulfill the needs of emerging transit supportive land uses.
- Improve air quality, reclaim Brownfields, promote equity and preserve natural resources.

The evaluation process for the Beltline AA involved two steps, Prescreening/Fatal Flaw Analysis and Detailed Screening evaluation. The first step, Prescreening/Fatal Flaw Analysis, reduced the "universe of alternatives" to combinations of alignment and technology that lacked unreasonable constraints in implementation and continued to support the Purpose and Need for the study. Through the prescreening evaluation of five potential technologies, three modes, BRT, Modern Streetcar (also referred to as 'Streetcar'), and Light Rail Transit (LRT), received the highest ratings. These three technologies were carried forward into the Fatal Flaw Analysis, in combination with four alignment alternatives refined with public and stakeholder input following the Feasibility phase and the separation of the C-Loop project elements. The Fatal Flaw analysis revealed cost-prohibitive (an additional $50 to $80 million) and potentially severe adverse impacts associated with **Alternatives B3 *LRT*** and **B4 *LRT*** to either overpass, underpass, or circumvent the CSX Hulsey Yard and MARTA heavy rail tracks in east Atlanta. As a result, these two alternatives were

dropped from further consideration, leaving ten alternatives for Detailed Screening, which constituted the second step in the AA evaluation process. The Detailed Screening evaluated each of the remaining alternatives by applying criteria and performance measures developed with input from the public and other key stakeholders. More details regarding the first step in this process are detailed in the MARTA Prescreening/Fatal Flaw Analysis technical memorandum (June 2006). Figure 2 illustrates the evolution of the number of alternatives considered from the conclusion of the Inner Core Feasibility phase to the Prescreening/Fatal Flaw Analysis.

Beltline Alternatives

The Prescreening/Fatal Flaw analysis resulted in 11 candidate alternatives based on technology screening, qualitative analysis and public input. The candidate alternatives include the Transportation Systems Management (TSM) Alternative and ten Build Alternatives. Table 1 describes the Build Alternatives, the number of potential stations along each alternative, and connections with MARTA heavy rail service.

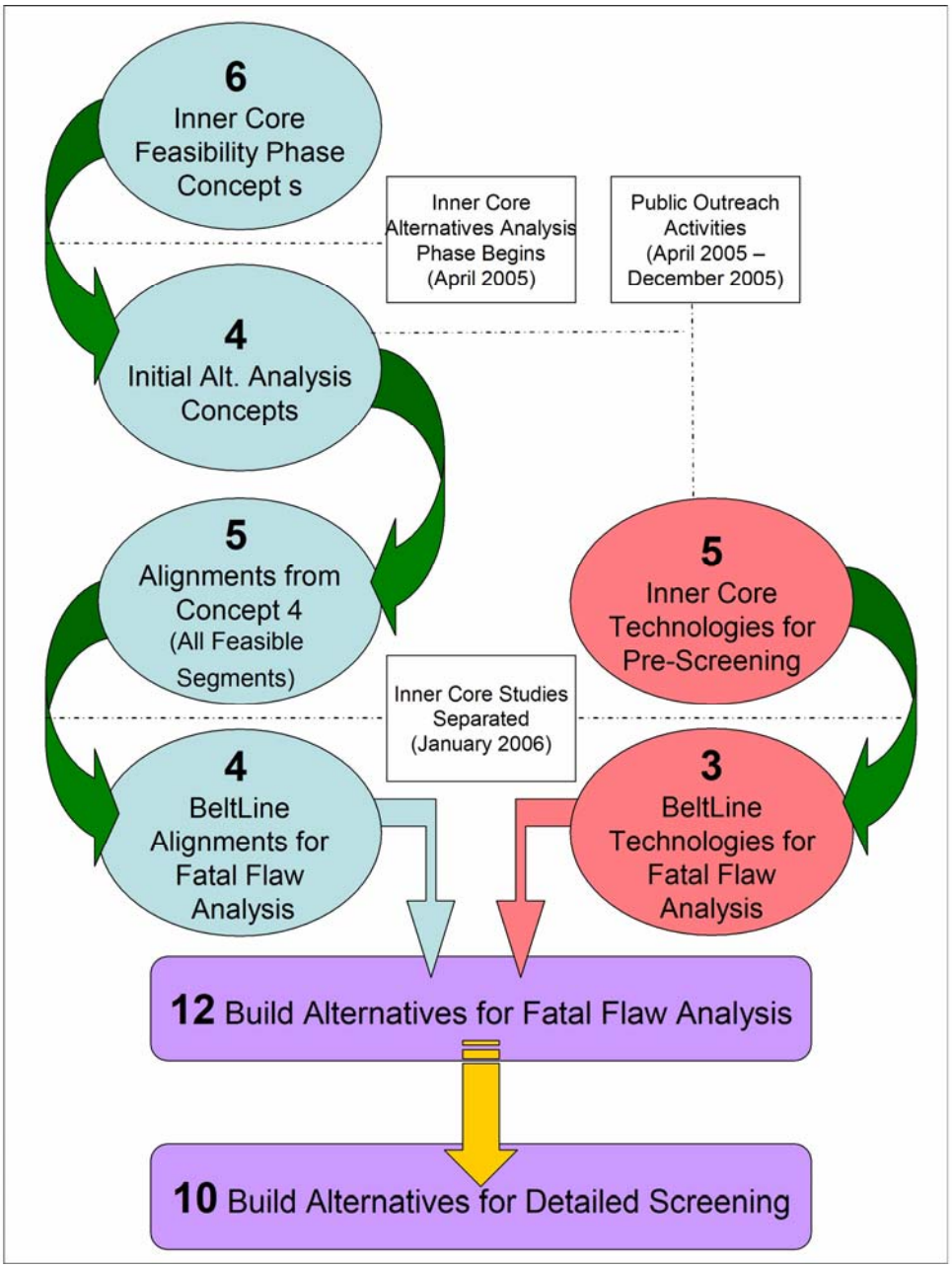
The TSM Alternative is defined by FTA as the "best that can be done" to improve mobility in the corridor without major capital investment in new infrastructure. Generally, TSM Alternatives are intended to serve the same markets and provide a level of service as close as possible to the Build Alternatives, but with relatively low cost approaches.

For the Beltline AA, the TSM Alternative included two new bus routes serving the same markets as the Build Alternatives, as well as modifications to the feeder bus network. It also included a number of "background" improvements that are consistent across all alternatives.

Table ES-1: Alternative Alignments

Alternative Alignment	Potential Stations (Preliminary)	Connection with MARTA Heavy Rail:			
		North Line	South Line	East Line	West Line
B1	40	*Lindbergh*	West End	*King Memorial*	Ashby
B2	39	*Arts Center (from west), Lindbergh (from east)*	West End	*King Memorial*	Ashby
B3	41	*Lindbergh*	West End	*Inman Park-Reynoldstown*	Ashby
B4	40	*Arts Center (from west), Lindbergh (from east)*	West End	*Inman Park-Reynoldstown*	Ashby

Figure ES-2: Summary of Development of Alternatives through Fatal Flaw Analysis



The Build Alternatives are located along two basic alignments with two connection points:

- Northwest Alignments: Bankhead to Lindbergh (**Alternative B1**); Bankhead to Arts Center (**Alternative B4**).
- Eastside Alignments: Lindbergh Center to King Memorial (**Alternative B2**); Lindbergh Center to Inman Park-Reynoldstown (**Alternative B3**)

The four alternative alignments evaluated are shown in Figures 3 through 6. The technologies considered included:

- Light Rail Transit (**LRT**)
- Modern Streetcar (**Streetcar**)
- Bus Rapid Transit (**BRT**)

Figure ES-3: Alternative B1

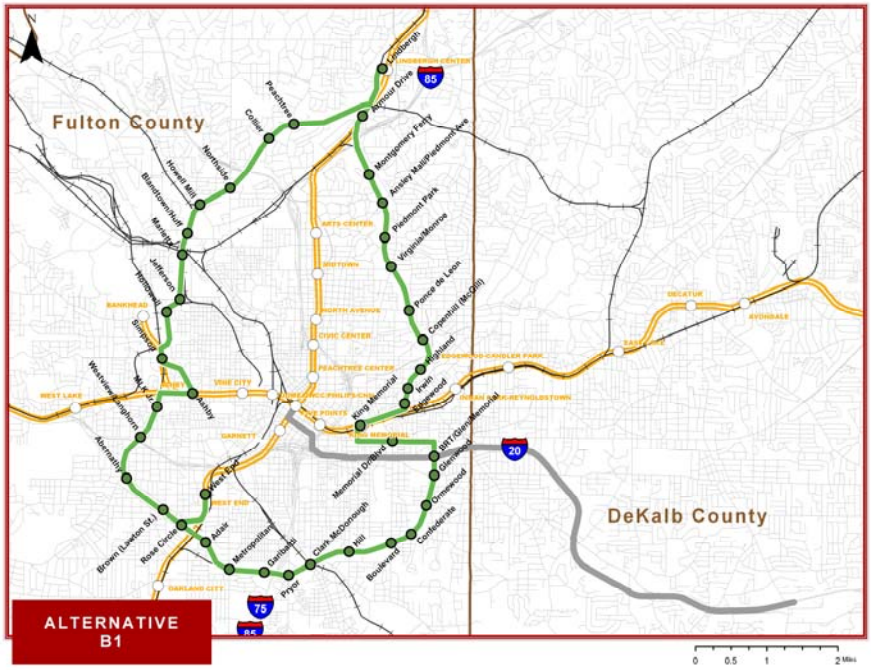


Figure ES-4: Alternative B2

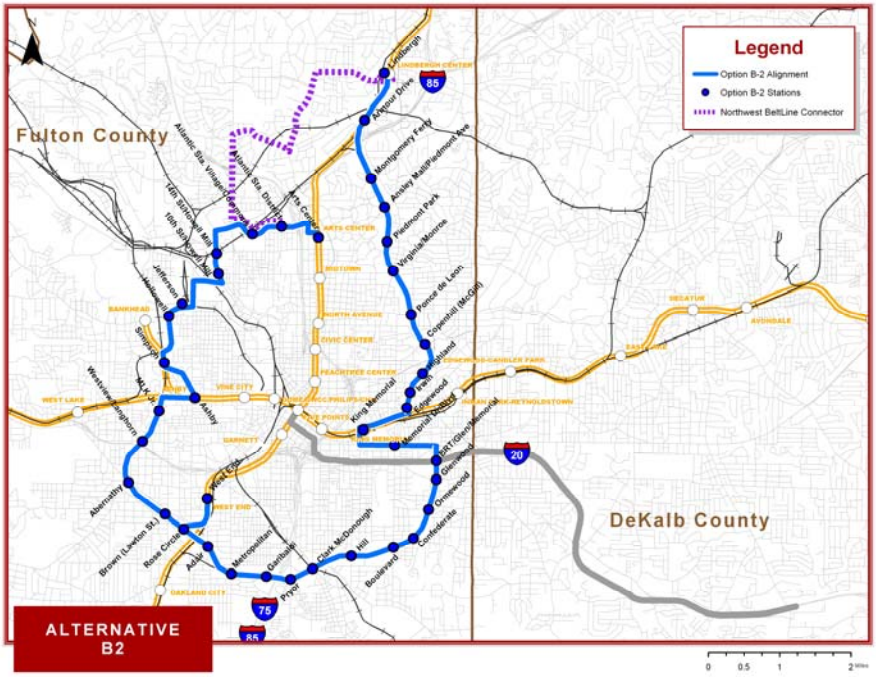


Figure ES-5: Alternative B3

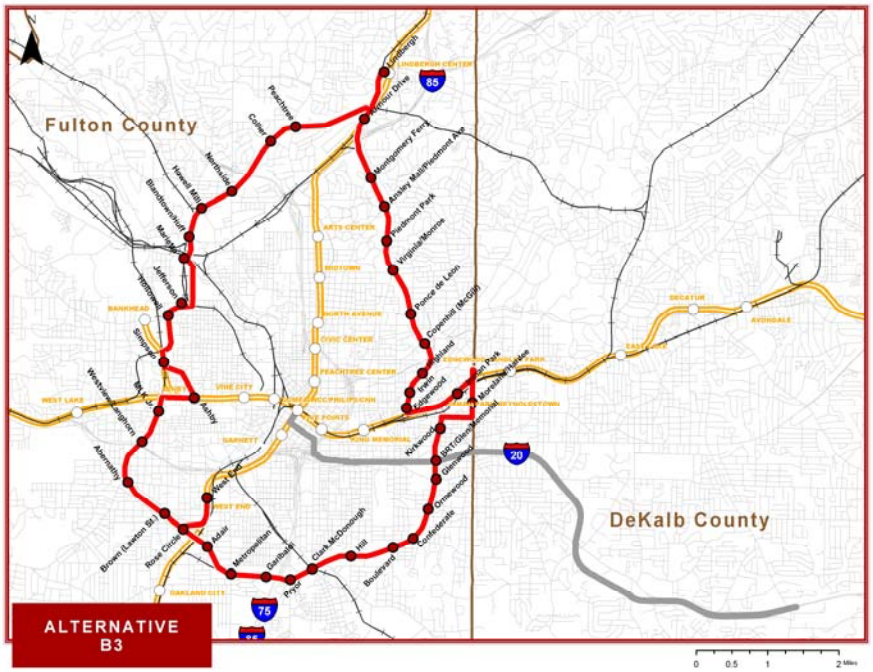
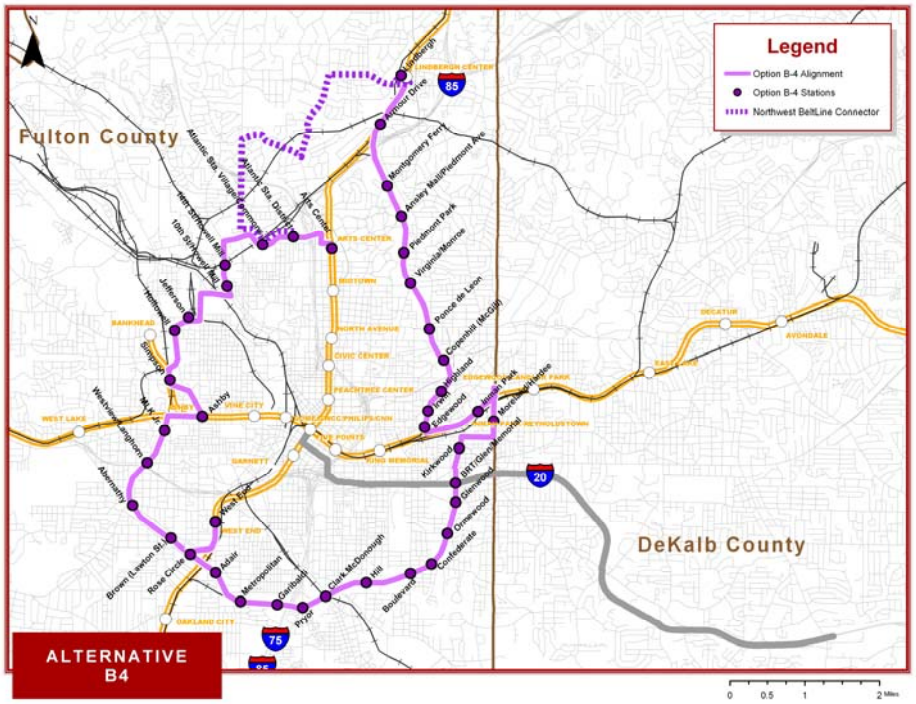


Figure ES-6: Alternative B4



Detailed Screening Evaluation Results

Table 2 compares alignment options for both the northwest quadrant (with stops at either Arts Center or Lindbergh MARTA Stations) and the eastside (with stops at either Inman Park-Reynoldstown or King Memorial MARTA Stations), as well as technology options (BRT, LRT, and Modern Streetcar). It also provides an analysis of the ratings, merits and disadvantages for each of the ten Detailed Screening alternatives based on the evaluation criteria.

Alternatives B1 and B3 outperformed Alternatives B2 and B4 in the Mobility and Accessibility evaluation category. Alternatives B1 and B2 outperformed Alternatives B3 and B4 in the Land Use and Redevelopment evaluation category.

Overall, Alternatives B1 and B3 outperformed Alternatives B2 and B4 in the Environmental Effects evaluation category. Of the four evaluation categories, Cost Effectiveness was the only category with quantitative performance measures that can delineate the alternatives by mode. Regardless of alignment, BRT Alternatives outperformed their comparative modes across all performance measures in the Cost Effectiveness category.

Table ES-2
Summary of Technical Results

SUMMARY MATRIX	Lindbergh/Lindbergh via King Memorial			Lindbergh/Arts Center via King Memorial			Lindbergh/Lindbergh via Inman Park-Reynoldstown		Lindbergh/Arts Center via Inman Park-Reynoldstown	
	ALT B1 *BRT*	**ALT B1** *Streetcar*	**ALT B1** *LRT*	**ALT B2** *BRT*	**ALT B2** *Streetcar*	**ALT B2** *LRT*	**ALT B3** *BRT*	**ALT B3** *Streetcar*	**ALT B4** *BRT*	**ALT B4** *Streetcar*
MOBILITY & ACCESSIBILITY	2.62	2.62	2.62	1.45	1.45	1.45	2.54	2.54	1.38	1.38
LAND USE & REDEVELOPMENT	1.42	1.78	1.78	1.54	1.90	1.90	1.12	1.39	1.25	1.52
ENVIRONMENTAL EFFECTS	1.63	1.63	1.63	1.22	1.22	1.22	1.57	1.57	1.13	1.13
PRE-COST EFFECTIVENESS SCORE (Max. = 7.50)	***5.67***	***6.03***	***6.03***	***4.21***	***4.57***	***4.57***	***5.23***	***5..50***	***3.76***	***4.03***
PRE-COST EFFECTIVENESS RANKING	**3**	**1 (Tie)**	**1 (Tie)**	**8**	**6 (Tie)**	**6 (Tie)**	**5**	**4**	**10**	**9**
COST EFFECTIVENESS	2.07	1.20	0.60	2.07	0.86	0.40	2.18	1.25	2.18	0.94
TOTAL (Max. = 10.00)	**7.74**	**7.23**	**6.63**	**6.28**	**5.43**	**4.97**	**7.41**	**6.75**	**5.94**	**4.97**
RANKING	**1**	**3**	**5**	**6**	**8**	**9 (Tie)**	**2**	**4**	**7**	**9 (Tie)**

High Ranking	
Medium High Ranking	
Medium Low Ranking	
Low Ranking	

The Cost Effectiveness criteria drove the ultimate ranking of alternatives by mode, as they quantitatively classify the performance of each alternative while making up 25 percent of the total score. Prior to the application of the cost effectiveness performance measure, the Modern Streetcar and LRT alternatives consistently outperformed the BRT alternatives, due to superior qualitative scoring for their potential to enhance the urban environment and to support redevelopment within a half-mile of Beltline stops.

Due to the Cost Effectiveness criteria, however, BRT surpassed the rail modes in the total scoring within each alignment. For the Eastside-King Memorial alignments (B1 and B2), Modern Streetcar consistently outranked LRT, again due to superior overall performance in cost effectiveness.

Public Outreach Approach and Input

The outreach process used a variety of methods for engaging and informing the public including stakeholder interviews, meetings, workshops, speaker's bureau sessions and newsletters. As a result of these outreach efforts, valuable input was incorporated into the Locally Preferred Alternative (LPA) decision-making process. Given below are the resounding themes presented during the August 2006 public meetings and through subsequent comments:

- A general preference for Streetcar or Light Rail as the preferred mode of transit.
- Overwhelming opposition towards Bus Rapid Transit as the preferred mode of transit.
- Alternatives B3 and B1 were the most highly favored alternatives.
- Significant concerns expressed were environmental impact, efficiency, compatibility with parks and trails, transit's ability to spur development, access for persons with disabilities, pavement on the right-of-way, keeping current with technology, and connectivity of proposed routes.
- A strong preference in favor of the Eastside-Inman Park/Reynoldstown alignment as compared to the Eastside-King Memorial alignment.
- The public was very concerned about their opinions and preferences actually being factored into the decision making process.
- Overall, the public was supportive of the Beltline project.

Alternatives Recommended for Consideration

The following recommendations were presented to the MARTA Board of Directors for action regarding the Beltline.

As indicated in Table 2, **Alternatives B1 *BRT***, **B3 *BRT*** and **B1 *Streetcar*** achieved more than 70 percent of the maximum available score and were classified as "High" in the Detailed Screening of alternatives. Alternative **B3 *Streetcar***, with the highest score among alternatives classified as "Medium-High", would likely have achieved slightly more than 70 percent of the maximum available score if LRT was not fatally flawed for evaluation in alignments B3 and B4. Therefore, this alternative was also brought forward for further consideration. These were the alternatives which most effectively satisfied the Purpose and Need Statement developed for the Beltline AA.

Among the ten alternatives analyzed, this set reflects the superior ranking of the Northwest-Lindbergh alignment options and the BRT and Modern Streetcar technology options. **Alternative B1 *BRT*** attained the highest score due to the Northwest-Lindbergh and BRT elements, plus the slight advantage of Alternative B1 (King Memorial) over Alternative B3 (Inman Park/Reynoldstown) among Eastside alignment options.

By including **Alternative B3 *BRT***, the set of recommended alternatives reflect the moderate public interest and the greater comparability among Eastside options when compared to the Northwest options.

By including **Alternatives B1 *Streetcar*** and **B3 *Streetcar***, the recommended alternatives take into account the highest-performing non-BRT alternatives, given reservations expressed by much of the general public over the practicality and community-level effects of BRT relative to other modes. The B1 *Streetcar* alternative would be the highest performing alternative (along with B1 *LRT*) before the consideration of Cost Effectiveness criteria. Similarly, the B3 *BRT* alternative would be the fourth best performing option (after B1 *BRT*), due to the slight advantage in the Eastside-King Memorial alignment.

The Detailed Screening process narrowed four alignment alternatives to two and three technology alternatives to two. Recommendations for the selection of an LPA from among the above four options, was essentially tiered by alignment (B1 or B3) and by mode (BRT or Streetcar).

Staff Recommendation

The technical results of the Beltline AA show the continuous loop (Lindbergh to Lindbergh) as the best performing option, with the East Line connection at the King Memorial station. The best performing technology, considering capital and operating cost estimates and environmental impacts was Bus Rapid Transit (BRT). During the Public Outreach process, the preference indicated by the community and major stakeholders was the continuous loop (Lindbergh to Lindbergh) with the East Line connection at the Inman Park/Reynoldstown station to capture development along Moreland Avenue and increase alignment consistency with the TAD boundary. The general public and business and political stakeholders also strongly supported rail technology over bus rapid transit.

MARTA Staff recommended the B3 Alternative (Lindbergh-to-Lindbergh Loop via Inman Park/Reynoldstown) as the preferred alignment with the specific rail technology to be defined in the next phase of study.

Advantages of the recommended alternative are listed as follows:

- Retains continuous loop as prescribed in original Beltline concept
- Alignment option generated the highest ridership
- Rail technology indicates the permanence of transit desired by developers for transit-oriented development
- Increases transit accessibility and connectivity to and within forty-five neighborhoods
- Predominantly contained within the approved Tax Allocation District
- Supported by the City of Atlanta and Beltline Partners
- Strong community and business support for rail technology operating along the continuous loop

Action by MARTA Board of Directors

After consideration of the aforementioned alternatives and technologies, the MARTA Board of Directors formally adopted staff's recommendation of the Alternative B3 alignment configuration as the Locally Preferred Alternative (LPA) with an unspecified rail technology to be determined in the next phase of study.

Next Steps

MARTA will pursue all opportunities to advance the development of the Beltline LPA into the next phases of project development, including preliminary engineering. To maintain the Beltline's eligibility for federal funds, the project development process will follow FTA procedural guidance for projects competing for New Starts funding. Key tasks will include:

- Developing a Strategic Implementation Phasing Plan and Identification of a Minimum Operable Segment (MOS);
- Coordination with FTA on establishing the specific Purpose and Need and Transportation System Management Alternatives for the MOS;
- Preparation of preliminary project management and financial plans to update the full Beltline LPA in the Regional Transportation Plan by the Atlanta Regional Commission;
- Completion of scoping activities required under the National Environmental Policy Act (NEPA); and
- Provision of project justification and financial data to FTA as a prerequisite to entry into the preliminary engineering phase.

Continued involvement of the public and continued coordination with regional stakeholders is vital for ensuring meaningful progress through these next steps of project development.

1.0 Introduction

The Metropolitan Atlanta Rapid Transit Authority (MARTA) has completed an Alternatives Analysis (AA) in an effort to identify and evaluate transit improvements within the Beltline corridor that will improve local and regional mobility, accessibility and connectivity and support the City of Atlanta's redevelopment plans. The Beltline is a 22-mile loop of existing rail corridor that encircles the City of Atlanta's Central Business District (CBD), specifically the Downtown and Midtown areas.

This Detailed Screening Report documents the final screening of viable alternatives by technology and alignment within the Beltline Corridor study area. The alternatives that best satisfy the Detailed Screening criteria were brought forward by MARTA staff for consideration by the MARTA Board of Directors, which ultimately determined the most suitable option for a Locally Preferred Alternative (LPA). The decision reached by the MARTA Board included the B3 alignment alternative to be served by rail technology. The precise type of rail technology (light rail or modern streetcar) will be determined during the environmental analysis phase of the project development process.

In February 2003, MARTA initiated the Inner Core Transit Feasibility Study to examine the viability of a major transit investment in the central portion of the Atlanta metropolitan area. This Inner Core study principally evaluated two concepts, the Beltline and C-Loop. The feasibility was determined for four concepts based on meeting mobility needs, land use development and redevelopment plans, environmental effects and cost effectiveness. Concerns expressed during the Feasibility Study included improving economic development, reducing traffic congestion, ensuring environmental justice and air quality improvement.

In March 2005, the MARTA Board approved the Feasibility Study and the initiation of the Alternatives Analysis. The MARTA Board approved a resolution in January 2006 to modify the study approach by splitting the two concepts, the Belt Line and the C-Loop, into separate, yet concurrent studies.

1.1 Project Development Process

The purpose of the Inner Core Transit Feasibility Study was to assess the type of transit needs that exist within the inner core of Atlanta, and determine the most appropriate transit investments to meet those needs, which include expanded use of the existing transit system. It provided a means for refining the Beltline and C-Loop proposals and evaluating the concepts with consideration of a broad

range of alternative transit technology modes and alignments. The final task of the study was to provide a determination of the feasibility of defined transit options. The Inner Core Transit Feasibility Study was conducted in four phases: Stakeholder Identification and Issue Development, Inner Core Study Inventory and Data Gathering, Concept Plan and Alternative Definition, and Feasibility Determination.

The Stakeholder Identification and Issue Development phase involved engaging the community in a public discussion of the concepts, the project purpose and need, and potential benefits and impacts of implementation. The next phase, Inner Core Study Inventory and Data Gathering, included investigation of the study area's transportation system conditions, demographic and community features, population and employment trends, major activity centers and points of interest, and land use and development patterns. The Concept Plan and Alternative Definition phase developed a conceptual level plan to potential transit modes and alignments for each of the transit alternatives. The fourth phase, Feasibility Determination, determined the engineering requirements and overall feasibility of each of the transit alternatives, by reviewing a conceptual assessment of mobility improvements, land use development and redevelopment opportunities, environmental effects, equity issues and costs. Public involvement was an on-going element through all four phases of the feasibility study. More information regarding this stage of project development is provided in the MARTA *Inner Core Feasibility Wrap-Up Report* (March 2005).

The evaluation process for the Beltline AA Study involved two steps, Prescreening/Fatal Flaw Analysis and Detailed Screening evaluation, of which the latter is the subject of this report. The first step, Prescreening/Fatal Flaw Analysis, reduced the "universe of alternatives" to combinations of alignment and technology that lack unreasonable constraints in implementation and continue to support the purpose and need for the study. Through the prescreening evaluation of five potential technologies, three modes, Bus Rapid Transit (BRT), Modern Streetcar (also referred to as 'Streetcar' in this document), and Light Rail Transit (LRT), received the highest ratings. These three technologies were carried forward into Fatal Flaw Analysis, in combination with four alignment alternatives refined with public and stakeholder input following the Feasibility phase and the separation of the C-Loop project elements. The Fatal Flaw analysis revealed cost-prohibitive and potentially severe adverse impacts associated with the options to either overpass, underpass, or circumvent the CSX Hulsey Yard and MARTA heavy rail tracks in east Atlanta for Alternatives B3 *LRT* and B4 *LRT*. As a result, these two alternatives were dropped from further consideration, leaving ten alternatives for Detailed Screening, which constitutes the second step in the AA evaluation process. More details regarding the first step in this process are detailed in the MARTA Prescreening/Fatal Flaw Analysis technical memorandum (June 2006).

The alternatives that emerged from the prescreening analysis were evaluated by applying criteria and performance measures developed with input from the public and other key stakeholders during the Feasibility phase. The results of this evaluation are documented in this Report.

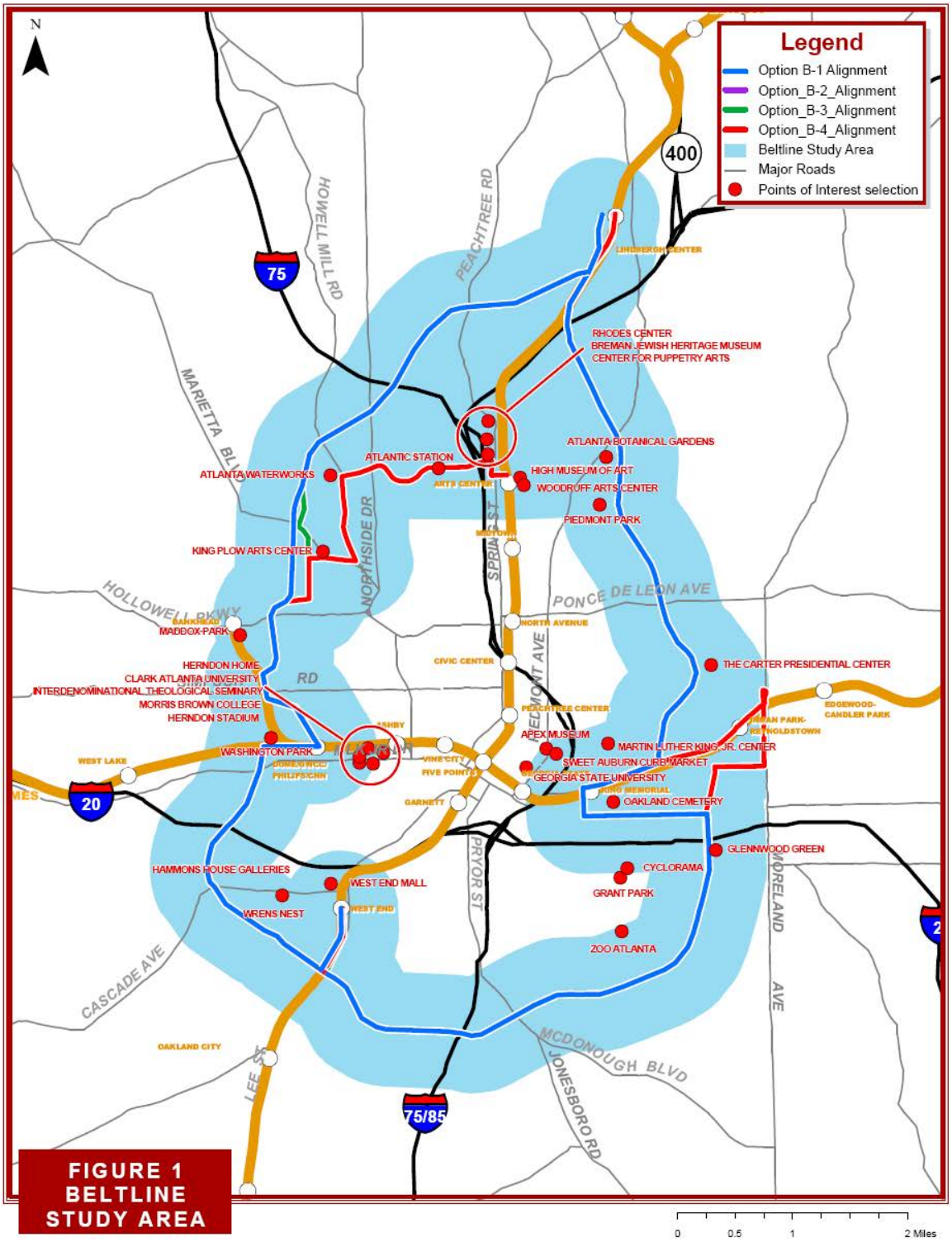
1.2 Study Area Description

The Beltline Corridor study area includes a 22-mile loop of existing rail corridor that encircles the Downtown and Midtown areas of the City of Atlanta. The corridor contains many of Atlanta's residential neighborhoods, major employment centers, major parks and recreation areas, as well as a significant number of major attractions and points of interest. The study area identified in Figure 1-1 follows a series of railway tracks, approximately two to four miles from the center and encircles downtown Atlanta. The project connects the existing MARTA rail network with up to 45 established residential communities, new affordable housing developments, light industrial areas, and abandoned areas identified for redevelopment located around the downtown area. The Beltline Corridor would support the metropolitan Atlanta regional transit system, which includes the existing MARTA rail and bus network, two future bus rapid transit projects along I-75, I-285, Memorial Drive and Buford Highway, and the pending commuter rail service between Lovejoy and downtown Atlanta.

1.3 Report Organization

This report describes the process of evaluating alternatives through Detailed Screening (Chapter 2) and discusses the definition of the Transportation Systems Management (TSM) Alternative, background transit network assumptions, and the remaining ten Beltline Alternatives (Chapter 3) subject to this screening process. The report then details the individual criteria for evaluating and comparing corridor mobility (Chapter 4), measures related to the environment, economic development and land use (Chapter 5) and measures of cost effectiveness for each alternative investment (Chapter 6). Following a summary of the public involvement process during the AA phase of project development (Chapter 7), the report reviews the results of the detailed screening criteria (Chapter 8), compares the alternatives by alignment and technology and documents recommendations that were presented to the MARTA Board for consideration and the next steps.

Figure 1-1: Beltline Study Area



2.0 Alternatives Evaluation Process

This *Detailed Screening Report* follows the evaluation methodology outlined in further detail in the *Beltline Evaluation Methodology Report*; last revised in July 2006 and available under separate cover. Chapter 2.0 will begin with an outline of the Federal Transit Administration (FTA) project development process. This discussion is followed by identification of study area issues, goals and objectives which serve collectively as the foundation for the definition of alternatives and the means of evaluation. The chapter will conclude with a discussion of the Prescreening/Fatal Flaw analysis which preceded this Detailed Screening stage, and the evaluation process used to conduct the screening of remaining alternatives. Details on the alternatives which remain for Detailed Screening are further defined in Chapter 3.0.

2.1 Federal Transit Project Development Process

Major transit investments can receive Federal funding through a mechanism called the New Starts Program. The New Starts Program is administered by the Federal Transit Administration (FTA) and institutes the process and criteria by which projects across the country are evaluated for federal funding. Projects eligible for New Starts funding include any proposed fixed guideway system, such as heavy rail, commuter rail, light rail, automated guideway transit, people movers and exclusive facilities for buses and other high occupancy vehicles.

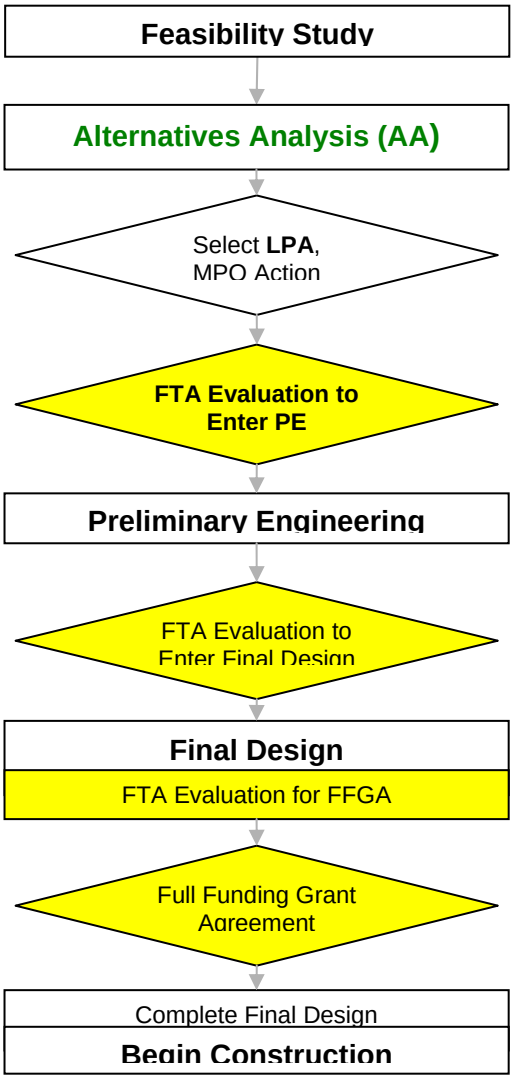
New Starts projects must emerge from a locally-driven, regional multimodal planning process in order to be eligible for federal funding. The planning and project development process for all projects seeking New Starts funding includes three key phases--Alternatives Analysis, Preliminary Engineering and Final Design. Figure 2-1 illustrates how the Beltline Alternatives Analysis process fits into the overall FTA process for project development.

Proposed New Starts projects must be justified based on a comprehensive review of several criteria, including the following:

- Mobility Improvements
- Environmental Benefits
- Operating Efficiencies
- Cost Effectiveness
- Transit Supportive Land Use and Future Patterns
- Other Factors

These project justification criteria are intended to reflect the broad range of benefits and impacts, which may be realized by the implementation of the proposed New Starts investment.

Figure 2-1: FTA Project Development Process



2.2 Goals and Objectives

The development of the Purpose and Need Statement, July 2006 was a critical step in the Alternatives Analysis (AA) process and an important factor in determining and evaluating the various potential mobility solutions for the Beltline corridor. It built upon work that was accomplished as part of the Inner Core

Transit Feasibility Study (March 2005) and supplemented with information obtained through a significant public involvement process, regional plans and other regional transportation studies. The goals and objectives presented for this Alternatives Analysis form the basis for identifying the range and scope of project alternatives. Issues represent specific problems that must be addressed by the project alternatives and the goals and objectives provide benchmarks against which the project alternatives will be evaluated to select a LPA that can be further evaluated during future planning. The issues, goals and objectives are grouped into three categories: Mobility and Safety; Land Use, Development and Redevelopment; and Environmental, Social Equity, and Cultural Resources. They are listed below.

2.2.1 Mobility / Safety

Issue: Traffic conditions within the study corridor are congested during peak commuter hours due to neighborhood cut through traffic along the major highways into and out of the City. In 2000, 58 percent of vehicle miles traveled in the region occurred when the vehicle to capacity (v/c) ratio was over 0.9. In 2030, 67 percent of VMT is projected to occur in congested conditions. The resulting traffic on the local arterial roadways in the study area reduces mobility within the neighborhoods and limits efficient access to the activity centers within the project study area.

Goal: Improve mobility, access and reliability for personal travel within the Beltline Corridor.

Objectives:

- Improve transit connections to the existing MARTA rail and bus system by increasing the number of access points.
- Improve transit accessibility and connectivity among existing neighborhoods and to major destinations that are not currently accessible to the existing MARTA rail system.
- Increase transit accessibility options for transit dependent populations.

Goal: Contribute to a seamless, integrated regional multimodal transportation network that fully utilizes the capacity of the MARTA rail system, the existing bus systems and the existing roadway network.

Objectives:

- Improve transit options by increasing access and service continuity along the Beltline corridor.

- Provide for a cost-effective transportation investment.
- Contribute to a balanced regional transportation system that includes highways, transit, bicycle and pedestrian facilities.

Goal: Provide a bicycle and pedestrian friendly transit environment.

Objectives:

- Provide transit facilities that fully accommodate bicycle and pedestrian travel modes with direct links to employment and retail centers, existing and proposed recreational facilities and residential areas.
- Develop transit facilities that encourage a safe and efficient bicycle and pedestrian collector system.
- Support the City of Atlanta's Parks, Open Space and Greenways Plan

2.2.2 Land Use / Development / Redevelopment

Issue: The current transportation system is struggling to accommodate development pressures and will not be able to support increased development in the Beltline Corridor.

Goal: Promote seamless Intermodal connectivity, increase community access to the existing rail rapid transit network and support the development of a continuous urban fabric through the core of the Atlanta Region.

Objectives:

- Provide transportation facilities that connect developing communities around the Beltline with the existing roadway and transit networks.
- Increase access to the MARTA rail network

Goal: Provide compatible transportation solutions that support ARC's RDP by connecting existing neighborhoods and facilitating emerging trends towards mixed-use redevelopment.

Objectives:

- Support redevelopment and revitalization efforts in the Beltline Tax Allocation District (TAD) by increasing access and providing alternative mobility alternatives to the automobile.
- Accommodate the expansion of institutional and service oriented facilities.

Goal: Support local and regional land use development policies and plans, such as the "New Century Economic Development Plan for the City of Atlanta" - and fulfill the needs of emerging transit supportive land uses.

Objectives:

- Support the City of Atlanta's economic development initiatives and other regional and local development.
- Identify transit solutions that support compatible scale mixed-use development projects.
- Identify transit options that support the Beltline TADs within the Beltline study area.

2.2.3 Environmental / Social Equity / Cultural Resources

Issue: Environmental conditions have historically suffered as a result of development and improvements to transportation infrastructure.

Goal: To improve air quality, reclaim Brownfields, promote equity and preserve natural resources.

Objectives:

- Provide a transportation system that offers a balance between transportation needs and environmental quality.
- Develop viable transit alternatives to the use of single occupancy vehicles in order to improve air quality in the region.
- Support redevelopment of Brownfield sites for transit-oriented development opportunities.
- Provide a balanced transportation solution that provides improved mobility options for transit dependent populations and economic redevelopment in low-income areas.
- Provide efficient transportation connections between regional and local parks and recreational facilities in the study area and existing communities and redevelopment projects.

2.3 Evaluation Process

During the Alternatives Analysis, all possible alternatives are evaluated through a two-step process to select a LPA. In addition to the fixed guideway alternatives, a TSM Alternative is developed to provide a basis for comparison against the other project alternatives. The TSM Alternative requires approval by FTA and is

defined as the “best that can be done” to improve transit service in the corridor without major capital investment in new infrastructure.

The AA utilizes a two-step process of pre-screening and detailed screening, applying increasingly detailed and comprehensive measures of effectiveness to a decreasing number of alternatives. The first step in the screening process is the Prescreening Analysis, which is intended to reduce the universe of alternatives (combinations of alignment and mode) to only those alternatives that can feasibly be constructed and support the goals of the project.

The Prescreening/Fatal Flaw Analysis consisted of three components: 1) a review of transit technologies and the selection of the most appropriate technologies for the Beltline study area, 2) development of the universe of alternatives; and 3) evaluating the list of all possible alternatives identified for this project by applying qualitative measures and eliminating all alternatives that do not support the goals for the Beltline study area.

During the Detailed Screening phase, the remaining alternatives resulting from the Prescreening analysis are subject to a more detailed qualitative and quantitative evaluation using measures that correspond to the detailed objectives for the project.

The screening of alternatives is documented in an evaluation matrix showing the qualitative and quantitative results of each alternative, relative to the other alternatives. The evaluation matrices will be accompanied by written summaries highlighting the trade-offs that should be considered when comparing the advantages and disadvantages of each alternative. Because different criteria may be considered more important than others, MARTA has made an effort to apply different weights of importance to each criterion to help decision-makers interpret the evaluation results. The summaries will provide a basis for decision-makers to weigh the advantages and disadvantages of each alternative, and ultimately decide upon a LPA that best satisfies the goals and objectives of the project.

2.3.1 Prescreening/Fatal Flaw Phase

The Prescreening/Fatal Flaw Analysis phase of the evaluation process allowed for early identification and removal of alternatives that either failed to support the goals and objectives of this study, or proved to be difficult to finance, construct or operate efficiently.

The Prescreening evaluation explored streetcar, light rail transit (LRT), bus rapid transit (BRT), local and express bus services, and diesel multiple units (DMUs) compliant with Federal Railroad Administration (FRA) regulations as possible

technologies for operation within the study area. Evaluation factors included an assessment of whether each technology operates in proven revenue service and is compatible with the existing MARTA system, whether it proves compatible with the proposed spacing of stations along the Beltline corridor, whether it holds potential for significant effects in terms of safety, air quality emissions and visual intrusiveness, and whether it poses unreasonable capital costs relative to other technology alternatives.

Of the five (5) technologies, the FRA-compliant Diesel Multiple Unit (DMU) modal alternative performed significantly lower than other alternatives and was dropped from further analysis. While DMU did not fare well for operation along the full Beltline corridor, which is a desired operating assumption based on feedback during the Feasibility phase, the technology may be appropriate for more specialized corridor applications. For example, in corridors where there is an existing, lightly-used freight railroad, DMU could have significant advantages in cost and implementation feasibility that could possibly outweigh its disadvantages in system compatibility and proven technology.

Bus was the second lowest performing alternative, and while it will not be carried forward as a possible Build Alternative, the technology is appropriate as an operating mode in a TSM Alternative, which is defined in Chapter 3.0. The Prescreening analysis therefore leaves up to three (3) technologies for further consideration in the Beltline study area:

- Bus Rapid Transit (BRT)
- Light Rail Transit (LRT), and
- Modern Streetcar (also referred to as Streetcar in this Report)

Development of a “Universe of Alternatives “ involved the identification of conceptual alignment alternatives deemed feasible during the Feasibility Phase of the Inner Core study and subsequently refined with stakeholder input following the January 2006 decision by the MARTA board to separate the C-Loop and Beltline analyses. Table 2-1 identifies the four (4) alternative alignments which resulted from this refinement, the number of potential stations along each alignment based on public input, and the connections with MARTA heavy rail service. Further details on the refinement process are provided in the *Prescreening/Fatal Flaw Analysis Report*, updated June 2006 and available under separate cover.

Essentially developed to address connectivity needs and engineering constraints, there remain two sets of heavy rail connection alternatives, referred to as “Northwest” alignment alternatives in this report, on the MARTA North Line from the Northwest quadrant of the Beltline (Arts Center and Lindbergh Center MARTA stations). For similar reasons, two sets of alternative connection points,

referred to as “Eastside” alignment alternatives in this report, along the MARTA East Line (King Memorial and Inman Park-Reynoldstown MARTA stations).

The four (4) alignment alternatives were merged with the three (3) remaining technologies, generating a total of twelve (12) alternatives at the outset of the Fatal Flaw Analysis. The qualitative screening of each alternative included the assessment of the following criteria:

Table 2-1: Alternative Alignments

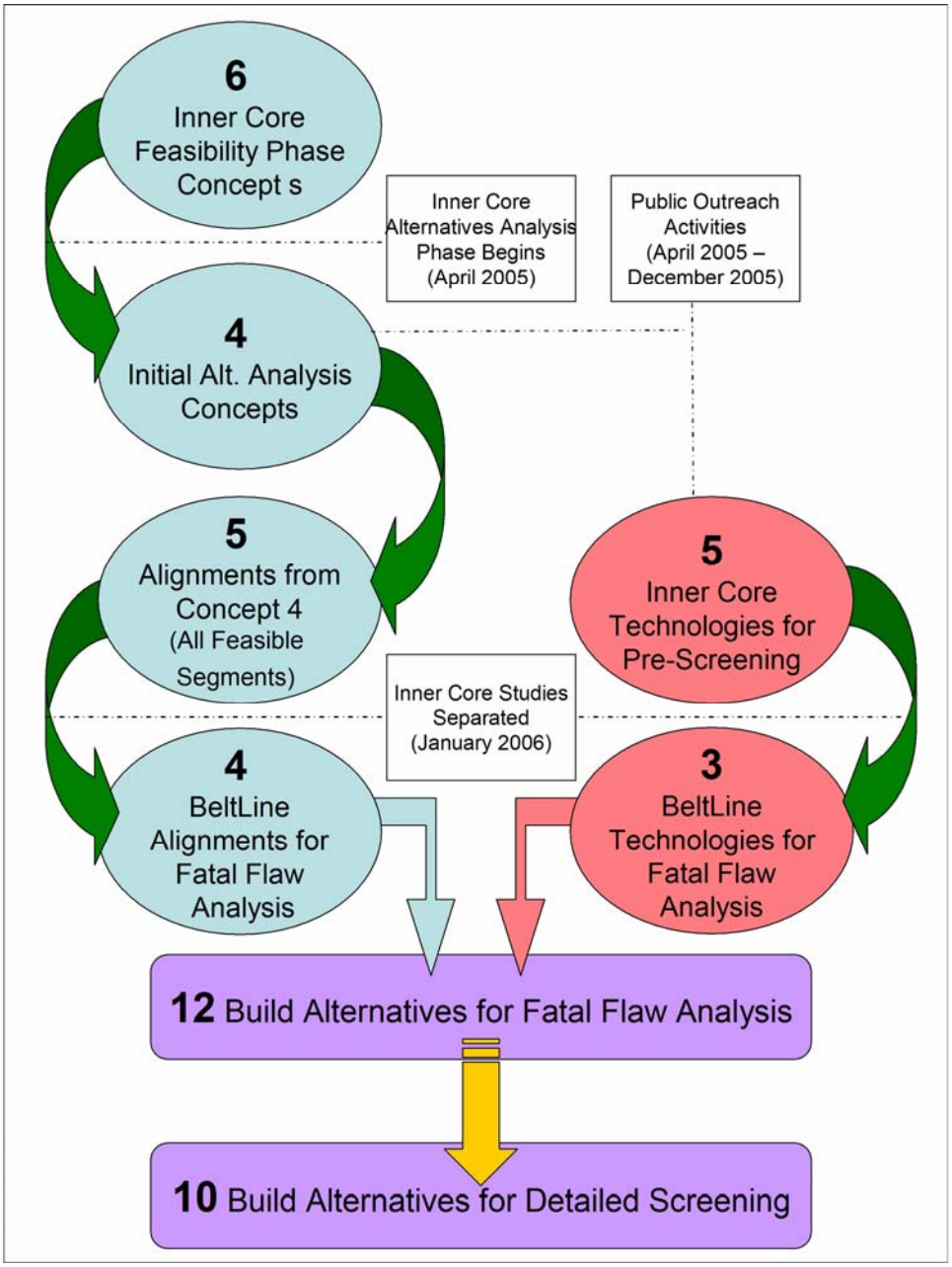
Alternative Alignment	Potential Stations (Preliminary)	Connection with MARTA Heavy Rail:			
		North Line	**South Line**	**East Line**	**West Line**
B1	40	*Lindbergh*	West End	*King Memorial*	Ashby
B2	39	*Arts Center (from west), Lindbergh (from east)*	West End	*King Memorial*	Ashby
B3	41	*Lindbergh*	West End	*Inman Park-Reynoldstown*	Ashby
B4	40	*Arts Center (from west), Lindbergh (from east)*	West End	*Inman Park-Reynoldstown*	Ashby

- **Ability to Promote Redevelopment Goals:** ability to support and complement community redevelopment goals and objectives, including those identified as part of the Beltline Redevelopment Plan by the Atlanta Development Authority,
- **Significant Community Impacts:** estimated significant community impacts/disruptions for all land use categories (residential, business, community facilities, churches, etc.),
- **Operating Impacts:** in-street operation, at-grade crossings, etc.,
- **Difficulty of Implementation:** right-of-way availability, railroad agreements, unusual structures, etc.

Application of these criteria revealed no fatal flaws relating to significant community impacts, ability to promote redevelopment goals, or operating impacts. As discussed in Chapter 3.0, common engineering constraints for the two LRT alternatives in the Inman Park-Reynoldstown area resulted in fatal flaws, given the unavailability of alternate strategies that were constructible, not cost-prohibitive and not severely disruptive to neighboring communities. The effect of the Fatal Flaw criteria was therefore the reduction of alternatives from twelve to ten alternatives for Detailed Screening evaluation. Figure 2-2 illustrates

the evolution of the number of alternatives considered from the conclusion of the Inner Core Feasibility phase to the Prescreening/Fatal Flaw Analysis.

Figure 2-2: Summary of Development of Alternatives through Fatal Flaw Analysis



2.3.2 Detailed Screening Phase

The alternatives that are carried forward to the Detailed Screening were designed through conceptual engineering to allow more precise estimates of costs and impacts, and operating plans and ridership forecasts will be refined.

The intent of the Detailed Screening stage was to recommend a LPA that best responds to the goals and objectives of the project. Emphasis was placed on developing evaluation measures that were compatible with the project purpose and need in addition to developing measures that will address local and federal guidelines.

Alternatives will be evaluated using primarily quantitative performance measures, grouped into four major categories. Three categories correspond to the project goals and objectives. The fourth category includes a comparison of costs relative to ridership. The four categories are as follows:

- Mobility & Accessibility
- Land Use and Redevelopment
- Environmental Effects
- Cost-Effectiveness

The following sections describe in more detail the measures to be used for each of the major goal categories.

Mobility Improvements

This category includes measures of transit ridership, and measures of transit service quality and effectiveness.

Transit Ridership

Transit ridership was analyzed through the following performance measures.

- *Year 2030 total annual ridership for the new facility*
- *Year 2030 total annual new transit riders (linked trips) on the regional transit system*
- *Impact on existing transit facilities*

For the first two measures, the higher the ridership was, the higher the rating. The data source was the Atlanta Regional Commission (ARC) regional travel demand model. The third measure was evaluated qualitatively, based on an analysis of ridership model results. The effect of the new facilities on the existing rail and bus network was considered. Alternatives that divert ridership from

existing bus routes received lower ratings than alternatives that add new riders to the existing routes. Additionally, alternatives which reduced demand for rail-to-rail transfers at the Five Points MARTA Station, a primary indicator of passenger trips more directly accommodated via the Beltline, received higher ratings.

Travel Time Savings

Travel-time savings were analyzed through the following performance measures. The higher the savings totaled, the higher the rating.

- *Annual regional travel time savings for alternatives compared to Baseline*

Change in Transfers

The change in the number of transfers was evaluated by assessing the following variable. The lower the value derived, the higher the rating. This measure was derived from data produced by the ARC regional travel demand model.

- *Change in transfers: average number of boardings per linked trip*

Transit Dependent Service

The following performance measure was used to evaluate how well transit dependent persons living in the study area would be served by the new transit facilities.

- *Year 2000 minority population within a half-mile of stations.*
- *Year 2000 low-income populations within a half-mile of stations.*
- *Year 2000 households without access to automobiles within a half-mile of stations*
- *Year 2000 elderly populations (over 65 years of age) within a half-mile of stations*

Land Use and Redevelopment

To assess the ability of each alternative to address this goal, several criteria related to potential land development opportunities and transit supportive land use were used.

Transit Supportive Land Use

To assess how transit supportive the land use is for an alternative, two quantitative measures were applied.

- *Projected year 2030 employment within a half-mile of stations*
- *Projected year 2030 population within a half-mile of stations*

In addition, a qualitative measure was used to tally the number and importance of major trip generators along the alternative, e.g. universities, stadiums, major attractions.

- *Accessibility to major cultural, educational, and recreational facilities*

Development Incentives

These measures evaluated the potential land development opportunities, and the ability of an alternative to complement existing economic activity:

- *Acres of vacant parcels or underutilized land within a half-mile of stations*
- *Acres of land with economic and/or zoning incentives within a half-mile of stations*

Enhancement of Urban Environment

One additional qualitative measure was used to assess the impact of each alternative on the visual quality of the urban environment. This measure reflects the relationship of the proposed guideway and stations to the surrounding neighborhoods.

- *Potential of the transit system to enhance the visual quality of the urban environment*

Environmental Effects

Environmental criteria will evaluate impacts to the natural and built environments, as well as the communities and individuals within the study area.

Air Quality

The Clean Air Act Amendments (CAA) of 1990 requires that each metropolitan area create regional long-range plans that include transportation investments, which reduce overall emissions. Based on travel demand model results, emissions were forecast for each alternative depending on changes to vehicle miles traveled and average speeds on the road network as well as the potential emissions from the investment itself.

- *Change in pollutant emissions: tons of nitrogen oxides (NOx) and volatile organic compounds (VOCs) within the region, relative to the Year 2030 Baseline (TSM) alternative*

For this measure the lower the forecasted emissions, the higher the score.

Community Impacts/Disruptions

Throughout the study, special attention was directed towards assessing project impacts on neighborhoods, residences, and businesses located along the alignments or near the proposed stations. The following measure was used to assess community impacts.

- *Estimated number of partial or full property displacements and acquisitions to residences, businesses, community facilities, churches, etc.*

The lower the number of property impacts identified, the higher the rating.

Noise Impacts

Using the FTA's guidance on transit noise assessment for intermediate-capacity steel-wheeled transit; this evaluation included an analysis of the potential impacts of noise associated with the project alternatives. The following measure was used:

- *Number of households (residential houses and apartment buildings) within 200 feet of the transit alternatives*

The lower the value of this measure the higher the rating.

Cultural and Natural Resources

The preservation of parklands, historic and archaeological resources is regulated under Section 106 of the National Historic Preservation Act, Section 4(f) of the Department of Transportation Act of 1966 and Section 6(f) of the Land and Water Conservation Act. Wetlands are protected by the Army Corps of Engineers, the Georgia Department of Natural Resources. The following measure was used to evaluate the project alternatives with regard to environmentally sensitive areas.

- *Parks, wetlands, historic and archaeological sites, historic districts, religious properties and cemeteries with potential negative impacts*

The lower the values of these measures the higher the rating. To rate the community impacts, the evaluation used a tally of identified impacts within the construction right-of-way and the noise screening distance of 200 feet.

Traffic Congestion Effects

The following performance measure will help to evaluate how effective the alternatives are in reducing automobile travel.

- *Reduction of VMT relative to the Year 2030 No Build Alternative.*

An additional qualitative measure was used to assess any negative impacts on traffic that could be caused by the operation of a new facility that may cross or operate along some streets in the area.

- *Operating impacts, e.g. in-street operation, at-grade crossings, etc.*

Cost Effectiveness

The costs associated with each alternative were evaluated through criteria related to the estimated costs associated with the development and operation of the facility, and through criteria related to the cost effectiveness of the alternative.

Costs

The following measures of absolute costs were used:

- *Capital cost (2006 dollars) including construction, vehicles, right-of-way and other associated items*
- *Incremental annual operating and maintenance (O&M) costs, relative to the Baseline (TSM) alternative; costs will be projected for 2030 conditions, using 2006 dollars*

The lower the values of these items the higher the rating.

Cost Effectiveness

Cost effectiveness was examined with the following measures. Most of these are measures that are or have been required by FTA as part of the New Starts evaluation process.

- *Net operating and maintenance cost per passenger mile: regional transit incremental O&M cost divided by regional transit passenger-miles*
- *Incremental cost per unit travel time saved, defined as: total annualized capital cost + incremental O&M costs, divided by the travel time savings, in dollars per hour*
- *Incremental cost per new rider; this measure combines annualized capital costs and annual incremental O&M costs, divided by Year 2030 total annual new transit riders (linked trips) on the regional transit system*

For these measures, the lower the values the higher the rating.

Table 2-2 lists the 23 measures that will be used in the Detailed Screening analysis, five of which are qualitative.

Table 2-2: Detailed Screening Criteria

PERFORMANCE MEASURE	DESCRIPTION	WEIGHT
Mobility & Accessibility		
Total Riders	Year 2030 annual ridership	0.05
New Riders	Year 2030 new riders, annualized	0.06
Impact on Existing Transit Facilities	*Qualitative:* Diversion from/enhancement of existing rail and bus Transit routes	0.04
Travel Time Savings	Annual regional travel time savings (millions of hours)	0.06
Change in Regional Transfers	Number of transfers per linked trip	0.03
Transit Dependent Service	Year 2000 minority populations, low income populations, households without access to automobiles and elderly populations	0.06
	Category Sub -Total	**0.30**
Land Use & Redevelopment		
Employees near Stations	2030 employment within a half-mile of station	0.04
Residents near Stations	2030 population within a half-mile of station	0.05
Land with Development Incentives near Stations	Acres of land with economic and zoning development incentives within a half-mile of stations	0.04
Vacant / Underutilized Land near Stations	Acres of vacant / underutilized land within a half-mile of stations	0.05
Accessibility to major Cultural Educational & Recreational Facilities	*Qualitative:* Proximity of stations to parks, stadiums, universities, museums, etc.	0.04
Enhanced Urban Environment	*Qualitative:* Potential of the transit system to enhance the visual quality of the urban environment	0.03
	Category Sub -Total	**0.25**
Environmental Effects		
Change in Pollutant Emissions	Annual tons of regional NOx and VOC emissions	0.03
Potential Community Impacts	Number of estimated community impacts / disruptions to residences, schools, businesses, churches, etc.	0.05
Potential Noise Affected Households	Number of households within 200 feet of the alternative centerline.	0.03
Potentially impacted Cultural and Natural Resources	Number of historic and archaeological sites, parklands, cemeteries and wetlands potentially impacted.	0.03
Traffic Effects	Percent of Vehicle Miles Traveled in congested conditions in the study area	0.03
Operating Impacts	*Qualitative:* In street operations; at grade crossings, etc.	0.03
	Category Sub -Total	**0.20**
Cost Effectiveness		
Operating & Maintenance Costs (millions $)	Incremental annual operating and maintenance (O & M) costs, compared to the Baseline Alternative	0.05
Net Operating Cost per Passenger Mile	Incremental operating cost per passenger mile for regional transit	0.03
Capital Cost (millions $)	Capital costs for construction, equipment, etc.	0.05
Incremental Cost per Unit Travel Time Saved	Total annualized capital cost and incremental operating and maintenance costs divided by the annual regional travel time savings.	0.06
Incremental Cost per New Rider	Total annualized capital cost + incremental O & M costs, divided by new transit riders	0.06
	Category Sub -Total	**0.25**
	Total of Weights	**1.00**

Source: URS Corporation, June 2006

A numeric scoring system was used in the evaluation process. The numeric scores were accompanied by written summaries highlighting the trade-offs that must be considered when comparing the advantages and disadvantages of each alternative.

Each of the performance measures was assigned a weight, ranging from 0.03 to 0.06, with the sum of all weights equaling 1.0. As discussed above, the weights have been developed to reflect the goals of this study as well as input from the Technical Advisory Committee (TAC) and other stakeholders and members of the public.

In addition to the weights of each criterion, a criterion performance score was assigned to the alternatives depending upon how well they performed. For each performance measure, the alternatives were provided a score from 1 to 10, with 1 representing the lowest score and 10 representing the highest score. For each criterion, the alternative with the highest performance for each criterion received the 10-point score and decreasing scores will be assigned relative to decreased performance. Alternatives with performances between the highest and lowest received intermediate scores, relative to the other alternatives.

The numerical scoring system was based on the product of the criterion performance scores and the relative weights of each criterion and the resulting sum of all criteria. The resulting value was a composite score for each alternative. Since a criterion performance score of 10 represented the highest score for each criterion, the highest composite score indicated the best alternative.

Following the completion of the Prescreening/Fatal Flaw phase, an inherent penalty in the ranking methodology for both Eastside-Inman Park/Reynoldstown Alternatives was revealed due to the lack of a third mode (LRT, which is fatally flawed for Alternatives B3 and B4). As one example, when either the B3 or B4 Alternatives were tied for the lowest performance for a measure, it received a rating of 2, while the lowest rating an Eastside-King Memorial Alternative (B1 or B2) could have received under the same circumstances was a three. Accordingly, the concluding comparative analysis of the Eastside Alternatives took into account the hypothetical effect that the presence of the B3 and B4 *LRT* Alternatives would have posed on the ranking of the viable B3 and B4 modal options (BRT and Modern Streetcar). For each performance criteria, the separate ordering of patterns by alignment and by mode assisted in this supplemental analysis.

3.0 Identification and Development of Alternatives

This chapter provides descriptions of the physical features of the TSM Alternative and the Build Alternatives, including alignment and stations and the proposed BRT, Streetcar, LRT, and bus operating plans.

3.1 TSM Alternative

The TSM Alternative is defined by FTA as the "best that can be done" to improve mobility in the corridor without major capital investment in new infrastructure. Generally, TSM Alternatives are intended to serve the same markets and provide a level of service as close as possible to the Build Alternatives, but with relatively low cost approaches.

For the Beltline AA, the TSM Alternative includes two new bus routes serving the same markets as the Build Alternatives, as well as modifications to the feeder bus network. It also included a number of "background" improvements that are consistent across all of the alternatives.

3.1.1 Background Transportation Network

The TSM Alternative includes improvements that serve as the basis for all alternatives. The background transportation network included improvements in the *Mobility 2030* Regional Transportation Plan (RTP), adopted by the Atlanta Regional Commission (ARC) in December 2004. *Mobility 2030* recommendations are focused around five major transportation systems.

Mobility 2030 includes approximately 25 HOV projects on most of the radial freeways plus the northern half of I-285. Freeway and cross regional arterial improvements address the greatest mobility needs, while information technology improvements enhance the performance of transportation corridors. Bicycle and pedestrian projects promote safety and livability.

Major *Mobility 2030* transit improvements are largely focused on express bus and Bus Rapid Transit (BRT) service. Of particular relevance to the Beltline AA is the inclusion of fixed guideway BRT along I-20 East from downtown Atlanta to Stonecrest Mall, as connections are envisioned between the Beltline and the I-20 East BRT. Commuter rail to Lovejoy and the downtown Multimodal Passenger Terminal are also included. *Mobility 2030* includes an Inner Core project, which combined segments from the C-Loop and Beltline concepts (Concept C) evaluated during the Inner Core Transit Feasibility Study. For the background

transit network, this Inner Core project was removed, since the purpose of this study is to look at alternatives to that proposed project.

For the MARTA heavy rail system, the *Mobility 2030* network assumed service frequencies of 10 minutes in both the peak and off-peak periods. This assumption was modified in the background transit network for the TSM and Build Alternatives to reflect headways of 8 minutes in the peak and 10 minutes in the off-peak. The background transit network also included local bus service that is consistent with MARTA service levels as of July 2005, modified to reflect December 2005 service modifications.

3.1.2 TSM Transit Improvements

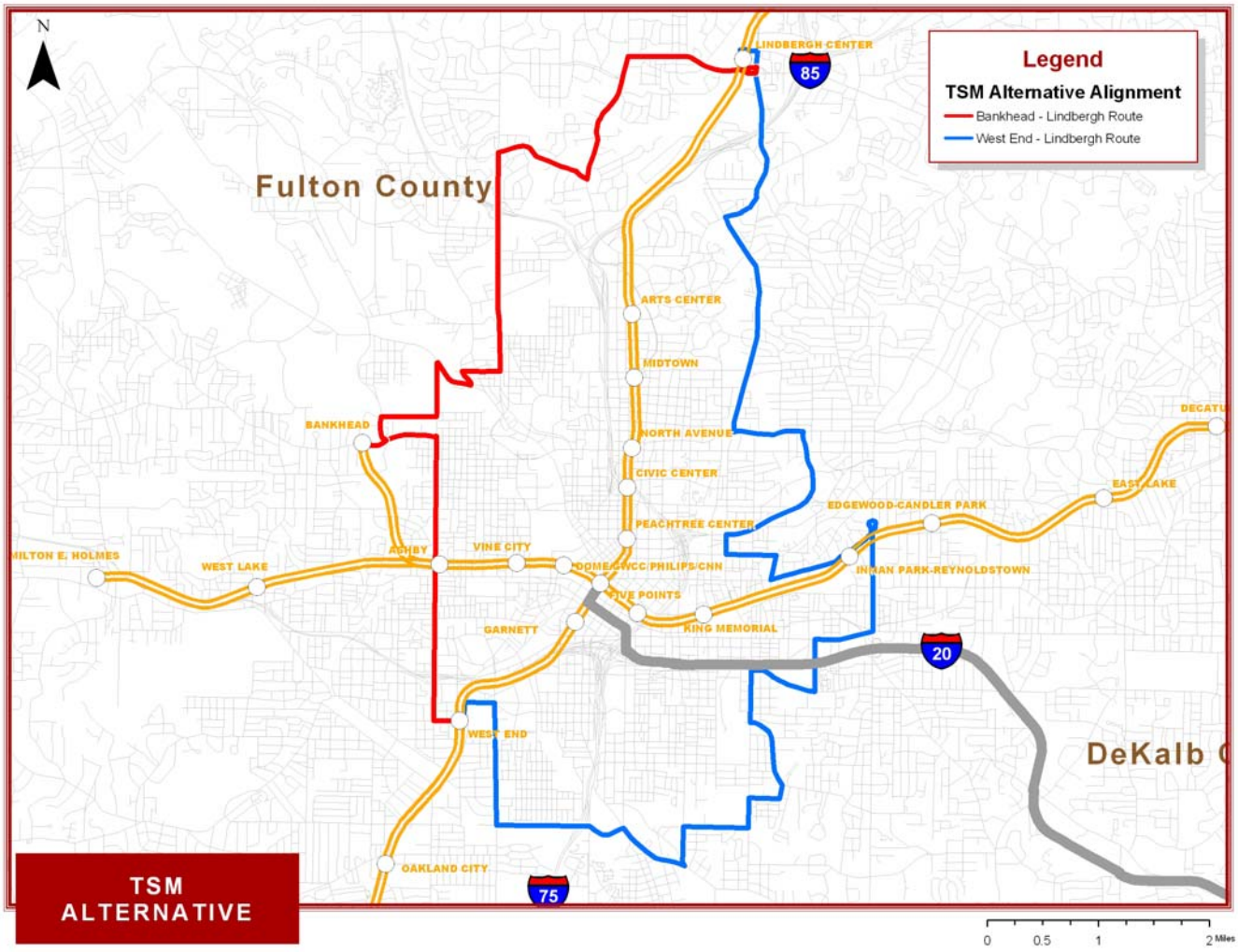
The TSM Alternative included two local bus routes generally following the Beltline loop alignment, using the existing roadway system. One route would operate on the west side of the loop, and the other one the east side of the loop. The two routes would connect at the Lindbergh Center and West End MARTA stations. Other MARTA heavy rail connections would be at Inman Park/ Reynoldstown Station, Ashby Station, and Bankhead Station.

Initial proposed service frequencies for both TSM routes were 8 minutes in the peak, 12 minutes in the midday, 15 minutes in the evening, and 30 minutes in the early and late periods. Line load forecasts from the travel demand model indicate the need for adjustments to TSM peak frequencies.

Line load forecasts from the travel demand model show the peak hour, peak direction line load on the Eastside TSM route to be 492 passenger trips, and the line load on the Westside TSM route is 478 passenger trips. It is assumed that both routes would be served by standard 40 foot MARTA buses, with seating for about 40 passengers, and with a load standard of 1.25. Thus, the maximum load per bus is 50 passengers. Both routes require 6-minute peak period frequencies to remain below a 1.25 load standard. Therefore, peak service frequencies for both routes were equilibrated from 8 minutes to 6 minutes. Midday service frequencies were not modified.

Figure 3.1 illustrates the TSM routes. Detailed descriptions of the routes follow.

Figure 3-1: TSM Alternative



TSM 1 – Westside TSM Route

This route generally follows the west side of the Beltline loop, operating from the West End Station to Lindbergh Center Station, via Bankhead Station. The proposed northbound alignment is as follows: (Left column first)

Begin at West End Station
Right on Lee Street
Left on York Avenue
Right on Joseph E. Lowery Boulevard
Left on Donald Lee Hollowell Parkway
Right into Bankhead Station
Left on Donald Lee Hollowell Parkway
Left on Marietta Boulevard
Right on Jefferson Street
Left on Joseph E. Lowery Boulevard
Right on Marietta Street
Left on Brady Avenue
Right on 10th Street
Left on Northside Drive
Right on Collier Road
Left on Peachtree Road
Right on Lindbergh Drive
Left on Piedmont Road
Left on Morosgo Drive
End at Lindbergh Center Station

The one-way distance on the route is approximately 11.3 miles with an estimated travel time of 52 minutes. At 6-minute frequencies, the route would require 20 standard 40-foot buses in the peak periods.

TSM 2 – Eastside TSM Route

This route generally follows the east side of the Beltline loop, operating from the Lindbergh Center Station to West End Station. The proposed southbound alignment is as follows: (Left column first)

Begin at Lindbergh Center Station
Right on Piedmont Road
Right on Montgomery Ferry Road
Left on Monroe Drive
Left on Ponce De Leon Avenue
Right on Freedom Parkway
Left on Boulevard
Right on Decatur Street into the King Memorial Station
Left on Grant Street
Left on Memorial Drive
Right on Moreland Avenue
Right on Glenwood Avenue
Left on Boulevard
Left on Confederate Avenue
Right on Edie Avenue
Right on Hamilton Avenue
Left on Boulevard
Right on Englewood Avenue
Left on Hill Street
Right on McDonough Boulevard
Left on University Avenue
Right on Metropolitan Parkway
Left on Ralph D. Abernathy Boulevard
Left on Lee Street
End at West End Station

The one-way distance on the route is approximately 15.8 miles with an estimated travel time of 73 minutes. At 6-minute frequencies, the route would require 28 standard 40-foot buses in the peak periods.

Feeder Bus Network

The TSM Alternative would be supplemented by modifications to the feeder bus system. Most notably, feeder bus route modifications are proposed in areas where existing bus routes essentially duplicate segments of the TSM routes. For example, route #52, which duplicates the Westside TSM route from the Ashby to Bankhead stations, would be eliminated. Similarly, a few other routes would be either eliminated or truncated. Individual route statistics are presented in Appendix A.

3.2 Build Alternatives

This section describes the Beltline Build Alternatives advanced to detailed screening for the Alternatives Analysis. These alternatives consist of ten (10) combinations of potential alignments and technologies.

Four potential alignments were identified, generally following the Beltline concept (Concept A) along freight rights-of-way as defined during the *Inner Core Transit Feasibility Study*, with options in two key areas, as described below. The potential alignments and general station locations are shown on the concept design sheets provided in Appendix C.

The CSX Hulsey Intermodal Facility is a major physical barrier to the connection between the northeast and southeast corridors of the Beltline. Hulsey Yard is currently a heavily used Intermodal yard for CSX Transportation. In addition to multiple active CSX rail lines, the elevated MARTA east rail line is adjacent to the northside of the property. The Beltline concept examined during the Inner Core feasibility study assumed that the line would follow the southeast periphery of Hulsey Yard to the Inman Park/Reynoldstown MARTA Station, requiring traversing the Hulsey Yard.

For the Alternatives Analysis, three potential alternatives to traverse Hulsey Yard were considered and assessed, including a fly-over ramp, modification and re-use of the Krog Street tunnel, and a new tunnel at Airline Street. Construction of an aerial structure spanning the MARTA and CSX tracks to support travel to/from Moreland Avenue via the Reynoldstown neighborhood could be disruptive and would not be cost-effective. Similar challenges would arise for a crossing below these tracks to Wylie Street, either by replacing the Krog Street underpass to

satisfy clearance requirements, or by constructing a new tunnel. Therefore, these options were deemed infeasible.

In light of these engineering constraints, the following two on-street alignments around the Hulsey Facility were identified:

King Memorial Station Option (Eastside-King Memorial): From the north, the alignment in the existing NS right-of-way would turn west to operate on-street on Decatur Street/DeKalb Avenue to the King Memorial MARTA Station. It would then operate south on Grant Street, east on Memorial Drive, and south on the Glenwood-Memorial Connector. South of Glenwood Avenue, the alignment would connect to the A&WP Beltline right-of-way. Alternative alignments B1 and B2 utilize this alignment.

Inman Park / Reynoldstown Station Option (Eastside-Inman Park / Reynoldstown): From the north, the alignment in the existing NS right-of-way would turn east to operate on-street on Decatur Street/DeKalb Avenue to the Inman Park/Reynoldstown MARTA Station. It would then operate south on Moreland Avenue via the connecting access ramps and west on Wylie Street, turning south to connect with the A&WP Beltline right-of-way in the vicinity of Kenyon Street. The alignment would then operate partially on-street, along the Glenwood-Memorial Connector, and re-join the Beltline right-of-way south of Glenwood Avenue. Alternative alignments B3 and B4 utilize this alignment.

Two options were also evaluated for the northwest segment of the alignment. The first option follows the northwest CSX Line and connects to the Lindbergh Center MARTA Station, as envisioned during the feasibility phase. MARTA's transit-oriented development at the Lindbergh Center Station is being designed to accommodate westside access for fixed guideway to the heavy rail station. However, accessing Lindbergh Center Station from the CSX corridor will require new bridges paralleling Norfolk Southern tracks and over passing local roads and Peachtree Creek. The second would provide an alternate MARTA connection to the Arts Center Station, operating on-street in the Howell Mill and 17th Street corridor. These two alignment options are described below:

Northwest CSX Line to Lindbergh Center MARTA Station Option (Northwest-Lindbergh): In the vicinity of Joseph E. Lowery Boulevard and Jefferson Street, the alignment would leave Lowery Boulevard to follow a freight spur through the large industrial block primarily occupied by the Mead facility. At the north end of the Mead property at West Marietta Street, the line would run north, crossing over the Norfolk Southern (NS) tracks and then running northeast along the CSX line. As the alignment approaches the NS Railway and MARTA North Line, the alignment would follow an alignment parallel to Peachtree Creek

and the NS corridor, connecting to the Lindbergh MARTA Station on-street via Lindbergh Drive. Alternative alignments B1 and B3 utilize this alignment.

On-street to Arts Center MARTA Station Option (Northwest-Arts Center): From Joseph E. Lowery Boulevard and Jefferson Street, the alignment would continue north along Lowery Boulevard. It would turn east onto an unnamed industrial driveway and cut through to Marietta Street, where it would cross the Norfolk Southern railroad tracks. The alignment would briefly go straight onto 8th Street before turning onto northbound Howell Mill Road. At the intersection of Howell Mill Road and Bishop Street, the alignment would turn to the east onto Bishop Street and southeast onto 17th Street. It would continue east on the 17th Street HOV lanes through the Atlantic Station development, crossing over Interstates 75/85 on the 17th Street bridge, until it reaches Spring Street. There, the alignment would begin a single track loop south on Spring Street, east on the proposed 15th Street Extension, north on W. Peachtree Street (past the Arts Center MARTA North Line station), and west on 17th Street. Alternative alignments B2 and B4 utilize this alignment.

The Prescreening analysis identified three technologies as potentially applicable to conditions in the Beltline study area. These are: Bus Rapid Transit (BRT), Modern Streetcar and Light Rail Transit (LRT).

The combination of three prescreened technologies (BRT, Modern Streetcar and LRT) and four potential alignments (Alignments B1 through B4) generated a total of 12 Build Alternatives for the Fatal Flaw analysis. The analysis of two Build Alternatives (B3 *LRT*, B4 *LRT*) revealed a common engineering constraint, namely, the turning radius in the transition between Moreland and DeKalb Avenues in the Inman Park neighborhood.

The alignment identified to connect DeKalb Avenue to Moreland Avenue for alternative alignments B3 and B4 utilizes the existing tight loop ramps. The two streets are grade separated due to the presence of the CSX rail line that parallels DeKalb Avenue. The ramps were built with very restrictive horizontal geometry. In order to make light rail work on the alignment, either new right-of-way would need to be purchased to allow the train to swing wider around the curve or a new flyover structure would need to be constructed. Taking right-of-way would require several residential takings and would be costly and pose adverse impacts to the neighborhood. Building a flyover structure would need to provide 23-feet of vertical clearance for the railroad before sloping down to meet the grade of Moreland Avenue. If the station location is to be maintained where it is shown on Moreland, it would need to be elevated. The very high cost from the structure and aerial station would make this alignment infeasible.

The constraint proves to be a fatal flaw that eliminates two alternatives (B3 *LRT* and B4 *LRT*) from further analysis. The remaining ten (10) Build Alternatives are carried forward into Detailed Screening.

Beltline Operations

Both BRT and rail (Streetcar and LRT) run times were estimated and determined to be very similar, given the assumption that the alignment and stations would be identical regardless of mode. Therefore, the travel time estimates and average speeds for each alternative alignment are assumed to be the same for BRT, Streetcar and LRT operations. Travel demand model runs were "mode generic". In other words, one model run was completed for each alternative alignment (B1 through B4), and used for all technologies under consideration.

For the on-street portions of the alignments, vehicles are assumed to have signal priority, but not full pre-emption, at all traffic signals. Weekday hours of service for the new line are assumed to be from 5:00 a.m. to 1:00 a.m.

Initial proposed service frequencies for the Beltline in all ten (10) Build Alternatives were 8 minutes in the peak, 10 minutes in the midday, 15 minutes in the evening, and 30 minutes in the early and late periods. Line load forecasts from the travel demand model indicated the need for adjustments to BRT peak frequency and Streetcar and LRT train consist assumptions. The results of this equilibration are detailed in the alternative descriptions that follow.

Feeder Bus Network

All of the Build Alternatives would be supplemented by modifications to the feeder bus system. Many of the proposed stations are located where major streets cross the line, and many of these streets have existing bus service that would make transfer connections with the new line. A few bus routes would need minor rerouting or extensions to connect with the new transit line.

A common element in all of the alternatives relates to connections with the BRT service proposed in the LPA for the I-20 East Corridor Study. The LPA did not include a station at the Glenwood-Memorial Connector. To allow transfers to the Beltline, a station must be added to the I-20 BRT facility at that location, with its capital costs attributable to the Beltline project.

Other feeder bus route modifications are proposed in areas where existing bus routes essentially duplicate segments of the Beltline. For example, Route #27 Monroe Drive is proposed to be modified to operate its current Sunday pattern from Arts Center to Lindbergh via Piedmont, Woodland Hills and LaVista on weekdays at 20-minute headways, rather than operating parallel to the new line

along Monroe Drive. This is the only proposed headway change for the feeder routes.

For the same reason, three routes serving the West End and Ashby MARTA stations are proposed to be eliminated. Previous analyses for the project showed major drops in ridership for these routes. The routes proposed to be eliminated are:

#52 Knight Park
#67 Westview
#68 Donnelly

Most feeder bus changes, such are those detailed above, would be consistent across all four alternatives. Additional changes specific to certain alternative alignments are highlighted in the descriptions that follow. Individual route statistics are presented in Appendix A, and Appendix B lists feeder bus connections for each alternative alignment.

3.2.1 Alternative B1

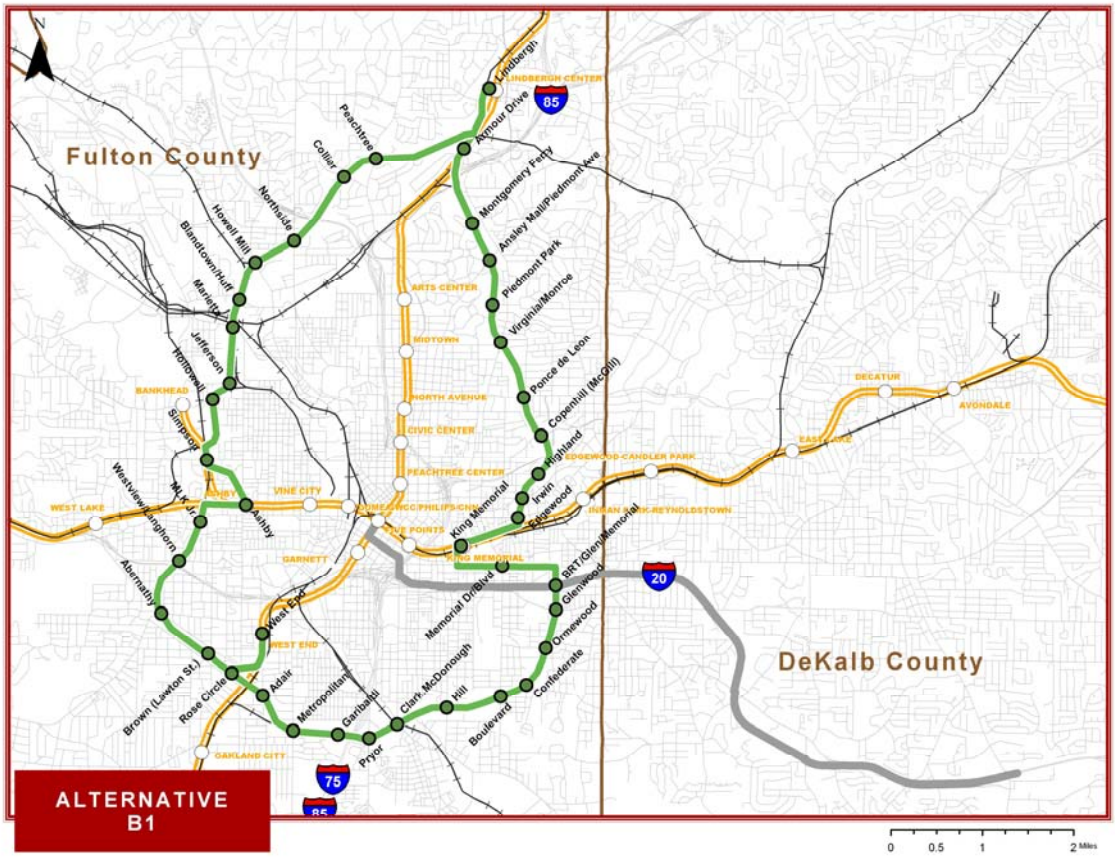
Alternative alignment B1 includes the full Beltline loop alignment as evaluated during the Transit Feasibility Study phase of the project, modified to use the King Memorial Station option described above around the Hulsey Intermodal Facility. The alternative is shown in Figure 3.2.

Alignment and Stations

The alignment would be 22.8 miles long, with 40 stations, for an average station spacing of slightly more than a half-mile. Connections with the MARTA heavy rail system would occur at the Lindbergh Center, King Memorial, West End and Ashby stations.

For the new alignment in the Hulsey Intermodal Facility area, stations are proposed at King Memorial and the intersection of Memorial and Boulevard. In addition, this alternative proposes the elimination of the Lucille and Tanyard Creek stations along the Beltline alignment that produced very low boardings during previous analyses due to the surrounding land uses and/or close proximity to another station.

Figure 3-2: Alternative B1



Operations

The end-to-end travel time for B1 would be approximately 69 minutes. As previously noted, initial proposed service frequencies assumed for network coding for BRT, Streetcar and LRT were 8 minutes in the peak and 10 minutes in the off-peak.

Estimates of peak hour, peak direction line loads were based on line load forecasts from the travel demand model. The projected maximum line load for B1 is 1,129 passengers in the peak hour, peak direction (between Lindbergh and Armour Drive).

For BRT, buses are assumed to have 60 seats per vehicle and a maximum load standard of 1.25. Thus, the maximum desired load is 75 passengers per bus trip. The B1 *BRT* Alternative requires 4-minute peak period frequencies to meet line

load projections at this load standard. At 4-minute frequencies, the B1 alignment would require 40 BRT buses in the peak periods. Midday service frequencies were not modified.

Streetcar seating and loading capacities are assumed to be similar to the Portland streetcar vehicle. Each vehicle was assumed to be 66 feet long with 29 seats and a maximum load standard of 3.0. Thus, the maximum desired load is 87 passengers per streetcar vehicle. Seating configuration assumptions could be modified to assume more seats, but a lower load standard.

The Portland streetcar vehicle is somewhat unique in that units can be coupled. Therefore, streetcar service was equilibrated assuming a mix of 1 and 2-car trains, while maintaining the coded 8-minute peak period service frequency.

With a projected peak hour, peak direction line load of 1,129 passenger trips per hour, the B1 *Streetcar* Alternative requires 13 streetcar vehicles per hour to remain below a 3.0 load factor. It requires the operation of 20 trains in the peak period to maintain 8-minute frequencies. It was assumed that 12 of these 20 trains would be 2-car trains to remain below a 3.0 load factor during a 2-hour peak period. With this mix of 1 and 2-car trains, the B1 alignment would require 32 streetcar vehicles in the peak periods. One-car trains were assumed to operate in the midday, evening and weekend periods.

LRT vehicles are assumed to have 68 seats per vehicle and a maximum load standard of 1.85, for a total capacity of approximately 126 passengers per vehicle. This vehicle seating capacity and load standard is consistent with current LRT planning work for the Charlotte Area Transit System (CATS).

The B1 *LRT* Alternative requires 9 LRT vehicles per hour to remain below a 1.85 load factor. It requires the operation of 20 trains in the peak period to maintain 8-minute frequencies. Thus, it was assumed that 3 of these 20 trains would be 2-car trains to remain below a 1.85 load factor during a 2-hour peak period. With this mix of 1 and 2-car trains, the B1 alignment would require 23 LRT vehicles in the peak periods. One-car trains were assumed to operate in the midday, evening and weekend periods.

Feeder Bus Network

Feeder bus modifications specific to this alternative would be the realignment of routes #34 Gresham and #107 Glenwood to serve the King Memorial Station, rather than Inman Park/Reynoldstown.

3.2.2 Alternative B2

Alternative alignment B2 is identical to B1, except that it follows the on-street alignment to the Arts Center Station described above, rather than completing the loop to the Lindbergh Center Station. The alternative is shown in Figure 3.3.

Alignment and Stations

The alignment would be 21.3 miles long, with 39 stations, for an average station spacing of slightly more than a half-mile. Connections with the MARTA heavy rail system would occur at the Lindbergh Center, King Memorial, West End, Ashby and Arts Center Stations.

Stations along the new alignment in the Hulsey Intermodal Facility area would be the same as in B1. This alternative also proposes the elimination of the Lucille station along the Beltline alignment.

For the new on-street alignment connecting to the Arts Center Station, stations are proposed along Howell Mill Road at two locations, 10th Street and 14th Street. Two stations would also serve the Atlantic Station development along 17th Street, one between the commercial area anchored by IKEA and the residential Commons area, and the other serving the core District area.

Operations

The end-to-end travel time for B2 would be nearly 74 minutes. As previously noted, initial proposed service frequencies assumed for network coding for BRT, Streetcar and LRT were 8 minutes in the peak and 10 minutes in the off-peak.

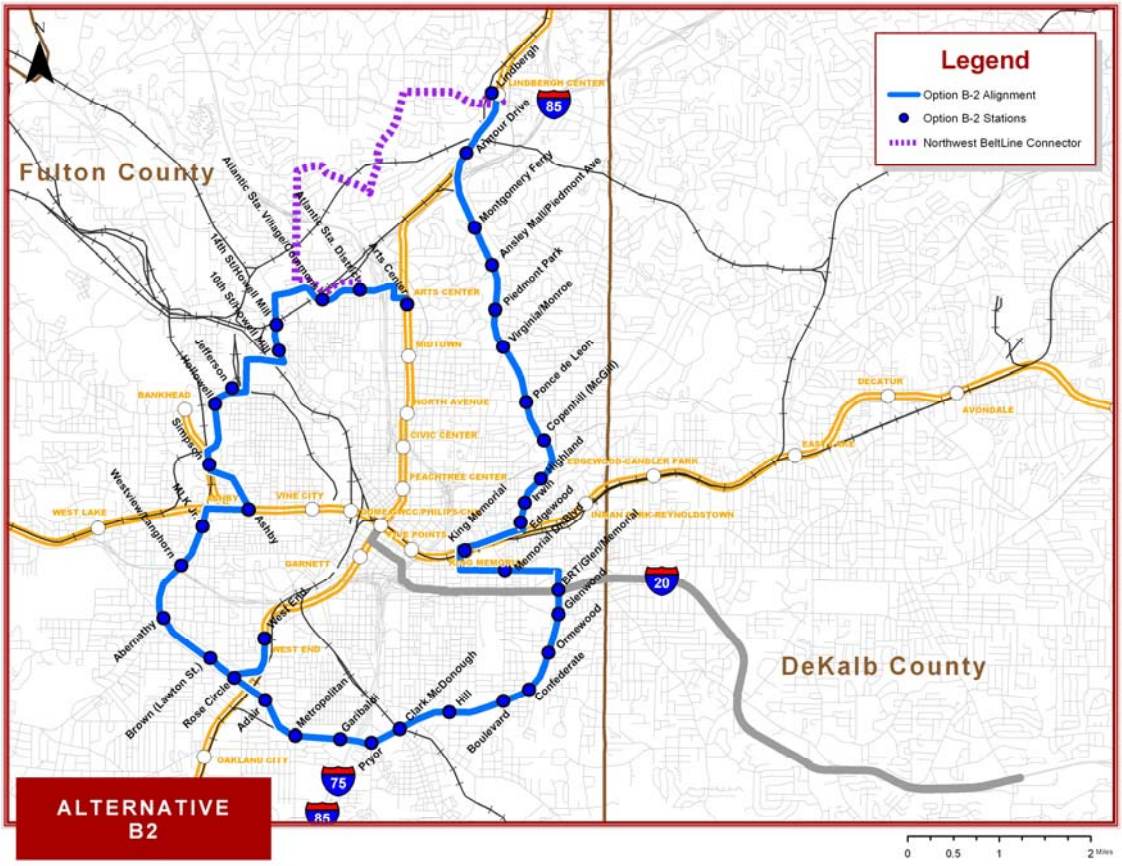
Estimates of peak hour, peak direction line loads were based on line load forecasts from the travel demand model. The projected maximum line load for B2 is 853 passengers in the peak hour, peak direction (between Lindbergh and Armour Drive).

The B2 *BRT* Alternative requires 5-minute peak period frequencies to meet line load projections at a load standard of 1.25. At 5-minute frequencies, the B2 alignment would require 34 BRT buses in the peak periods. Midday service frequencies were not modified.

For B2 *Streetcar*, with a projected peak hour, peak direction line load of 853 passenger trips per hour, the alternative requires 10 streetcar vehicles per hour to remain below a 3.0 load factor. It requires the operation of 21 streetcar trains in the peak period to maintain 8-minute frequencies. It was assumed that six of these 21 streetcar trains would be 2-car trains to remain below a 3.0 load factor

during a 2-hour peak period. With this mix of 1 and 2-car trains, the B2+Streetcar Alternative would require 27 streetcar vehicles in the peak periods. One-car trains were assumed to operate in the midday, evening, and weekend periods.

Figure 3-3: Alternative B2



For B2 *LRT*, one-car LRT trains are sufficient to meet the projected peak hour, peak direction line load of 853 passenger trips per hour, as it would result in a load factor of only 1.67. The B2 alignment would require 21 LRT vehicles in the peak periods, to maintain 8-minute frequencies.

Feeder Bus Network

Feeder bus modifications specific to this alternative would be the realignment of routes #34 Gresham and #107 Glenwood to serve the King Memorial Station,

rather than Inman Park/Reynoldstown. Additionally, the privately provided Atlantic Station shuttle would be modified to provide circulation only within the development. The shuttle's connecting service to the Arts Center Station would be eliminated and provided through transfers to the Beltline service.

A new route in the northwest quadrant of the study area would be added in the alternative, operating from the Atlantic Station District Beltline Station to the Lindbergh Center MARTA Station. The TSM Alternative includes a "TSM Westside" route that serves this segment with frequent service. The alignments in B2 and B4 do not serve this segment. Therefore, a TSM-type bus service improvement is needed in this segment to make B2 and B4 comparable to the TSM Alternative. The route, identified as the "Northwest Beltline Connector", would operate via 17th Street, Northside Drive, Collier Road, Peachtree Street, and Lindbergh Drive at proposed frequencies of 8 minutes in the peak and 12 minutes in the off-peak periods.

3.2.3 Alternative B3

Alternative B3 is identical to B1, except that it was modified to use the Inman Park/Reynoldstown Station option described above around the Hulsey Intermodal Facility. The alternative is shown in Figure 3.4.

Alignment and Stations

The alignment would be 23.8 miles long, with 41 stations, for an average station spacing of slightly more than a half-mile. Connections with the MARTA heavy rail system would occur at the Lindbergh Center, Inman Park/Reynoldstown, West End and Ashby Stations.

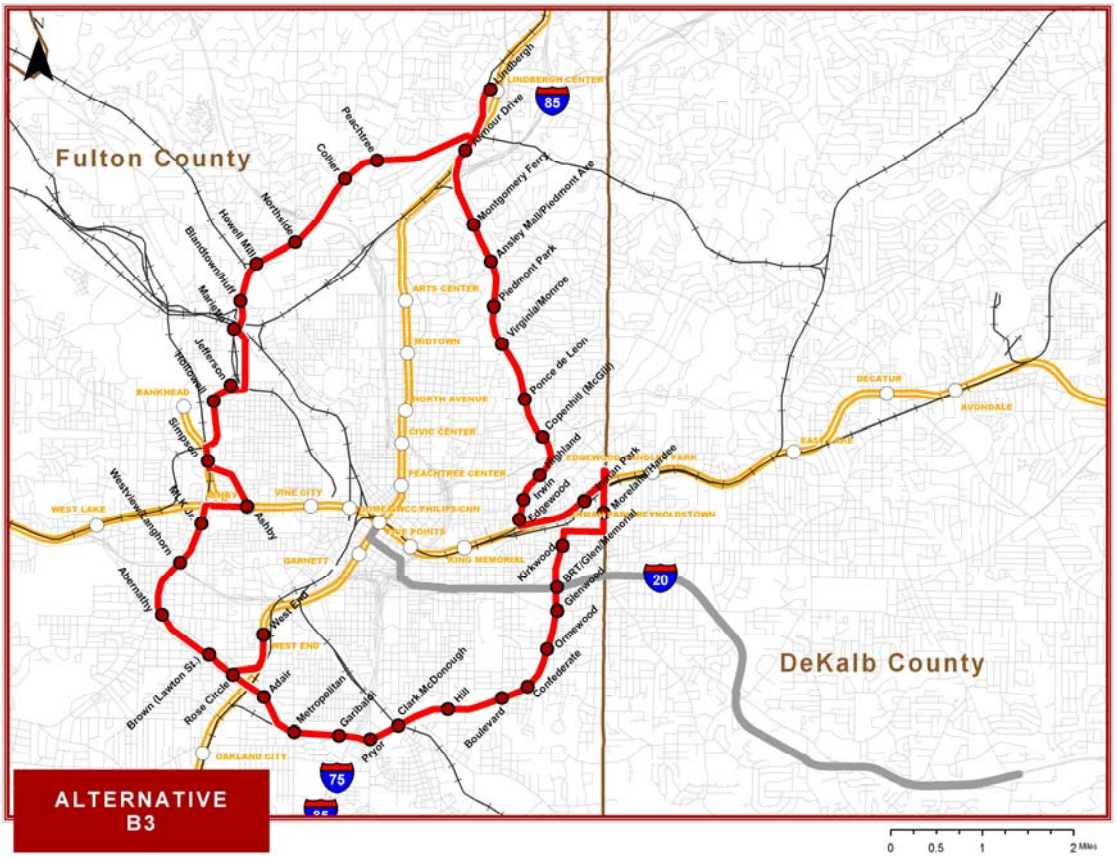
For the new alignment in the Hulsey Intermodal Facility area, stations are proposed at Inman Park/Reynoldstown, at the intersection of Moreland Avenue and Hardee Street, and at Kirkwood. In addition, this alternative proposes the elimination of the Lucille and Tanyard Creek Stations along the Beltline alignment that produced very low boardings during previous analyses due to the surrounding land uses and/or close proximity to another station.

Operations

The end-to-end travel time for B3 would be over 71 minutes. As previously noted, initial proposed service frequencies assumed for network coding for BRT and Streetcar were 8 minutes in the peak and 10 minutes in the off-peak.

Estimates of peak hour, peak direction line loads were based on line load forecasts from the travel demand model. This analysis assumes that line loads for B3 would be similar to B1, and would therefore be 1,129 passengers in the peak hour, peak direction (between Lindbergh and Armour Drive).

Figure 3-4: Alternative B3



The B3 *BRT* Alternative requires 4-minute peak period frequencies to meet line load projections at a load standard of 1.25. At 4-minute frequencies, the B3 alignment would require 41 BRT buses in the peak periods. Midday service frequencies were not modified.

For B3 *Streetcar*, with a projected peak hour, peak direction line load of 1,129 passenger trips per hour, the alternative requires 13 streetcar vehicles per hour to remain below a 3.0 load factor. It requires the operation of 21 streetcar trains in the peak period to maintain 8-minute frequencies. It was assumed that 12 of these 21 streetcar trains would be 2-car trains to remain below a 3.0 load factor during a 2-hour peak period. With this mix of 1 and 2-car trains, the B3 alignment would require 33 streetcar vehicles in the peak periods. One-car trains were assumed to operate in the midday, evening and weekend periods.

Feeder Bus Network

For this alternative, only those changes to the feeder bus routes that are consistent across all four alternatives would be required.

3.2.4 Alternative B4

Alternative B4 is identical to B3, except that it follows the on-street alignment to the Arts Center Station described above, rather than completing the loop to the Lindbergh Center Station. The alternative is shown in Figure 3.5.

Alignment and Stations

The alignment would be 22.3 miles long, with 40 stations, for an average station spacing of slightly more than a half-mile. Connections with the MARTA heavy rail system would occur at the Lindbergh Center, Inman Park/Reynoldstown, West End, Ashby and Arts Center Stations.

Stations along the new alignment in the Hulsey Intermodal Facility area would be the same as in B3. Similarly, stations along the on-street alignment connecting to the Arts Center Station would be the same as in B2. This alternative also proposes the elimination of the Lucille Station along the Beltline alignment.

Operations

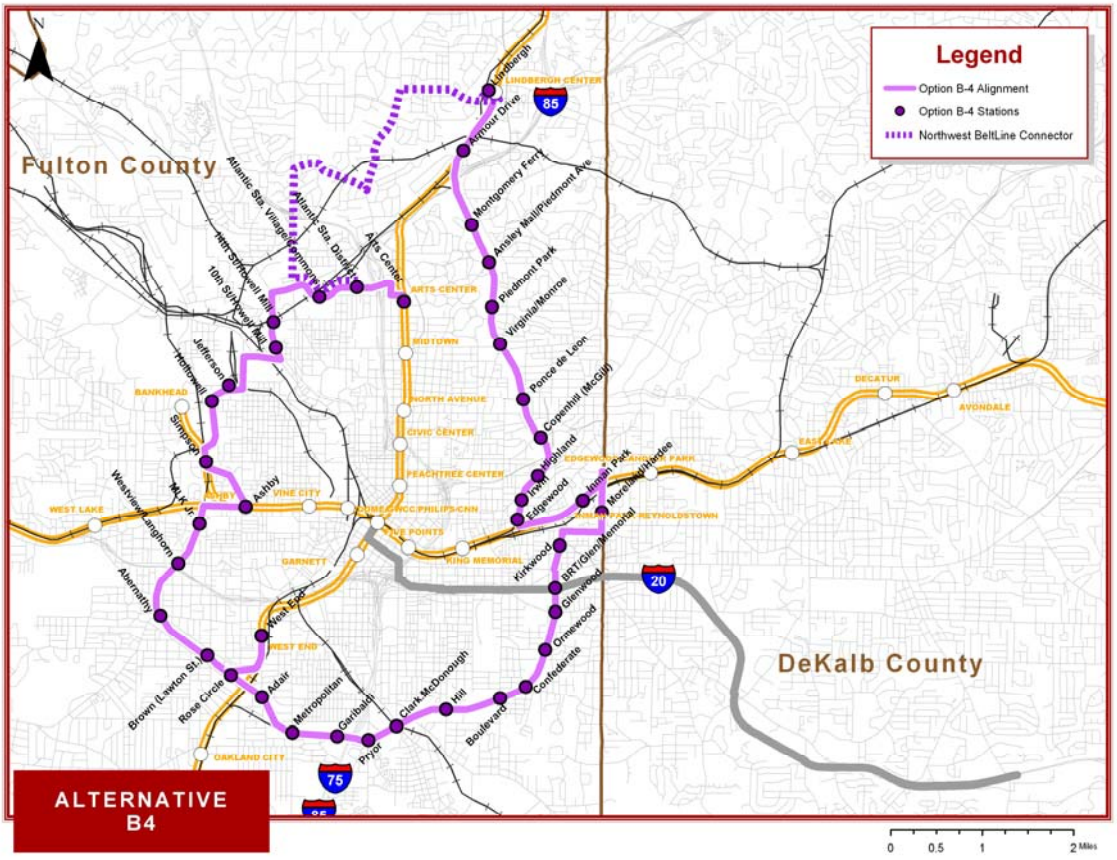
The end-to-end travel time for B4 would be nearly 76 minutes. As previously noted, initial proposed service frequencies assumed for network coding for BRT and Streetcar were 8 minutes in the peak and 10 minutes in the off-peak.

Estimates of peak hour, peak direction line loads were based on line load forecasts from the travel demand model. This analysis assumes that line loads for B4 would be similar to B2, and would therefore be 853 passengers in the peak hour, peak direction (between Lindbergh and Armour Drive).

The B4 *BRT* Alternative requires 5-minute peak period frequencies to meet line load projections at a load standard of 1.25. At 5-minute frequencies, the B4 alignment would require 35 BRT buses in the peak periods. Midday service frequencies were not modified.

For B4 *Streetcar*, with a projected peak hour, peak direction line load of 853 passenger trips per hour, the alternative requires 10 streetcar vehicles per hour to remain below a 3.0 load factor. It requires the operation of 22 streetcar trains in the peak period to maintain 8-minute frequencies. It was assumed that six of these 22 streetcar trains would be 2-car trains to remain below a 3.0 load

Figure 3-5: Alternative B4



factor during a 2-hour peak period. With this mix of 1 and 2-car trains, the B4 alignment would require 28 streetcar vehicles in the peak periods. One-car trains were assumed to operate in the midday, evening and weekend periods.

Feeder Bus Network

For this alternative, no changes to the existing alignment of feeder routes #34 Gresham and #107 Glenwood would be required. Feeder bus modifications specific to this alternative would be the modification of the Atlantic Station shuttle and the new route connecting Atlantic Station and Lindbergh Center Station described for Alternative B2.

3.2.5 Operations Plan Summaries

The tables that follow summarize the operating statistics for each BRT, Streetcar and LRT alternative. Table 3.1 presents estimates of operating statistics for impacted corridor bus routes, including the TSM East and TSM West routes. Tables 3.2 through 3.4 present proposed BRT, Streetcar and LRT operating plan characteristics (service frequencies by time period) and operating statistics.

Table 3-1: Bus Operating Statistics for Impacted Corridor Bus Routes

Operating Statistic	Existing	TSM Alt. Statistic	Change from Exist.	Alt. B1 Statistic	Change from Exist.	Alt. B2 Statistic	Change from Exist.	Alt. B3 Statistic	Change from Exist.	Alt. B4 Statistic	Change from Exist.
Peak Buses	50	95	45	46	-4	52	2	45	-5	51	1
Fleet Buses	60	114	54	55	-5	63	3	54	-6	61	1
Daily Veh. Rev.-Hrs.	736	1,273	536	671	-65	763	26	658	-78	749	13
Daily Veh. Rev.-Miles	7,681	13,900	6,218	7,131	-550	8,099	418	6,986	-696	7,954	273
Annual Veh. Rev.-Hrs.	239,300	413,700	174,400	218,200	-21,100	247,900	8,600	213,800	-25,500	243,500	4,200
Annual Veh. Rev.-Miles	2,496,900	4,518,100	2,021,200	2,318,000	-178,900	2,632,700	135,800	2,270,800	-226,100	2,585,500	88,600

Notes:

1. Operating statistics include Atlantic Station Shuttle.
2. TSM Statistics include equilibration of the proposed new TSM East and West bus roues.
3. Daily revenue-hours and revenue-miles annualized with a factor of: 325.05
   (Based on current operating statistics for analyzed routes.)

Table 3-2: BRT Operating Plan Statistics (Equilibrated)

BRT Alt.	Run Time (minutes)	Distance (miles)		Day	Headway Peak	Headway Base	Headway Eve.	Headway E/L	Vehicles Peak	Vehicles Total	Annual Bus-Miles	Annual Bus-Hrs	Buses Peak	Buses Base	Buses Eve.	Buses E/L	One-way daily bus trips Peak	One-way daily bus trips Base	One-way daily bus trips Eve.	One-way daily bus trips E/L	One-way daily bus trips Total
Alt. B1	68.90	22.80	9	M-F	4	10	15	30	40	48	1,639,500	95,900	40	16	11	5	150	84	32	16	282
				Sat	n/a	10	15	30			215,800	12,700	0	16	11	5	0	114	52	16	182
				Sun	n/a	15	30	30			145,500	8,500	0	11	5	5	0	76	10	24	110
ALT. B1 ESTIMATED ANNUAL TOTALS:											2,000,800	117,100									
Alt. B2	73.80	21.30	9	M-F	5	10	15	30	34	41	1,368,700	91,000	34	17	11	6	120	84	32	16	252
				Sat	n/a	10	15	30			201,600	13,400	0	17	11	6	0	114	52	16	182
				Sun	n/a	15	30	30			135,900	9,000	0	11	6	6	0	76	10	24	110
ALT. B2 ESTIMATED ANNUAL TOTALS:											1,706,200	113,400									
Alt. B3	71.10	23.80	9	M-F	4	10	15	30	41	49	1,711,500	98,200	41	16	11	6	150	84	32	16	282
				Sat	n/a	10	15	30			225,200	12,900	0	16	11	6	0	114	52	16	182
				Sun	n/a	15	30	30			151,800	9,000	0	11	6	6	0	76	10	24	110
ALT. B3 ESTIMATED ANNUAL TOTALS:											2,088,500	120,100									
Alt. B4	75.90	22.30	9	M-F	5	10	15	30	35	42	1,433,000	93,300	35	17	12	6	120	84	32	16	252
				Sat	n/a	10	15	30			211,000	13,700	0	17	12	6	0	114	52	16	182
				Sun	n/a	15	30	30			142,300	9,600	0	12	6	6	0	76	10	24	110
ALT. B4 ESTIMATED ANNUAL TOTALS:											1,786,300	116,600									

Table 3-3: Streetcar Operating Plan Statistics (Equilibrated)

Alternative	Run Time (minutes)	Distance (miles)		Day	Headway Peak	Headway Base	Headway Eve.	Headway E/L	Consist Peak	Consist Base	Consist Eve.	Consist E/L	Vehicles Peak	Vehicles Total	Annual Car-Miles	Annual Train-Mi's.	Annual Car-Hrs	Annual Train-Hrs	Trains Peak	Trains Base	Trains Eve.	Trains E/L
Alt. B1	68.90	22.80	9	M-F	8	10	15	30	1.6	1.0	1.0	1.0	32	39	1,465,100	1,203,500	85,700	70,400	20	16	11	5
				Sat	n/a	10	15	30	0.0	1.0	1.0	1.0			215,800	215,800	12,700	12,700	0	16	11	5
				Sun	n/a	15	30	30	0.0	1.0	1.0	1.0			145,500	145,500	8,500	8,500	0	11	5	5
ALT. B1 ESTIMATED ANNUAL TOTALS:													**32**	**39**	**1,826,400**	**1,564,800**	**106,900**	**91,600**	**20**	**16**	**11**	**5**
Alt. B2	73.80	21.30	9	M-F	8	10	15	30	1.3	1.0	1.0	1.0	27	33	1,240,700	1,124,300	82,100	74,500	21	17	11	6
				Sat	n/a	10	15	30	0.0	1.0	1.0	1.0			201,600	201,600	13,400	13,400	0	17	11	6
				Sun	n/a	15	30	30	0.0	1.0	1.0	1.0			135,900	135,900	9,000	9,000	0	11	6	6
ALT. B2 ESTIMATED ANNUAL TOTALS:													**27**	**33**	**1,578,200**	**1,461,800**	**104,500**	**96,900**	**21**	**17**	**11**	**6**
Alt. B3	71.10	23.80	9	M-F	8	10	15	30	1.6	1.0	1.0	1.0	33	40	1,516,400	1,256,300	88,000	72,700	21	16	11	6
				Sat	n/a	10	15	30	0.0	1.0	1.0	1.0			225,200	225,200	12,900	12,900	0	16	11	6
				Sun	n/a	15	30	30	0.0	1.0	1.0	1.0			151,800	151,800	9,000	9,000	0	11	6	6
ALT. B3 ESTIMATED ANNUAL TOTALS:													**33**	**40**	**1,893,400**	**1,633,300**	**109,900**	**94,600**	**21**	**16**	**11**	**6**
Alt. B4	75.90	22.30	9	M-F	8	10	15	30	1.3	1.0	1.0	1.0	28	34	1,293,400	1,177,100	84,400	76,800	22	17	12	6
				Sat	n/a	10	15	30	0.0	1.0	1.0	1.0			211,000	211,000	13,700	13,700	0	17	12	6
				Sun	n/a	15	30	30	0.0	1.0	1.0	1.0			142,300	142,300	9,600	9,600	0	12	6	6
ALT. B4 ESTIMATED ANNUAL TOTALS:													**28**	**34**	**1,646,700**	**1,530,400**	**107,700**	**100,100**	**22**	**17**	**12**	**6**

Table 3-4: LRT Operating Plan Statistics (Equilibrated)

Alternative	Run Time (minutes)	Distance (miles)		Day	Headway Peak	Headway Base	Headway Eve.	Headway E/L	Consist Peak	Consist Base	Consist Eve.	Consist E/L	Vehicles Peak	Vehicles Total	Annual Car-Miles	Annual Train-Mi's.	Annual Car-Hrs	Annual Train-Hrs	Trains Peak	Trains Base	Trains Eve.	Trains E/L
Alt. B1	68.90	22.80	9	M-F	8	10	15	30	1.2	1.0	1.0	1.0	23	28	1,268,900	1,203,500	74,200	70,400	20	16	11	5
				Sat	n/a	10	15	30	0.0	1.0	1.0	1.0			215,800	215,800	12,700	12,700	0	16	11	5
				Sun	n/a	15	30	30	0.0	1.0	1.0	1.0			145,500	145,500	8,500	8,500	0	11	5	5
ALT. B1 ESTIMATED ANNUAL TOTALS:													**23**	**28**	**1,630,200**	**1,564,800**	**95,400**	**91,600**	**20**	**16**	**11**	**5**
Alt. B2	73.80	21.30	9	M-F	8	10	15	30	1.0	1.0	1.0	1.0	21	25	1,124,300	1,124,300	74,500	74,500	21	17	11	6
				Sat	n/a	10	15	30	0.0	1.0	1.0	1.0			201,600	201,600	13,400	13,400	0	17	11	6
				Sun	n/a	15	30	30	0.0	1.0	1.0	1.0			135,900	135,900	9,000	9,000	0	11	6	6
ALT. B2 ESTIMATED ANNUAL TOTALS:													**21**	**25**	**1,461,800**	**1,461,800**	**96,900**	**96,900**	**21**	**17**	**11**	**6**

4.0 Evaluation of Corridor Mobility and Accessibility Measures

This chapter documents the evaluation of performance measures associated with the Corridor Mobility evaluation criterion, including a brief description of the travel demand forecasting methodology used in the detailed screen of the alternatives. Within this section, the actual data results from the travel demand model will be discussed. Each criterion will be evaluated, including a brief interpretation of what the results mean and how the alternatives were compared.

4.1 Travel Demand Forecast Methodology

The regional travel demand model was employed to determine the potential impact of proposed transportation improvements on travel demand, mobility and accessibility on the transportation system for the various alternatives in this study. A travel demand model consists of a set of computerized mathematical models that can simulate existing and forecast future travel patterns. The application of the travel demand model links land use, development and transportation infrastructure improvements with travel patterns and conditions. Models are developed based on collected data that reflects the unique traveling patterns and conditions of the particular urban area. The regional travel demand model developed by the Atlanta Regional Commission (ARC) was used as the base modeling structure for this effort. Minor revisions were made to some of the input data and procedure files to conduct this effort.

The ARC socio-economic data used in the *Mobility 2030 Regional Transportation Plan (RTP)* was used as the base data for this effort. The 2030 forecasts were originally prepared in 2003 and did not adequately reflect the current proposed development activities occurring in the study area. Since the preparation of the ARC 2030 forecasts, the City of Atlanta and Atlanta Development Authority (ADA) hired a private firm to estimate projected growth and development activities within the Beltline Tax Allocation District (TAD). The project team met with the City of Atlanta and the Atlanta Development Authority (ADA) staff and the private firms hired by ADA to discuss the current development activities within the study area and collect information to review and refine the ARC 2030 forecasts. The City of Atlanta staff also provided information on recent residential and commercial activities based on building permit data. Based on the information provided by the City of Atlanta staff and the ADA, estimates of addition growth and development in the study area were prepared. The methodology and assumptions used to prepare these estimates were coordinated with ARC staff.

The proposed population, household and employment development from the two data sources were added to the most currently available 2005 estimates and/or forecasts. The difference between these estimates and the 2030 forecasts were calculated. A comparison of this information with the future ARC socio-economic forecasts was performed. Areas where the existing 2030 forecasts are less than the summary of the proposed development and 2005 values were flagged for further review. The assumption is that current market forces and trends are encouraging more development and growth to occur in these areas than originally forecasted. It is assumed that areas where the existing 2030 forecasts are greater than the summary of the proposed development and 2005 values are reasonable and within the expected growth for the area.

Based on this comparison, there were several recommendations for refinements to the future 2030 ARC socio-economic forecasts. The project team met with ARC staff several times to discuss the proposed methodology and refinements. As a result, additional growth was added to the 2030 original forecasts in the study area. A detailed description of the modifications to the regional model set and socio-economic data is included in the *Patronage Forecasting Methodology Report*.

ARC's model is designed to represent the state of the practice and to meet the modeling requirements specified in related transportation and air quality federal and state regulations. The model set used as the base for the MARTA Inner Core Study analyses was the most current model set available which includes refinements made in 2004 and 2005. The model is also designed to support technical and policy decisions that are part of the multimodal planning and programming process. The model has undergone regular review by a panel of recognized experts and federal officials who have designated the model, state of the practice. The detailed regional travel demand model documentation is contained in *The Travel Forecasting Model Set for the Atlanta Region – 2002–2005 Documentation, 2005.*

The regional travel demand model set consists of an enhanced four-step process: trip generation, trip distribution, mode choice and network assignment. Trip generation determines the number of trips by purpose that are generated in the region. Trip distribution estimates the linkages between the trip ends, I.e., which trips are traveling to which locations. Mode choice determines the mode of the trip. The available modes range from automobile, high occupancy vehicle (HOV), local bus, express bus, rail and bus rapid transit (BRT). Traffic assignment estimates the potential route of either the highway or transit trip. This model process includes feedback from the assignments back to trip generation.

Although, different modes of travel (Bus Rapid Transit, Streetcar and Light Rail) were considered for each alternative, the model results are only presented for each alignment. The travel demand model does not specifically differentiate between these modes but, rather, lets the technology differences (acceleration, deceleration, top speeds, etc.) differentiate. Due to the number of stations, the station spacing does not permit the advantages one technology may have over another (i.e. top speed) to become evident. Station to station run times were estimated and compared for the different modes of transit, and this analysis showed that the station to station run times were not different enough to warrant making separate model runs for each mode. As a result, performance measures in this section are only provided for each alignment.

4.2 Assessment of Mobility and Accessibility Impacts

This section will present data results pertaining to mobility and accessibility evaluation criteria for the final set of alternatives.

4.2.1 Transit Ridership Impacts

An important measure in characterizing the efficiency and utility of a transit alternative is the transit ridership. A transit alternative that attracts more new riders will serve to help reduce highway and local street congestion, which will improve the mobility of both the new transit riders as well as the remaining highway trips.

Total New Facility Ridership – This measure represents the year 2030 annualized ridership for the new transit facility. This ridership includes all new trips boardings the facility as well as any boardings that shifted from another transit route.

New Riders – This measure represents the year 2030 annualized new riders on the regional transit system. The value is the incremental increase in new transit trips as compared to the TSM Alternative. New riders is expressed as “linked” trips, which means each new rider is counted only once regardless of how many transfers the rider may make.

Impact on Existing Transit Facilities – This is a qualitative measure to illustrate the diversion from or enhancement of the existing rail and bus routes as a result of the new facility. Some evaluation measures were created to provide this type of information. These measures included existing bus route boardings, change in rail to rail transfers at Five Points, and MARTA heavy rail plus Beltline boardings per service mile.

Travel Time Savings – This measure represents the annual regional transit travel time savings as a result of the project compared to the TSM Alternative. The larger the savings, the greater the benefit to the transportation system users.

Change in Transfers – This measure represents the number of boardings per linked trip. Having to transfer increases the total transit time; therefore, decreasing the number of transfers per trip should represent a benefit to transportation system users.

4.2.2 Total New Facility Ridership

The total number of transit boardings on the new facility is summarized for each alternative. This value is tabulated from the output of the transit assignment. It includes all boardings on the new facility. In the case of the TSM Alternative, new local service was added to resemble the Build alignments. The TSM tabulations are representative of this new service. The annualized factor used was 309.5. Total annual ridership for the TSM Alternative equaled 14.5 million.

All alternatives showed substantial increases in ridership as compared to the TSM ranging from 7 million to almost 12 million. The alignments B1 and B3, which make the full loop up to the Lindbergh MARTA station on the west side of the study area resulted in more ridership than the alignments to the Arts Center MARTA Station. Overall, alternative B3, which connects into the Inman Park MARTA Station, had the highest ridership with 26.4 million and thus was rated a 10. Alternative B1, which ties into the King Memorial MARTA Station, had the second highest ridership at 25.9 million and was given a rating of 8.

The Arts Center MARTA alignments showed similar results in that the alignment which connected to Inman Park (B4) had slightly higher ridership than the King Memorial connection (B2). As a result, alternative B4 was given a rating of 5 and B2 a rating of 3.

Table 4-1: Total Ridership

Performance Measure	Alternatives				
	TSM	B1	B2	B3	B4
Total Ridership (annualized in millions)	14.54	25.94	22.19	26.41	22.76
Rating:	**-**	**8**	**3**	**10**	**5**

4.2.3 New Riders

The number of new transit trips for the region is calculated using output from the mode choice model. This value represents new linked trips on the regional transit system due to the transit improvements made in the Build Alternatives.

This measure resulted in the same overall rankings as the total ridership measure. The alignments making the full loop to Lindbergh, B1 and B3 had more new riders than the alignments to Arts Center, B2 and B4. Of the two full loop alignments, the connection at Inman Park (B3) had slightly higher new riders with 6.4 million than the connection at King Memorial (B1) which had 6.2 million and was given the highest rating. The same trend was observed for the Arts Center alignments, with B4 having more new riders than B2.

Table 4-2: Total New Regional Riders

Performance Measure	Alternatives				
	TSM	B1	B2	B3	B4
New Riders (annualized in millions)	-	6.24	5.07	6.43	5.41
Rating:	**-**	**8**	**3**	**10**	**5**

4.2.4 Impact on Existing Transit Facilities

To determine the impact on the existing transit facilities, several performance measures were used. These included the change in boardings for the study area feeder buses, the change in rail-to-rail transfers at Five Points MARTA Station, and MARTA heavy rail plus Beltline boardings per service mile. Generally, the alignments to Lindbergh resulted in almost no change in the study area feeder buses as compared to the TSM. Alternative B1 had a slight reduction in boardings while B3 had a marginal increase. Alternatives B2 and B4 resulted in increases of 6,000 and 4,000 boardings, respectively. This is due to a route in both alternatives added to the northwest section linking the Atlantic Station area with the Lindbergh area which ensure consistency with the TSM Alternative.

All four alignments resulted in a decrease in the observed rail-to-rail transfers at the Five Points MARTA station indicating more direct paths between trip origins and destinations. The alignments to Lindbergh showed slightly higher decreases than the Arts Center alignments. Of the two Northwest-Lindbergh alignments, the connection to King Memorial resulted in the largest decrease. This was also true of the Northwest-Arts Center alignments with B2 resulting in less rail-to-rail transfers at Five Points than B4. In comparing the MARTA heavy rail plus the Beltline boardings per service mile between the alternatives, all of the build alignments resulted in higher numbers. More boardings per mile of operation is an indication that the transit system is operating more effectively. Of the four alignments, B1 and B3 resulted in the highest values at 9.6. The other two alignments had slightly lower values, 9.4 for B2 and 9.5 for B4.

By looking at the three measures in total, the alignments were ranked. Alternative B1 was given the highest rating followed by B3, then B2, and finally B4.

Table 4-3: Impact on Existing Transit Facilities

Performance Measure	Alternatives				
	TSM	B1	B2	B3	B4
Change in bus route boardings from TSM (study area feeder routes)	-	-300	6,000	400	4,000
Change in rail-to-rail transfers at Five Points MARTA Station	-	-6,634	-6,085	-6,376	-5,579
MARTA heavy rail plus Beltline boardings per service mile	7.5	9.6	9.4	9.6	9.5
Rating:	**-**	**10**	**5**	**7**	**2**

4.2.5 Travel Time Savings

The following procedures were used to quantify this performance measure. The total transit travel times from each origin zone to each destination zone were derived from transit travel skims based on the transit networks. The difference between the transit travel times between the alternative and the baseline condition was calculated for each origin-destination pair. Existing transit users and new transit users were determined by subtracting the alternative transit trip table from the baseline trip table. The travel time difference was multiplied by the existing transit users to determine the savings benefit for existing users of the transit system. The same procedure was also performed using the new transit users to determine their savings benefit. The results were then summed and annualized using a factor of 309.5 (average travel days per year).

The Northwest-Lindbergh alignments had the highest transit travel time savings when compared to the TSM. Of these two alignments, the connection to Inman Park (B3) resulted in the highest value and was given a rating of 10. Alternative B1 was given a rating of 8. Of the two Northwest-Arts Center alignments, the connection to Inman Park (B4) also had more savings than the King Memorial connection (B2) and was given a rating of 5. Alternative B2 was given the lowest rating with a 3.

Table 4-4: Travel Time Savings

Performance Measure	Alternatives				
	TSM	B1	B2	B3	B4
Annual Travel Time Savings (in millions)	-	1.44	0.98	1.65	1.10
Rating:	**-**	**8**	**3**	**10**	**5**

4.2.6 Change in Transfers

This measure is calculated by tabulating the total regional transit boardings (unlinked) and the regional number of transit riders (linked). The number of boardings per trip is calculated by dividing the total boardings by the total riders. A reduction in the number of boardings per trip is an indicator that the transit system is performing more efficiently at matching zone origins and destinations. As shown in the table below, the alternatives all resulted in a slight decrease in comparison to the TSM, 1.73 versus 1.75, and were all given a rating of 10.

Table 4-5: Change in Transfers

Performance Measure	Alternatives				
	TSM	B1	B2	B3	B4
Number of boardings per linked trip	1.75	1.73	1.73	1.73	1.73
Rating:	**-**	**10**	**10**	**10**	**10**

4.3 Assessment of Accessibility

The study goal for accessibility is not only to improve transit connectivity of neighborhoods in the study area to major destinations currently inaccessible by the existing rail system, but to improve access to transit for transit dependent persons living in the area that would be served by the new transit facilities. A significant portion of transit riders are those who cannot drive due the costs associated with owning a vehicle. Therefore, it is important to determine the number of low income households within a walking distance (half-mile) of a proposed station. The performance measures identified for this criterion include:

- *Year 2000 minority population within a half-mile of stations.*
- *Year 2000 low-income households within a half-mile of stations.*
- *Year 2000 households without access to automobiles within a half-mile of stations*
- *Year 2000 elderly populations (over 65 years of age) within a half-mile of stations*

4.3.1 Transit Dependent Service

Generally, people that are more inclined to use transit are those that do not own automobiles, those whose income levels put them below the poverty level and elderly people, over the age of 65. Using a half-mile buffer, the transit dependent population (minority, over 65, low income and households without vehicles) within each U.S. Census block group that intersects each alignment alternative and its stations was identified. Regional density (per acre) averages were established for persons age 65 and older; minority population; low-income households and households with no vehicle and the number of block groups that fell above the regional averages for each category were computed for each alignment. The population within each identified block group was then calculated for each category.

Table 4-6 below represents the transit dependent population in the block groups for each category within a half-mile buffer of all stations along each alignment. When compared to the regional density average for these populations, the Beltline study area has a higher percentage of transit dependent.

A larger transit dependent population number is considered desirable as it is essential that transit be accessible to those segments of the population that are most likely to use it. Alternative B1 has the highest population in three out of the four categories for transit dependent populations and thus was given the highest rating. The remaining alternatives showed slightly lower numbers in each of the categories except for B2 which shows the highest minority population.

Table 4-6: Transit Dependent Service

Performance Measure	Alternatives			
	B 1	B 2	B 3	B 4
Minority Populations	85,076	87,538	80,045	82,507
Rating:	7	10	2	4
Population Age 65+	11,989	11,469	11,891	11,371
Rating:	10	5	7	2
Low-Income Population	36,232	35,713	33,311	32,792
Rating:	10	7	4	2
Households without Access to Automobiles	16,455	16,210	15,103	14,858
Rating:	10	7	4	2

Source: U.S. Census 2000

4.4 Summary of Mobility & Accessibility Evaluation

This section compared the results of the performance measures to determine how well the alternatives fulfill the corridor mobility evaluation criteria. The performance measures were rated across all alternatives and benchmarked against the TSM Alternative. Each of the measures was given a weight and summed together to create the total category score. These scores indicate how the alternatives compared relative to one another using the mobility criteria. Based on the scoring, the alignments to Lindbergh proved to be the best performing in the mobility category with scores of 2.62 for B1 and 2.54 for B3. The Arts Center alignments resulted in the scores of 1.45 for B2 and 1.38 for B4. For both sets of alignments, the alternatives with connections at Inman Park versus King Memorial had higher mobility scores.

Table 4-7: Overall Rating of Mobility & Accessibility -- Performance Matrix

Evaluation Criteria	Weight	Alternatives									
		ALT B1 *BRT*	**ALT B1 *Streetcar***	**ALT B1 *LRT***	**ALT B2 *BRT***	**ALT B2 *Streetcar***	**ALT B2 *LRT***	**ALT B3 *BRT***	**ALT B3 *Streetcar***	**ALT B4 *BRT***	**ALT B4 *Streetcar***
Total Riders	0.05	0.40	0.40	0.40	0.15	0.15	0.15	0.50	0.50	0.25	0.25
New Riders	0.06	0.48	0.48	0.48	0.18	0.18	0.18	0.60	0.60	0.30	0.30
Impact on Existing Transit Facilities	0.04	0.40	0.40	0.40	0.20	0.20	0.20	0.28	0.28	0.08	0.08
Travel Time Savings	0.06	0.48	0.48	0.48	0.18	0.18	0.18	0.60	0.60	0.30	0.30
Change in Regional Transfers	0.03	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Transit Dependent Service	0.06	0.56	0.56	0.56	0.44	0.44	0.44	0.26	0.26	0.15	0.15
Mobility & Accessibility Rating:	--	**2.62**	**2.62**	**2.62**	**1.45**	**1.45**	**1.45**	**2.54**	**2.54**	**1.38**	**1.38**

5.0 Evaluation of Environmental, Economic Development and Land Use Measures

This chapter examines potential land use, redevelopment and environmental impacts to areas surrounding each of the four "build" alternatives being considered as part of the detailed screening. The performance measures analyzed in this section are based on qualitative and quantitative review of economic conditions, land use and zoning regulations, community and natural features, and estimates of future economic development potential. The specific areas of evaluation are described below.

Transit Supportive Land Use – This evaluation area examines 2030 population and employment within a half-mile of each alternative as well as the number and importance of major trip generators along the alternative, e.g. universities, stadiums and major attractions.

Development Incentives – This evaluation area assesses potential land development opportunities and the ability of an alternative to complement existing economic activity.

Noise and Air Quality - This section discusses the impacts alternatives may have on air quality status for the region and noise impacts to residences and businesses along the various alignments.

Community Impacts/Disruptions - This area examines the potential for physical disruptions and community impacts to neighborhoods, residences, businesses located along the alignments or near proposed stations.

Cultural and Natural Resources - This section discusses the cultural and natural resources such as parks, wetlands, historical sites and cemeteries, which are adjacent to the various alignments, with potential negative impacts.

Traffic Congestion Effects – This performance measure evaluates how effectively the alternatives help to reduce automobile travel and any negative impacts caused by the operation of a new facility on surface streets.

Where quantifiable data exists, specific performance measures have been calculated for each evaluation area. For example, existing data such as acres of vacant or developable land or transit dependent population groups were quantified using a Geographic Information Systems (GIS) analysis to calculate the amount of environmental and/or land use data falling within a half-mile buffer of each alignment alternative. However, in other cases such as the evaluated potential of alternatives to enhance the urban environment, qualitative assessments of performance measures that could not be quantified are included in the evaluation.

Similar to previous chapters, a numeric scoring system has been used in the evaluation process. For each performance measure, the alternatives have been given a score from 1 to 10, with 1 representing the lowest score and 10 representing the highest score. Each of the performance measures has also been assigned a weight, ranging from 0.03 to 0.06, with the sum of all weights equaling 1.00. The weights have been developed to reflect the goals of this study as well as input from the Technical Advisory Committee and other stakeholders and members of the public.

The numerical scoring system will multiply the criterion performance scores by the relative weights of each criterion and the resulting sum of all criteria will produce a composite score for each alternative. Since a criterion performance score of 10 represents the highest score for each criterion, the highest composite score will indicate the best alternative.

5.1 Transit Supportive Land Use

Potential population and employment with access to transit is an important measure for determining the efficiency of a transit alternative. Currently, population densities in the Beltline study area range from 0.00 to 23.84 persons per acre and employment densities range from 0.41 to 211.57 jobs per acre. With the projected growth in population and employment, densities are expected to increase significantly over the next 25 years and the mix of land uses will become increasingly transit supportive. In this section, performance measures intended to assess the variance in projected population and employment for traffic analysis zones (TAZs) within proximity of the alternatives and potential station sites is presented.

Both 2030 employment and population within a half-mile buffer of the alternatives have been computed. The analysis is based on the Atlanta Regional Commission's (ARC) 2030 socioeconomic forecast. However, as previously noted, the ARC allocation for the TAZs within the study area was refined based on an extensive corridor-level data collection program. The data collection program focused on capturing actual development and redevelopment activity in the study area.

5.1.1 Population

In addition to servicing employment, it is important that public transportation adequately serve overall population densities. According to the ARC's 2030 regional population forecasts by County/Superdistrict, the projected total population for the City of Atlanta in 2030 will be 584,587. Table 5-1 presents 2030 total population forecasts for each alignment.

Table 5-1: 2030 Total Population

Performance Measure	Alternatives			
	B1	B2	B3	B4
Year 2030 projected population within a half-mile of rail stations	**265,680**	264,068	264,398	259,786
Percent of total population	45%	45%	44%	44%
Rating:	**10**	**5**	**7**	**2**

Source: Atlanta Regional Commission (ARC)

A larger population number is considered desirable; as it is essential that transit is accessible to as many patrons as possible. Higher population also suggests a better potential for inducing transit supportive development. The B1 alternatives have the highest population figure projected and thus was given a rating of 10. With a slightly higher projected population, the B3 alternatives received a rating of 7. The B2 and B4 alternatives showed the lowest projected populations and received ratings of 5 and 2 respectively.

5.1.2 Employment

Using ARC's 2030 regional employment forecasts, the number of employees within a half-mile buffer was established for each alignment. According to the ARC's 2030 employment forecasts by County/Superdistrict, the projected total employment for the City of Atlanta in 2030 will be 546,918. Table 5-2 compares 2030 total employment forecasts for each alignment.

Table 5-2: 2030 Total Employment

Performance Measure	Alternatives			
	B1	B2	B3	B4
Year 2030 projected employment within ½ mile of rail stations	**312,688**	**386,739**	**279,611**	**353,662**
Percent of total employment	57%	70%	51%	64%
Rating:	**5**	**10**	**2**	**7**

Source: Atlanta Regional Commission (ARC)

A larger employment number is considered desirable, as it is essential that transit connect work destinations. Higher employment may also suggest a better

potential for inducing transit supportive development. With a projected employment of 386,739 the B2 alternative was given a rating of 10 as it serves the largest workforce. With the second largest workforce, the B4 alternatives received a rating of 7, while the B1 and B3 alternatives received ratings of 5 and 2 respectively.

5.1.3 Accessibility to Major Facilities: Cultural, Educational, etc.

Many of the Atlanta region's cultural attractions such as public parks, museums, historic sites and major universities are located within a half-mile of the four Beltline alternatives under evaluation. These facilities provide venues for events of regional and national significance, such as festivals for music, performing arts and fine arts. The transit alignments under evaluation will provide increased accessibility to a significant number of these cultural facilities as well as schools and governmental facilities located within the Beltline transit corridor. This performance measure provides qualitative evaluation of how well each alternative connects or links these points of interest within the study area.

Several points of interest were identified as being within a half-mile of an existing MARTA station. They include major institutions such as:

- Clark Atlanta University
- Spelman College
- Morehouse College
- Morehouse School of Medicine
- Morris Brown College
- Interdenominational Theological Center

Major parks and recreational facilities include:

- Atlanta Botanical Gardens
- Turner Field
- Piedmont Park
- Grant Park
- Centennial Olympic Park
- Atlanta Memorial Park
- Maddox Park
- Freedom Park
- Zoo Atlanta

Also within the corridor are some of the city's prominent historical and cultural destinations and landmarks, including Wren's Nest/Joel Chandler Harris Home, Hammonds House Galleries and Resource Center for African American Art, King

Plow Arts Center, and the Carter Presidential Library and Museum. None of the above cited locations are within convenient walking distances from MARTA heavy rail stations. MARTA buses provide access from the heavy rail stations, but the timeliness of transfers, headways, waiting times and operating hours can impact the decision for visitors to either take long walks or pursue non-transit modes to reach these facilities.

None of the proposed transit alternatives would provide access to all the attractions. The B1 and B3 alternatives would provide improved access to Atlanta Memorial Park, Freedom Park, Grant Park, Maddox Park, Piedmont Park, Morris Brown College, and Clark Atlanta University, and provide access to an additional 14 attractions including: Atlanta Botanical Gardens, Atlanta Waterworks, Carter Presidential Center, Cyclorama, Glenwood Park, Herndon Stadium, King Plow Arts Center, Martin Luther King, Jr. Center, Oakland Cemetery, Auburn Curb Market, Washington Park, West End Mall, Wren's Nest, and Zoo Atlanta.

The B2 and B4 alternatives would provide improved access to Freedom Park, Grant Park, Maddox Park, Piedmont Park, Morris Brown College, and Clark Atlanta University, and provide access to an additional 19 attractions including: Atlanta Botanical Garden, Atlanta Waterworks, Atlantic Station, Breman Jewish Heritage Museum, Carter Presidential Center, Center for Puppetry Arts, Cyclorama, Glenwood Park, Herndon Stadium, High Museum of Art, King Plow Arts Center, Martin Luther King, Jr. Center, Oakland Cemetery, Sweet Auburn Curb Market, Washington Park, West End Mall, Woodruff Arts Center, Wren's Nest, and Zoo Atlanta.

The B3 alternatives would provide improved access to Atlanta Memorial Park, Freedom Park, Grant Park, Maddox Park, Piedmont Park, Morris Brown College, and Clark Atlanta University, and provide access to an additional 11 attractions including: Atlanta Botanical Gardens, Atlanta Waterworks, Carter Presidential Center, Glenwood Park, Herndon Stadium, King Plow Arts Center, Martin Luther King, Jr. Center, Washington Park, West End Mall, Wren's Nest, and Zoo Atlanta.

The B4 alternatives would provide improved access to Freedom Park, Grant Park, Maddox Park, Piedmont Park, Morris Brown College, and Clark Atlanta University, and provide access to an additional 16 attractions including: Atlanta Botanical Garden, Atlanta Waterworks, Atlantic Station, Breman Jewish Heritage Museum, Carter Presidential Center, Center for Puppetry Arts, Glenwood Park, Herndon Stadium, High Museum of Art, King Plow Arts Center, Martin Luther King, Jr. Center, Washington Park, West End Mall, Woodruff Arts Center, Wren's Nest, and Zoo Atlanta.

Below is a comparison of the type and the number of cultural facilities within a half-mile of all stations for each alignment.

Table 5-3: Accessibility to Major Facilities

Performance Measure	Alternatives			
	B1	B2	B3	B4
Proximity of stations to parks, stadiums, universities, museums, etc.	19	23	16	20
Proximity of stations government facilities	18	18	16	16
Proximity of stations to schools	9	9	5	8
Total	**46**	**50**	**37**	**44**
Rating:	**7**	**10**	**2**	**4**

Through the improved mobility and connectivity provided by the Beltline corridor, more convenient and direct travel opportunities will be available to such facilities from origin points that include both local neighborhoods and MARTA heavy rail.

The B2 alternatives provide access to the largest number of major facilities and attractions and received a rating of 10. B1 and B4 alternatives provide access to a lower number of major facilities and received ratings of 7 and 4 respectively. The B3 alternatives, which provide access to the smallest number of major facilities of the four alternatives, received a rating of 2.

5.2 Development Incentives

The initial element of this evaluation area consists of an assessment of economic activity to include market conditions in the study area. This information is not intended for use in the comparative analysis across alternatives, but rather provides a general assessment of market trends that categorize and provide insight into future market sensitivity for transit improvements. The second element examines the extent of economic development incentives, vacant and underutilized land and transitional and developable land within proximity of alternatives. The assessment considers the amount of vacant parcels in proximity to alternatives and the extent to which economic and zoning incentives exist within the area of influence (a half-mile of rail or BRT stations) for each alternative. This information can be quantified and is used in the comparative analysis of the alternatives.

5.2.1 Economic Activity

Central Atlanta has experienced distinct and pronounced changes in its market role over the past three to four decades. A turning point occurred during the late-1990s as the City of Atlanta made major commitments to improve the downtown and midtown areas with investments in amenities, infrastructure and hospitality to accommodate the 1996 Centennial Olympic Games. A new awareness by investors and developers of the center city's potential has kindled renewed interest, resulting in a renaissance of central Atlanta.

While much of the residential growth continues to take place in suburban areas, there is a growing demand for in-town living, working and playing as evidenced by the explosive growth in housing construction in the City of Atlanta and the reversal in population decline as evidenced by the increase in population in the downtown parts of the City.

5.2.1.1 Existing Redevelopment

Lindbergh City Center

The Lindbergh City Center project, which is located to the north of the Beltline Tax Allocation District (TAD) boundaries, envisions approximately 4.8 million square feet of mixed-use development on 47 acres. The first phase of the project, completed in late 2003, consists of twin office towers built by Atlanta-based BellSouth totaling 980,000 square feet and also included the renovation and expansion of the MARTA rail station and corporate headquarters. The second phase, which is currently under construction, includes development of the project's Main Street, which features a mix of residential, retail and dining options. A third phase, expected to be complete in 2009, stresses mixed development including retail and will be located next to the main site adjoining the MARTA headquarters.

Atlantic Station

Atlantic Station, which is located in the Beltline study area, but is outside of the Beltline TAD boundary is a new urban renewal project on the northwestern edge of Midtown Atlanta on the former Brownfield site of the Atlantic Steel mill. The project, which has been in the planning stages since the 1990's includes the conversion of 138 acres of previously contaminated industrial uses to a city within a city of retail, residential, commercial and public space. The project, which is nearly complete, envisions a total of 6 million square feet of Class A office space, 5,000 residential units, 2 million square feet of retail and entertainment space, 1000 hotel rooms and 11 acres of public parklands. The

location of this live, shop and play development within the Beltline study area provides a significant demand for improved transit services.

City Hall East

The redevelopment of City Hall East is perhaps the highest profile development project in the area near Ponce de Leon Avenue and Freedom Parkway. The City of Atlanta has selected a team of developers that is pursuing large-scale, mixed-use development, including adaptive reuse of the existing City Hall East structure (primarily residential). In addition to City Hall East, the areas along Ponce De Leon Avenue near the Beltline represent numerous mixed-use redevelopment opportunities.

Glenwood Park

The Glenwood Park development project involved the conversion of a 28-acre former concrete recycling plant to a New Urbanist neighborhood approximately 2 miles from the center of downtown Atlanta. The development features a traditional mix of different housing types as well as retail stores, office space, civic buildings, people-friendly streets, parks, and recreational facilities.

5.2.1.2 Future Redevelopment Plans

The following economic development plans correlate directly to the Beltline project and provide descriptions of existing and future economic development projects around the Beltline study area.

The *New Century Economic Development Plan for the City of Atlanta,* adopted by the Atlanta City Council in December 2004, provides a comprehensive plan for focusing economic development in the City of Atlanta. The plan specifically addresses the need to develop the Beltline. The plan identifies the Beltline as a unique opportunity for redevelopment, green space, improved transit and livable communities. The plan calls for the establishment of a TAD within the Beltline that would generate a local funding source to finance improvements within the district. The plan also calls for improved transit facilities within the Beltline Corridor that would connect communities with the existing MARTA system and the many activity centers within the inner core. As population and employment increase in the study area and development occurs to accommodate these growth trends, the transportation infrastructure also needs to grow to support the growth in development.

The Beltline Tax Allocation District (TAD) Feasibility Study, prepared by EDAW for the City of Atlanta Beltline Steering Committee (March 2005) was performed to determine whether a tax allocation district was a feasible method of funding a

significant portion of the Beltline project. The study results showed that development associated with the Beltline TAD would generate significant economic benefits – in the form of job creation, new housing (including affordable housing), and new retail, office and light industrial space – to the City of Atlanta, Fulton County and Atlanta Board of Education. Specifically, over a 25-year timeframe, a Beltline TAD is projected to create 37,500 permanent jobs as well as 48,000 construction jobs; add 28,000 new residential units (including 5,600 affordable housing units); and add 9 million square feet of new retail, office and light industrial space. According to the Study, the new development was projected to add more than $20 billion to the tax bases of the City, County and School Board. Based on this assessment, the TAD was approved by the Atlanta City Council in December 2005.

The Beltline Redevelopment Plan (November 2005) identifies the existing opportunities and challenges to the City's Beltline project and makes recommendations for additional greenspace, trails, pedestrian and roadway improvements, transit integration, workforce housing and specifically identifies 12 centers of existing and potential development along the Beltline Corridor. According to the study, these centers are the critical anchor points of the Beltline that can stimulate economic activity and structure future growth. As a whole, the 12 principal Beltline activity centers and the many additional redevelopment areas constitute a total of approximately 2,500 acres of developable land, exclusive of the Beltline greenspace system. The redevelopment area could absorb 50,000 new housing units. With almost 5 million square feet of new retail, almost 7 million square feet of new office, and more than 1 million square feet of new light industrial, the future development profile of the Beltline is envisioned to be a balanced and sustainable environment that stresses quality of life. Figure 5-1 shows the location of redevelopment areas along the Beltline study area.

5.2.2 Potential Development Opportunities

This section examines the extent of potential development opportunity within proximity to the four Beltline Alternatives. The assessment considers the amount of land with development incentives near alignments and stations, amount of vacant parcels, underutilized parcels, and the amount of land zoned or used for transit supportive development within a half-mile of rail or BRT stations.

5.2.2.1 Economic Development Incentives

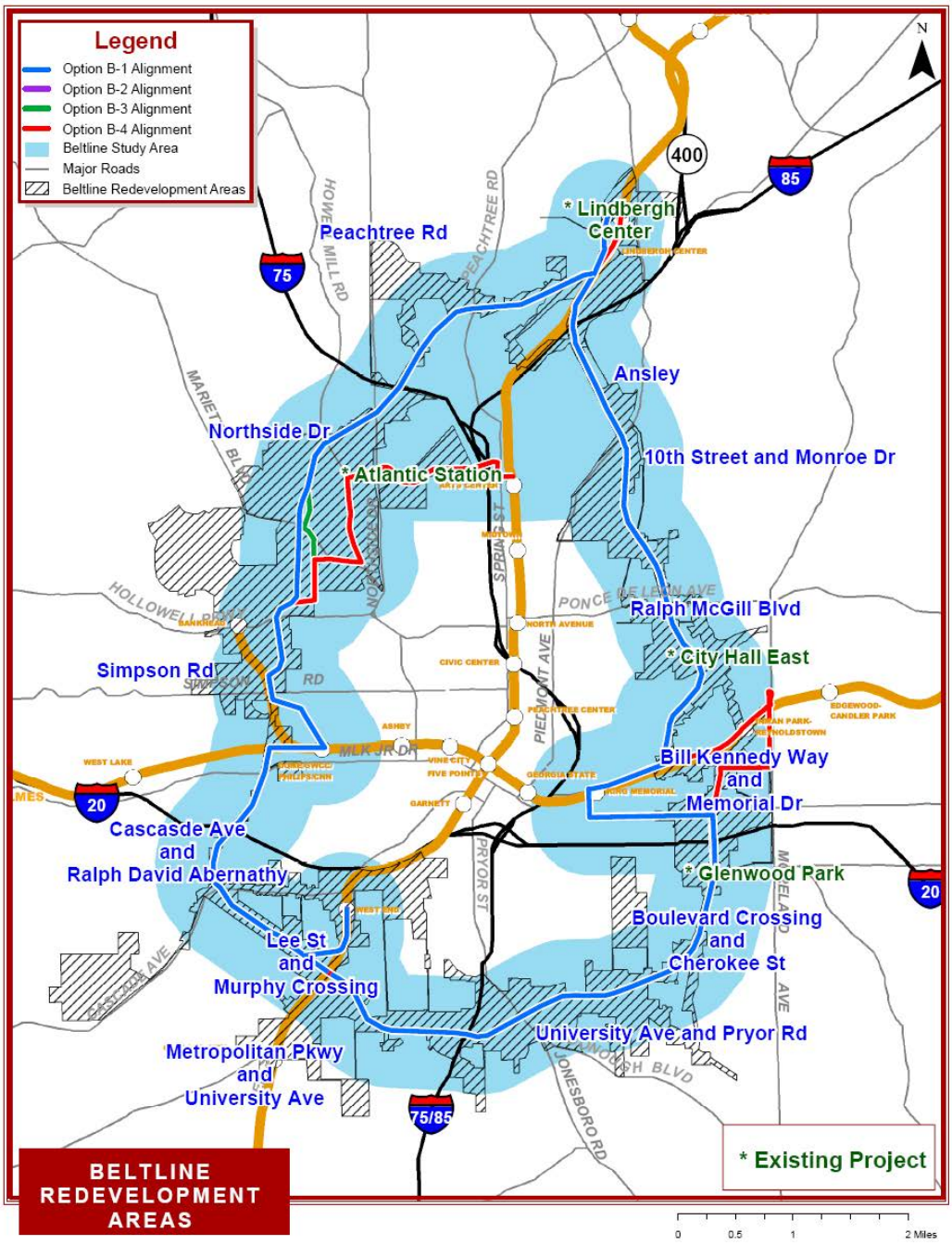
Economic and zoning development incentives give potential developers station/development opportunities within the corridor. Initiatives such as the establishment of Community Improvement Districts (CID), Plans derived from the Regional Livable Center Initiatives (LCI) program, and Tax Allocation Districts (TAD) are designed to guide appropriate development in designated areas.

The study area includes seven (7) LCIs (Midtown, City Center, West End, Upper Westside, Memorial Drive, Oakland City/Lakewood and Bankhead); three (3) TADs (West Side, Atlantic Station and Eastside) and two (2) CIDs (Midtown and Downtown Atlanta). This performance measure provides a quantitative evaluation of the performance of each alternative relative to the promotion of the community's redevelopment goals. Livable Center Initiatives (LCI), Tax Allocation Districts (TAD), and Community Improvement Districts (CID) were plotted and used to determine the name and number of acres with development incentives within a half-mile buffer of all stations for each alignment. The numbers of acres for each category were calculated, and then the boundaries were compared to determine any overlap. Any overlap was corrected to represent the total number of acres with development incentives for each alignment.

For this performance measure, the benefits or impacts of the transit technology were taken into consideration. A half-mile radius was assumed in the evaluation of all alignments, regardless of mode. Because of the assumptions of similar operating characteristics and equivalent station designs and amenities, BRT was expected to promote transit-supportive land development within an approximate fourth-of-a-mile walking distance of Beltline stations, at a level fully competitive with LRT and Modern Streetcar.

Beyond a fourth-of-a-mile radius station area, the capacity of the BRT mode to influence transit-supportive development is characteristically less substantial relative to the LRT and Modern Streetcar modes. The perception of permanence in the investment of rail and stations within a corridor translates to a conventionally higher investment in supportive development from the private sector, at distances up to a half-mile from walk-up transit stations.

Figure 5-1: Redevelopment Areas in Beltline Study Area



Accordingly, the scoring for the BRT alternatives is reduced within each alternative for this category. Table 5-4 compares the areas with economic and zoning development incentives for the alternatives under evaluation.

Table 5-4: Areas with Economic and Zoning Development Incentives

Performance Measure	Alternatives									
	ALT B1 *BRT*	**ALT B1 *Streetcar***	**ALT B1 *LRT***	**ALT B2 *BRT***	**ALT B2 *Streetcar***	**ALT B2 *LRT***	**ALT B3 *BRT***	**ALT B3 *Streetcar***	**ALT B4 *BRT***	**ALT B4 *Streetcar***
Acres of land with economic and zoning development incentives within ½ mile of rail stations	**3,742**	**3,742**	**3,742**	**4,521**	**4,521**	**4,521**	**3,301**	**3,301**	**4,087**	**4,087**
Total acres	12,006	12,006	12,006	11,634	11,634	11,634	11,979	11,979	11,616	11,616
Percent of total acreage	31%	31%	31%	39%	39%	39%	27%	27%	35%	35%
Rating:	**3**	**5**	**5**	**8**	**10**	**10**	**1**	**2**	**6**	**7**

A large number of acres with development incentives is considered desirable, as it indicates more attractive land available for potential development. The B2 rail alternatives showed the highest number of acres with economic and zoning development incentives and were given the highest rating.

5.2.2.2 Acres of Vacant /Underutilized Land

Several factors were examined in determining the number of acres of vacant and/or underutilized land within a half-mile buffer of all stations for each alignment. The ARC land use dataset (LandPro03) was the basis for determining the amount of vacant land in each alignments corridor. For this analysis, vacant land is defined as areas designated as undeveloped according to the LandPro03 data. Land that is underutilized is defined as a parcel where the value of improvements is less than 25 percent of the total assessed value. Areas that met these criteria were identified and plotted. Then, areas that fell within a half-mile buffer of all stations for each alignment for both categories were identified and acreage was computed. In comparing the alternatives, the larger the inventory of vacant parcels the better the rating.

For this performance measure, the benefits or impacts of the transit technology were again taken into consideration. As mentioned in the preceding section, beyond a fourth-of-a-mile radius station area, the capacity of the BRT mode to influence transit-supportive development is characteristically less substantial relative to the LRT and Modern Streetcar modes. The perception of permanence

in the investment of rail and stations within a corridor translates to a conventionally higher investment in supportive development from the private sector, at distances up to a half-mile from walk-up transit stations. Accordingly, the scoring for the BRT alternatives is reduced within each alternative for this category. Table 5-5 compares the areas with economic and zoning development incentives for the alternatives under evaluation.

Table 5-5: Acres of Vacant /Underutilized Land

Performance Measure	Alternatives									
	ALT B1 *BRT*	ALT B1 *Streetcar*	ALT B1 *LRT*	ALT B2 *BRT*	ALT B2 *Streetcar*	ALT B2 *LRT*	ALT B3 *BRT*	ALT B3 *Streetcar*	ALT B4 *BRT*	ALT B4 *Streetcar*
Acres of vacant parcels within a half-mile of rail stations	657	657	657	743	743	743	652	652	737	737
Acres of underutilized parcels within a half-mile of rail stations	3,041	3,041	3,041	2,901	2,901	2,901	3,116	3,116	2,997	2,997
Total	**3,698**	**3,698**	**3,698**	**3,644**	**3,644**	**3,644**	**3,768**	**3,768**	**3,734**	**3,734**
Rating:	**4**	**6**	**6**	**1**	**3**	**3**	**9**	**10**	**7**	**8**

The B3 *Streetcar* Alternative has the largest amount of underutilized land parcels near potential station sites, has incrementally more potential for station-area redevelopment, and is assumed to provide more economic development incentive than B3 *BRT*. This alternative therefore received the highest rating.

5.2.3 Potential Development Constraints and Opportunities

The Beltline Corridor faces a variety of physical challenges that could interrupt the desired physical continuity of this network. Three major constraints created by large active uses and physical barriers exist at Hulsey Yard in the southeast, Armour Yard in the northeast, and the Marietta Boulevard area in the northwest. Other challenges, including bridges, underpasses/ tunnels, at-grade crossings, grade change, narrow sections of right-of-way and active rail use scattered throughout the corridor.

Hulsey Yard

Hulsey Yard, owned by CSX, is an active intermodal facility that affects the Beltline transit and trail alignment at a critical seam between the northeast and southeast Neighborhood Planning Unit (NPU) clusters. Physical barriers include the CSX main line, the elevated east-west MARTA line and the intermodal facility. Currently, vehicular and pedestrian traffic must pass under the yard through the historic Krog Tunnel. In the short term, the trail could run under

Hulsey Yard along Krog Street and connect to an existing PATH bike route. The transit corridor could cross under the yard in a new tunnel west of Krog Street. Within the long-term, Hulsey Yard could redevelop as a mixed use site.

Armour Yard

The Beltline faces major alignment challenges in the northeast due to active railroads, grade constraints, and the I-85 interstate barrier. The Norfolk Southern railroad and the MARTA north-south line run parallel between the Lindbergh MARTA Station and Armour Yard. In addition, an active CSX east-west line, which could potentially be the alignment for the proposed C-Loop connecting Emory University to the Lindbergh area, intersects these lines at Armour Yard. In addition to constraints on the transit line and trail alignment, lack of road connectivity could also hinder potential development in the Armour Yard area. Specific constraints result from a complicated access-road at I-85 and Piedmont Avenue and a single two-lane access point to the Armour Circle-Ottley Drive area.

Marietta Boulevard

Perhaps the most critical gap along the Beltline results from the presence of active rail lines in the northwest. In this part of the corridor, active rail runs on most of the actual Beltline right-of-way. Safety requires a wide minimum right-of-way to separate the rail and the Beltline in these sections. In some areas the Beltline must defer in alignment to heavily active rail facilities such as CSX's high volume Howell Junction freight facility between Marietta Street and Huff Road.

Other Constraints

The right-of-way in the southeast is generally wide enough to pair transit and a parallel trail with the exception of the tunnel under the complex intersection of Hank Aaron and McDonough and bridges over I-75, Pryor Road, Hill Street, Confederate Avenue, Ormewood Avenue and I-20. Traffic also currently passes under the historic Krog Tunnel to continue past Hulsey Yard. Since the rail is active in the portion between Lee Street and Glenwood Avenue, the line is well-maintained and easy to navigate. The corridor, however, narrows between Glenwood Avenue and Memorial Drive. In this stretch the rail right-of-way dissolves, requiring the transit or trail to travel in the street along Bill Kennedy Way or on adjacent property. The Beltline right-of-way remains narrow through the Hulsey Yard area north to Highland Avenue. The northeast has underpasses and tunnels at Edgewood Avenue, Highland Avenue, Virginia, Park Avenue, Piedmont Road and Montgomery Ferry. The corridor crosses Ralph McGill, North Avenue and Ponce de Leon Avenue on bridges. As a result of disuse, the rail line is predominantly in a state of disrepair from Hulsey Yard to the Ansley

Golf Course. The tracks are discontinuous in sections, covered with kudzu growth, and some of the bridges noted require substantial rehabilitation.

In the northwest, the Beltline must share the corridor from the area just north of Armour Yard to the Atlanta Waterworks with active rail uses. This section also features underpasses at Peachtree Road, Collier Road, I-75, Howell Mill, Huff Road and Simpson Road; bridges exist at the intersection with Peachtree/Tanyard Creek and Northside Drive. In the southwest, the Beltline right-of-way is in various states of activity and decay. The portion south of Washington Park to Lee Street is abandoned, severely overgrown and prone to flooding due to its below grade elevation along most of the alignment. The Beltline from Lee Street to I-75/85 is an active rail line with relatively low freight volumes; alignment and accessibility challenges include narrow right-of-way dimensions particularly in the industrial/warehouse area between White and Donnelley Street and underpasses at Lucile Street, Ralph David Abernathy Boulevard and Lawton Street. The Beltline crosses over both Martin Luther King, Jr. Drive and Metropolitan Parkway on bridges.

5.2.4 Enhancement of Urban Environment

This performance measure qualitatively estimated the ability of the transit alternatives to provide the greatest enhancement to the existing urban environment. Transit projects, due to the possible upgrades to existing infrastructure and the need to add new streetscape elements and features, have the potential to improve the visual appearance and image of neighborhoods and districts.

Generally, significant visual and aesthetic resources within the study corridor include historic structures, parklands, and undeveloped open space/natural areas. In addition, sensitive visual areas or users affected by changes in the visual and aesthetic character of the study corridor were identified. The sensitive receptors of primary concern are residential areas adjacent to the proposed alignment and the users of the adjacent parks and other activity areas. As noted in the *Atlanta Beltline Redevelopment Plan*, the visual and aesthetic aspects of the corridor will be dramatically improved through environmental remediation, the connection of community greenspace through transit and trails, and the coordination of station-area design and development with neighborhood, greenspace and historic preservation plans.

With their location in Atlanta's central core, all four alignment alternatives under consideration would support redevelopment efforts, including development of former industrial corridors or revitalizing existing communities. Locating the transit facility in the Beltline corridor could transform the surrounding obsolescent industrial areas into new developments and neighborhoods. Additionally, the

congruency of this concept with the greenway corridor as conceptualized in the Trust for Public Land's *Greenspace Feasibility Study* could provide a linkage for all the open space trails and paths located around the core area.

For this performance measure, the benefits or impacts of the transit technology were again taken into consideration. Concerns regarding the visual impact of BRT operation in the context of the Beltline study area arose through comments from the public and key stakeholders in the public involvement process. Foremost among these concerns were the following:

- Concerns that the impact of BRT on redevelopment potential is limited, relative to LRT and Modern Streetcar, and may not assist the City of Atlanta in fully achieving the principle of strategic transit integration as expressed in the Redevelopment Plan (November 2005) prepared by the Atlanta Development Authority (ADA) for the Beltline TAD. As discussed in the assessment of land use and redevelopment, despite similarities in many operating assumptions and station amenities across technologies, such concerns specific to BRT may be valid beyond a short walking distance (¼-mile) from Beltline stops, restraining the potential for revitalization desired in some neighborhoods.

- Various concerns regarding the visual and aesthetic impacts of replacing the existing rail right-of-way with asphalt and/or concrete. One expressed concern is the rationale that the surface will be employed errantly or illicitly by motorists as an alternative to existing neighborhood streets, or legally by other public service vehicles, including emergency services and MARTA local bus routes. Another concern is the likelihood of expanded impervious surface area increasing runoff effects to greenspace and streams while worsening the "urban heat island" phenomena, as analyzed by National Aeronautics and Space Administration (NASA) scientists in Atlanta from 1996-1999. A third concern involves the potential replacement of existing railroad bridges to support the capacity requirements of BRT and its surface, and associated impacts to historic preservation and community identity. The rail alternatives do not pose the same impacts, in that existing bridges are already designed to accommodate rail loads and new bridges will be designed adjacent to existing bridges where a second track is needed.

Some citizens and stakeholders offered the perspective that the rail alternatives, in particular Modern Streetcar, have the potential to incorporate more natural features such as grass or stone ballast along the running way, reducing the need for impervious surface. Inclusion of such features can enhance the visual integration of transit along the Beltline with parks and trails, but the eventual project design must provide buffers and transitions sufficient to ensure safe multimodal operation. The historic streetcar line along St. Charles Avenue in New Orleans is one popular example of grass along the running way. A BRT project currently under construction in Eugene, Oregon will also include a grass strip between the curbed lanes. Analysis of the LPA in preliminary engineering

phases can help advance community interest in feasible surface types along the running way.

Relative to the issues expressed on BRT, few public concerns were raised on the visual presence of LRT and Streetcar and the prospects of an overhead catenary system. While this contrasts with the findings of a community engagement survey by the ADA (May 2006), where a large majority of residents indicated a preference for a transit service with a power source that is not visible, the same survey found a majority of respondents preferring "streetcar riding on rails" to "streetcar on rubber tires." The public feedback indicates that while rail is preferred by most of the public, care should be taken in design to minimize the potentially intrusive visual impacts of a catenary system. Although the lack of public feedback on this matter is due partially to community concerns with BRT, it may also be due in part to the historic orientation of some Beltline neighborhoods to streetcar and trackless trolley services which operated through the early 1960's in Atlanta. For many in these neighborhoods, restoring the presence of rail transit service could be more sensitive to the community context than providing BRT service.

Table 5-6 compares the qualitative effect of the alternatives on the enhancement of the urban environment.

Table 5-6: Enhancement of the Urban Environment

Performance Measure	Alternatives									
	ALT B1 *BRT*	ALT B1 *Streetcar*	ALT B1 *LRT*	ALT B2 *BRT*	ALT B2 *Streetcar*	ALT B2 *LRT*	ALT B3 *BRT*	ALT B3 *Streetcar*	ALT B4 *BRT*	ALT B4 *Streetcar*
Qualitative: **Potential of the transit system to enhance the visual quality of the urban environment**										
Rating:	**4**	**10**	**10**	**4**	**10**	**10**	**4**	**10**	**4**	**10**

Taken altogether, the Modern Streetcar and LRT Alternatives offer greater opportunities for context-sensitive design and fewer undesirable visual and aesthetic impacts along the right-of-way and at station areas. Accordingly, the scoring for the BRT Alternatives is reduced within each alternative for this category, and the LRT and Streetcar Alternatives receive the highest ratings.

5.3 Environmental Impacts

There are wide ranges of environmental effects that can occur when evaluating multiple alignments that weave throughout neighborhoods within the core of an

inner city environment. Environmental criteria evaluated impacts to the natural and built environments within the study area. Various Federal laws and Executive Orders, notably Section 4(f) of the Department of Transportation Act of 1966 are intended to preserve parks, wetlands, historic structures, archeological sites and other cultural resources. This section addresses the potential for the alternatives to provide an environmentally-friendly transit investment in the study area. Evaluation criteria include impacts to air quality, community structures and facilities, noise, natural resources, cultural and historic resources, and reduction of automobile travel.

5.3.1 Air Quality

As explained in section 4.0, the results from the travel demand model were created only at the alignment level. In this section, this will include the change in pollutant emissions and the savings in regional vehicle miles traveled.

Environmental Measures

It is known throughout the region that air quality is below Environmental Protection Agency (EPA) standards and will continue to be a serious problem. The Clean Air Act Amendments of 1990 require that each metropolitan area create regional long-range plans that include transportation investments, which reduce overall emissions.

Change in Pollutant Emissions – Nitrous Oxide (NOx) and Volatile Organic Compounds (VOC) are common emissions from petroleum-dependent vehicles and when combined in the presence of sunlight, produce ozone, a significant public health concern. Ozone is known to impact the health of individuals with respiratory disease and some allergies. A reduction in pollutant emissions results in a safer environment.

Savings in Regional Vehicle Miles Traveled (VMT) – This measure reflects the impact of transit improvements to highway system travel. It includes both auto and truck travel. As more people switch to transit, fewer vehicles are observed on the road system thus reducing the overall regional VMT.

Change in Pollutant Emissions

The procedures used to calculate these emissions are similar to the procedures used by the ARC for Air Quality Conformity Determination for the Regional Transportation Plan. The mobile emissions for the alternatives were calculated

using the travel demand model and are based on the congested speed and vehicle miles traveled from the time-of-day highway assignments. Emission data is now a standard item output from ARC's travel demand model.

The baseline alternative value for NOx emitted within the region is 63.5043 tons per day. The baseline alternative value for VOCs emitted within the region is 44.8181 tons per day. The annual emissions reduction in both NOx and VOCs for each alternative is shown in Table 5-7.

The alignments to Lindbergh resulted in the largest reduction in NOx as compared to the TSM. Of these two, B3 had a slighter higher reduction than B1. Of the two alignments to Arts Center, B4 had a higher NOx reduction than B2. The same trend was observed for the reduction in VOC with the Lindbergh alignments performing better than the Arts Center alignments. As a result of the two combined measures, the alternatives were ranked. Alternatives B3 and B1 would result in greater annual reductions in NOx and VOCs and received a rating of 10 and 8 respectively. Alternatives B4 and B2 resulted in lower amounts of NOx and VOCs annually and received lower ratings.

Table 5-7: Air Quality Impacts

Performance Measure	Alternatives				
	TSM	**B1**	**B2**	**B3**	**B4**
Annual reduction in regional NOx emissions from TSM (in tons)	-	-17.67	-15.41	-18.20	-15.78
Annual reduction in regional VOC emissions from TSM (in tons)	-	-19.96	-18.20	-20.55	-18.69
Rating:	**-**	**8**	**3**	**10**	**5**

5.3.2 Noise Impacts

Construction and operation of new transit facilities poses a potential noise problem to the residents and businesses near an alignment. Noise sensitive land uses are defined as single and multi-family residential, low-density commercial, institutional uses (such as schools, churches), parks and cemeteries.

The Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment, April 1995,* (FTA Guidance Manual) guidelines were followed to conduct the noise screening assessment discussed in this White Paper. The following sections describe noise and the effects of noise on surrounding land uses, as defined in the FTA guidance.

Noise Defined

Noise is defined as “unwanted sound”. Sounds are described as noise if they interfere with an activity or disturb the person hearing them. Sound is measured in a logarithmic unit called a decibel (dB). Since the human ear is more sensitive to middle and high-frequency sounds than it is to low frequency sounds, sound levels are weighted to reflect human perceptions more closely. These “A-weighted” sounds are measured using the decibel unit dBA.

Sound levels fluctuate with time depending on the sources of the sound audible at a specific location. In addition, the degree of annoyance associated with certain sounds can vary by time of day, depending on other ambient sounds affecting the listener and the activities of the listener. Because the time-varying fluctuations in sound levels at a fixed location can be quite complex, they typically are reported using statistical or mathematical descriptors that are a function of sound intensity and time. A commonly used descriptor of noise is the L_{eq}, which represents the equivalent of a steady, unvarying level over a defined period of time containing the same level of sound energy as the time varying noise environment. In areas where sleep activity takes place, the L_{dn} which measures an average "day-night" sound is the most commonly used measure. The L_{dn} is a 24-hour L_{eq} average calculated from hourly L_{eq} measurements, with a 10 dBA added to nighttime levels to account for heightened noise-sensitivity at night.

Transit Noise

Transit noise not only includes noise from moving vehicles, but also supporting services such as maintenance facilities as well. The perceptible transit noise generated from a fixed guideway transit system include: 1) transit vehicle operations, 2) a yard and shop location and 3) associated feeder bus at and around transit stations. Table 5-8 presents the most common sources of transit noise. The intensity of the noise event varies due to a number of factors. Examples include the distance of the receiver from the tracks or the station locations, presence of intervening terrain or buildings, and related parameters such as vehicle speed, vehicle length, vehicle equipment (i.e. air conditioning systems) and the type and condition of the running surfaces (i.e. rails and wheels). In addition, the guideway structure can also radiate noise as it vibrates in response to dynamic loading of the vehicle. Stationary vehicles generate noise as well. Auxiliary equipment, such as cooling fans, radiator fans, and air-conditioning pumps, often continue to run after vehicles have stopped. Because many of these conditions concerning receiver location and transit vehicle operation vary throughout the corridor, the noise impacts due to the proposed transit system can be expected to vary.

Noise Impact Criteria

FTA's noise impact criteria are based on comparing the existing noise levels to future project-related noise levels. The criteria are defined by two curves, which designate different levels of project noise which result in "no impact", "impact", and "severe impact" conditions. According to the FTA Guidance Manual, mitigation should be considered if the project falls within an "impact" range and should be implemented if the project would result in a severe impact. The basis of noise impact criteria is the percentage of people that would be highly annoyed by measured noise levels in their living environment. As a result, criteria reflect a range of annoyance associated with different human activities that occur in such areas as homes, businesses and parks.

Criteria are applied to three categories of land use with varying degrees of sensitivity to noise. Generally, in evaluating the potential for a noise impact from a proposed project, the L_{eq} is established for the peak traffic hour when noise levels are expected to be the highest. Where there is nighttime occupancy of noise sensitive buildings such as residences, hotels and hospitals, the "Day-Night" sound level (L_{dn}) is more appropriate for assessing noise impacts than the peak hour L_{eq}.

The noise criteria and descriptors used in impact analysis depend on whether the land use is designated within Category 1, 2 or 3. The following is a description of the categories of noise-sensitive land uses for which those noise criteria apply:

Category 1: This category includes buildings and parks where quiet is an essential element in their intended purpose. Land uses include open space set aside for serenity and quiet (i.e., wilderness areas) and areas for outdoor concert pavilions.

Category 2: This category includes residences and buildings where people normally sleep. Land uses include homes, hospitals, nursing homes and hotels where nighttime sensitivity to noise is assumed to be of utmost importance.

Category 3: This category includes institutional land uses with primary daytime and evening use. Land uses include schools, libraries, places of worship, museums, historically significant sites and active parks where it is important to avoid interference with such activities as speech, meditation and concentration on reading material. For Category 3 uses, however, the entire use may not be designated as a sensitive receptor; rather, only those areas typically used for quiet activities are designated as sensitive receptor areas. Buildings with interior spaces where quiet is important, such as medical offices and conference rooms, recording studios and concert halls are also included in this category.

The criteria do not apply to most commercial and industrial uses because these activities generally are compatible with higher noise levels. They do apply to business uses that depend on quiet as an important part of operations, such as sound and motion picture recording studios.

Table 5-8: Sources of Transit Noise

Transit Component	Source of Noise	Comments
Light Rail Vehicle in motion	Wheel rolling on rail	Increases with speed. Depends upon condition of wheels and rails. Can be controlled by regular system maintenance.
	Vehicle propulsion system	Increases somewhat while accelerating and at higher speeds. Can be controlled by vehicle procurement specification. Force ventilated system generally quieter than self-ventilated system when operating on embedded track.
	Auxiliary equipment for vehicle and ventilation	Usually not significant source of noise. Can be controlled by vehicle procurement specification.
	Wheel Squeal	Can occur on tight curves of less than 1000 feet radii. Can be controlled by wheel and rail treatments.
	Special track work	Impact noises are when wheels encounter discontinuity in tracks such as rail joints, turnouts or switches used at crossovers.
	Brakes	Occasional squeal when stopping.
	Horns and whistles	Used infrequently as warning device for pedestrians and at intersections.
	Bells	Used sometimes as warning device at grade crossings.
Rail Vehicle stopped	Auxiliary equipment for vehicle and ventilation	Dominant source for stationary vehicle. Controlled by vehicle procurement specification.
Traction power substation	Transformers	Usually not significant source of noise for LRT.

Source: Wilson, Ihrig & Associates, Inc. 1995.

Noise Screening Analysis

The Alternatives Analysis for the Beltline Corridor involves an evaluation of a number of transit technologies including LRT, BRT and Modern Streetcar. A noise screening procedure was conducted to identify potentially impacted noise

sensitive receptors within 200 feet from the centerline of the proposed transit alignment. Aerial photographs were used to identify residential land uses within the appropriate screening distances. Table 5-9 lists the number of residential land uses within the screening distances between each station location. Differences among alignments are italicized in the table. Where apartment buildings are included in the screening distances, no effort has been made to identify the number of housing units included in each apartment building. Table 5-10 identifies the total number of potentially affected residential land uses for each of the four alternatives.

The analysis revealed that the north south alternative between Jefferson Station and Peachtree Station (Alternatives B1 and B3) has 34 houses and 21 apartments in the screening distance compared with zero residential receptors along the Jefferson to Arts Center alternative (Alternatives B2 and B4). In addition the alternative using the MARTA King Memorial Station (Alternatives B1 and B2) has nine houses and one apartment building within the screening distance, compared to the alternatives that use the Inman Park/Reynoldstown MARTA Station (Alternatives B3 and B4) with 96 houses within the screening distance.

Table 5-9: Noise Sensitive Receptors between Stations

Station 1	Station 2	# Houses	# Apartments
Lindbergh Center	Armour Drive	-	4
Armour Drive	Montgomery Ferry	29	-
Montgomery Ferry	Ansley Mall / Piedmont Ave.	1	-
Ansley Mall / Piedmont Ave.	Piedmont Park	-	-
Piedmont Park	Virginia / Monroe	14	-
Virginia / Monroe	Ponce de Leon	12	3
Ponce de Leon	Copenhill (McGill)	-	-
Copenhill (McGill)	Highland	-	-
Highland	Irwin	-	-
Irwin	Edgewood	-	-
ALTERNATIVES 1 and 2:			
Edgewood	***King Memorial***	-	1
King Memorial	***BRT / Glen / Memorial***	9	-
ALTERNATIVES 3 and 4:			
Edgewood	***Wylie / Pearl***	-	-
Wylie / Pearl	***Inman Park-Reynoldstown***	4	-
Inman Park-Reynoldstown	***Kirkwood***	92	-
Kirkwood	***BRT / Glen / Memorial***	-	-
BRT / Glen / Memorial	Glenwood	-	-
Glenwood	Ormewood	5	-
Ormewood	Confederate	4	5
Confederate	Boulevard	1	-
Boulevard	Hill	-	-
Hill	Clark. McDonough	2	-
Clark. McDonough	Garibaldi	-	-
Garibaldi	Metropolitan	10	-
Metropolitan	Adair	-	2
Adair	Rose Circle	21	-
Rose Circle	Brown (Lawton St.)	-	-
Brown (Lawton St.)	Abernathy	-	14
Abernathy	Lucile	16	-
Westview / Langhorn	MLK Jr.	33	-
MLK Jr.	Ashby	57	-
Ashby	Simpson	96	3
Simpson	Hollowell	-	8
Hollowell	Jefferson	-	-
ALTERNATIVES 1 and 2:			
Jefferson	***Marietta***	***-***	***-***
Marietta	***Bland town / Huff***	***-***	***-***
Blandtown / Huff	***Howell Mill***	***-***	***-***
Howell Mill	***Northside***	***4***	***-***
Northside	***Tanyard Creek***	***20***	***3***
Collier	***Peachtree***	***4***	***-***
Peachtree	***Armour Drive***	***1***	***7***
ALTERNATIVES 3 and 4:			
Jefferson	***Arts Center***	***-***	***-***
(Note: Differences among Alternative Alignments in ***italics)***			

Table 5-10: Noise Sensitive Receptors by Alternative

Performance Measure	Alternatives			
	B1	B2	B3	B4
Number of Houses Impacted	353	321	445	411
Number of Apartments	50	29	60	39
Total	**403**	**350**	**505**	**450**
Rating:	**7**	**10**	**2**	**4**

The B2 alternatives have the least noise impact to the surrounding community and receive the highest rating. The B1, B3 and B4 alternatives had more significant noise impacts and received lower ratings.

5.3.3 Vibration Screening Analysis

The noise analysis also investigated the vibration sensitive receptors within a 50-foot potential impact screening area. Potential vibration impacts are unlikely to impacts areas along the existing railroad right-of-way. Nevertheless, nine apartment buildings were identified within 50 feet of the proposed alignment between Brown Station (Lawton St.) and Abernathy Station. Where the alignment runs on the roadway, between MLK Jr. Station and Simpson Station, there are 92 houses within the 50-foot screening distance. All four alternatives have 92 houses and nine apartment buildings within the vibration screening distances.

5.3.4 Community Impacts and Disruptions

Throughout the study, special attention was directed towards assessing project benefits and impacts on neighborhoods, residences, and businesses located along the alignments. Recommendations will focus on avoiding disruptions to neighborhoods and will include design elements to protect existing neighborhoods. The following quantitative measure was used to evaluate potential impacts to the communities.

- *Estimated community impacts/disruptions for all categories: residential, business, community facilities, churches*

The Beltline study is unlike other studies performed in the Atlanta region. The right-of-way for the initial Beltline concept was used for freight rail for many years. Due to the nature of the study area, these measures will not use simple counts of facilities within a specified distance from the new alignments. There are many established houses, businesses and community facilities in close

proximity to the Beltline. The analysis determined the number of structures that would be negatively impacted within a half-mile buffer of each alignment alternative. This includes single family and multi-family buildings as well as commercial properties that would be impacted by access points to the new facility, and the structures that would be taken where an alternative follows an alignment.

Table 5-11: Community Impacts/Disruptions

Performance Measure	Alternatives			
	B1	B2	B3	B4
Residential	21	0	21	0
Non Residential	12	1	12	1
Total	**33**	**1**	**33**	**1**
Rating:	**8**	**10**	**8**	**10**

The B2 and B4 alternatives do not require any property displacements or acquisitions and received the highest ratings. The B1 and B3 alternatives have more significant impacts to residences and businesses in the study area and received a lower rating.

5.3.5 Natural Resources

The number of environmentally sensitive areas (parks, wetlands, historic sites and cemeteries) with potential negative impacts is the measure used to evaluate the project alternatives. An environmental screening was undertaken for each of the four MARTA Beltline alignment alternatives (B1 through B4). In each instance, a 200 feet wide corridor centering on the existing/proposed rail alignment was reviewed for known environmental resources/issues of concern that could be readily identified through a screening-level investigation. The objective of the screening was to identify those resources/issues of concern that could either pose a serious impediment to the construction and/or operation of the Beltline or for which some need for the mitigation of impacts could reasonably be predicted.

Due to the linear nature of the project, impacts to wetlands cannot be wholly avoided. Design consideration can minimize impacts and through the Federal permitting process, mitigation can be determined and implemented to assure the project provides a net benefit to water resources. Table 5-12 shows the acres of wetlands identified within the project's area of potential effect.

Table 5-12: Potential Impact to Wetlands

Performance Measure	Alternatives			
	B1	B2	B3	B4
Acres of Wetlands	4.2	7.2	4.2	7.2

The B1 and B3 alternatives had the least potential for impacts to wetlands, while the B2 and B4 Alternatives had more potentially significant impacts.

5.3.6 Social Resources

The data used for identifying religious properties and cemeteries within the Beltline corridor alternatives was collected from various sources and validated in some instances with USGS topographic maps and aerial photographs. The primary source of information concerning religious properties and cemeteries came from the land use database provided by the Atlanta Regional Commission (ARC). The Fulton County GIS Department also provided applicable data. Additionally, information from the identified archaeological sites database maintained by University of Georgia in Athens was utilized in order to identify family cemeteries that were not accounted for in the other databases.

Religious properties, cemeteries, public parks and recreation areas are considered part of the social environment and need to be identified within the impact region of a proposed undertaking under direct or indirect jurisdiction of an agency of the Federal Government. The consideration of these type resources is recorded in the environmental document prepared for compliance with the National Environmental Policy Act (NEPA). The protection of cemeteries, burial sites, human remains and burial objects is also required by Georgia Code Section 36-72-4 through 16 and Section 4(f) of the Department of Transportation Act of 1966. Figures 5-2 and 5-3 show the location of religious properties and cemeteries, respectively, in the Beltline study area.

Figure 5-2: Religious Properties Location Map

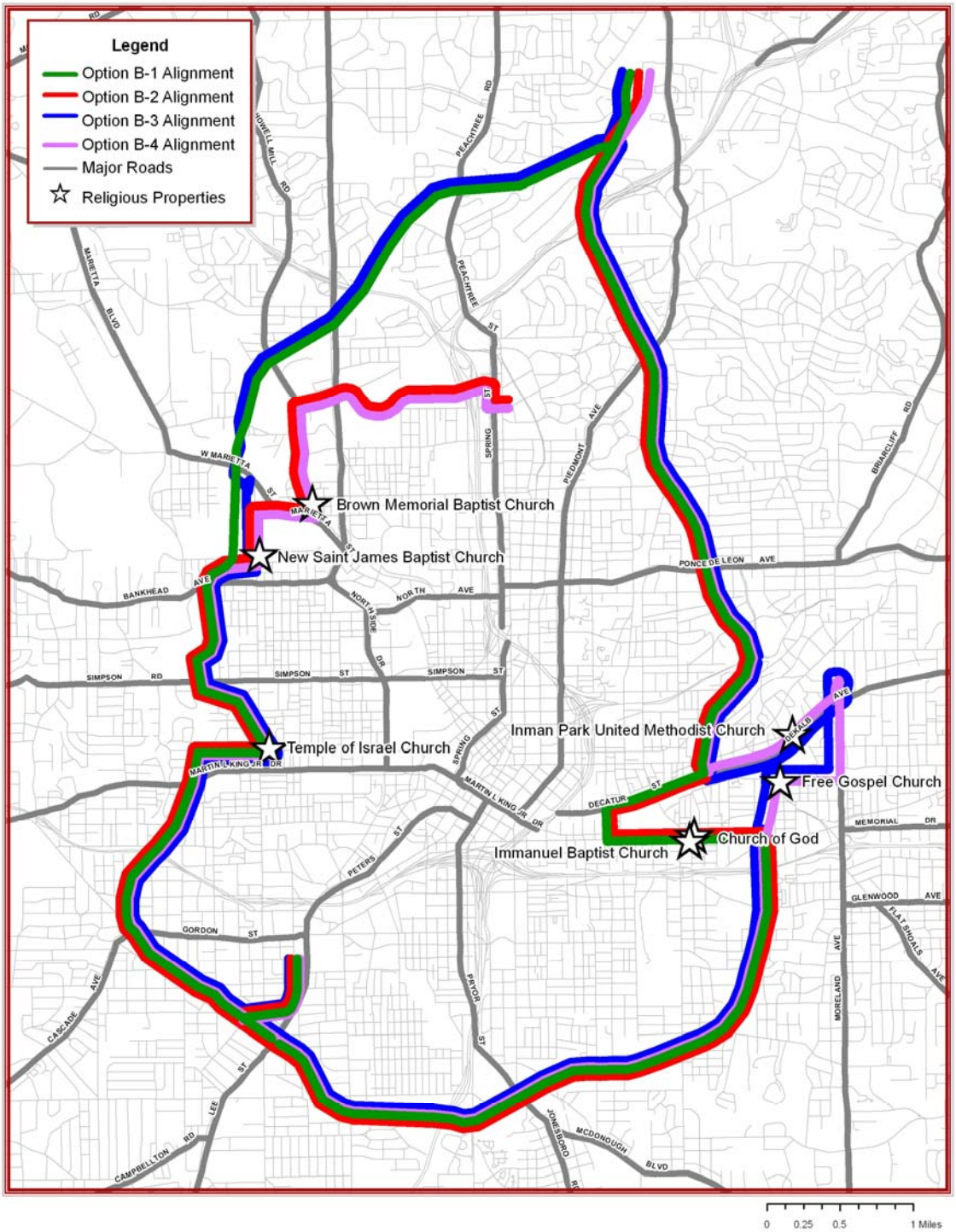
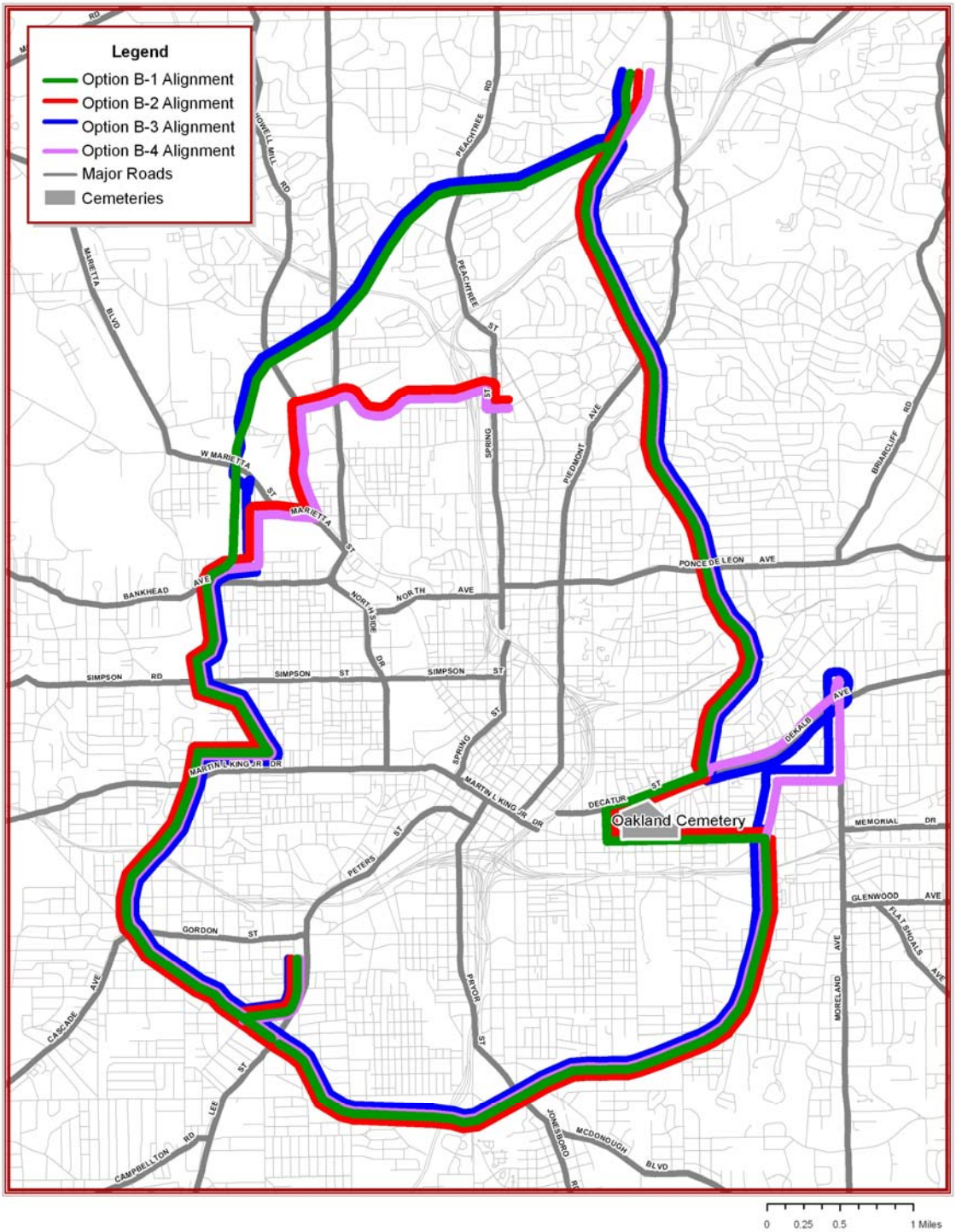


Figure 5-3: Cemeteries Location Map



Alternative B-1

In Alternative B-1, three churches and one cemetery were identified within the corridor study area. The greatest concentration of these type properties is located at the southeastern area of the alignment between Ponce de Leon Avenue and Lee Street.

Alternative B-2

In Alternative B-2, five churches and one cemetery were identified. The greatest concentration of these religious properties is located south of where Ponce de Leon Avenue intersects with the alignment and south of where Martin Luther King, Jr. Drive intersects with the alignment.

Alternative B-3

In Alternative B-3, four churches and no cemeteries were identified. As was mentioned in the description of Alternative B-1, the heaviest concentration of these type properties is located south of Ponce de Leon Avenue where it intersects with the proposed alignment and east of Lee Street where it intersects with the proposed alignment.

Alternative B-4

In Alternative B-4, five churches and no cemeteries were identified. The greatest concentration of these type properties, like the other preceding alignments, is located in the southeastern area of the alignment.

Table 5-13: Potential Impact to Religious Properties and Cemeteries

Performance Measure	Alternatives			
	B1	B2	B3	B4
Religious Properties and Cemeteries	4	6	4	5

The B1 and B3 alternatives have the lowest potential impacts to religious properties and cemeteries, while the B2 and B4 alternatives have more potential impacts to religious properties and cemeteries.

5.3.7 Public Parks and Recreation Areas

The data used for identifying public parks and recreation areas within the Beltline Corridor Alternatives originated from the land use database provided by the Atlanta Regional Commission, the shapefiles received from the Fulton County GIS Department and DeKalb County, and the National Park Service website, http://data2.itc.nps.gov/parksearch/state.cfm?st=ga. Figure 5-4 shows the location of public parks and recreational facilities in the Beltline study area.

There are no state, county, or national parks or recreation areas located within the ½ mile buffer of any of the alternatives under evaluation. Most of the parks are concentrated along the southeast section of the alignment and are under the jurisdiction of the City of Atlanta

Alternative B1

There are six city parks within the ½ mile buffer. They include: Piedmont Park, Stanton Park, Adair Park #1, Donnelley Park, Washington Park and Maddox Park.

Alternative B2

There are eight city parks, which include all the same parks listed for the Beltline Alternative B-1 with addition of Adair Park #2 and Rose Circle Park.

Alternative B3 and B4

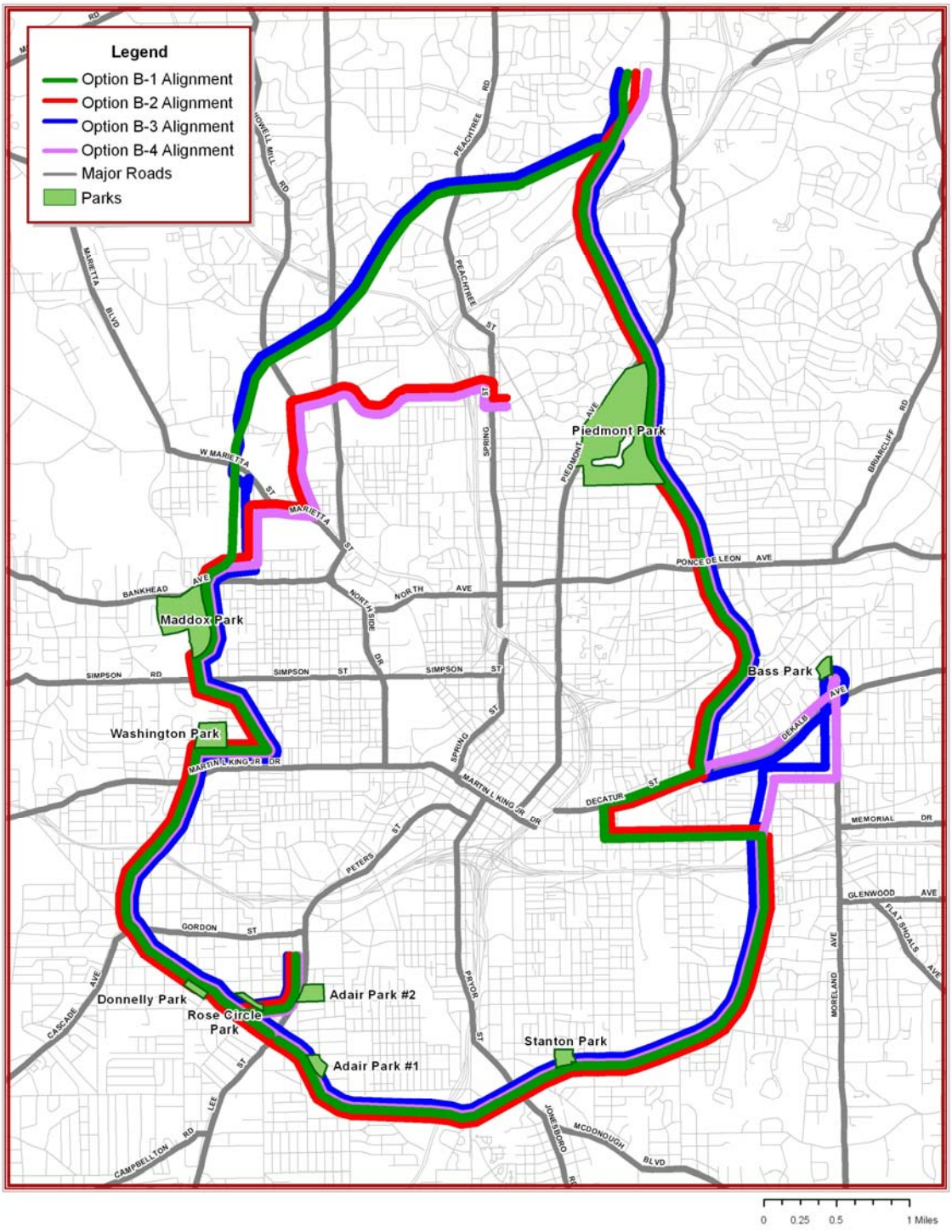
Alternatives B-3 and B-4 both have nine city parks, which include all the same parks listed for the Beltline Alternative B-2 with the addition of Bass Park.

Table 5-14: Impact to Parks and Recreational Facilities

Performance Measure	Alternatives			
	B1	B2	B3	B4
Parks and Recreational Facilities Potentially Impacted	6	8	9	9

The B1 Alternatives have the least potential for impact to parks and recreational facilities, while the B2, B3 and B4 Alternatives have greater potential impacts.

Figure 5-4: Parks and Recreational Facilities Location Map



5.3.8 Historic Resources

Several Federal laws including the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA) promote and encourage the preservation of prehistoric and historic resources. A historic resource/property is a prehistoric or historic district, site, building, structure, or object included in, or eligible for the National Register of Historic Places. The environmental screening of the four Beltline alternatives revealed a number of historic resources within the 200 foot buffer of each alternative. Figure 5-5 shows the location of these resources in relation to the alignments. The following section provides a description of the historic resources identified through the environmental screening.

Alternative B1

One National Register of Historic Places (NRHP) listed archaeological site and one determined eligible archaeological site were identified within the buffer area for Alternative B1. Oakland Cemetery, is listed on the NRHP and Maddox Park, was determined eligible for inclusion in the NRHP.

A total of 13 above ground historic resources were identified within the study corridor for Alternative B1. Of these resources, two are individual resources and 11 are historic districts.

Alternative B2

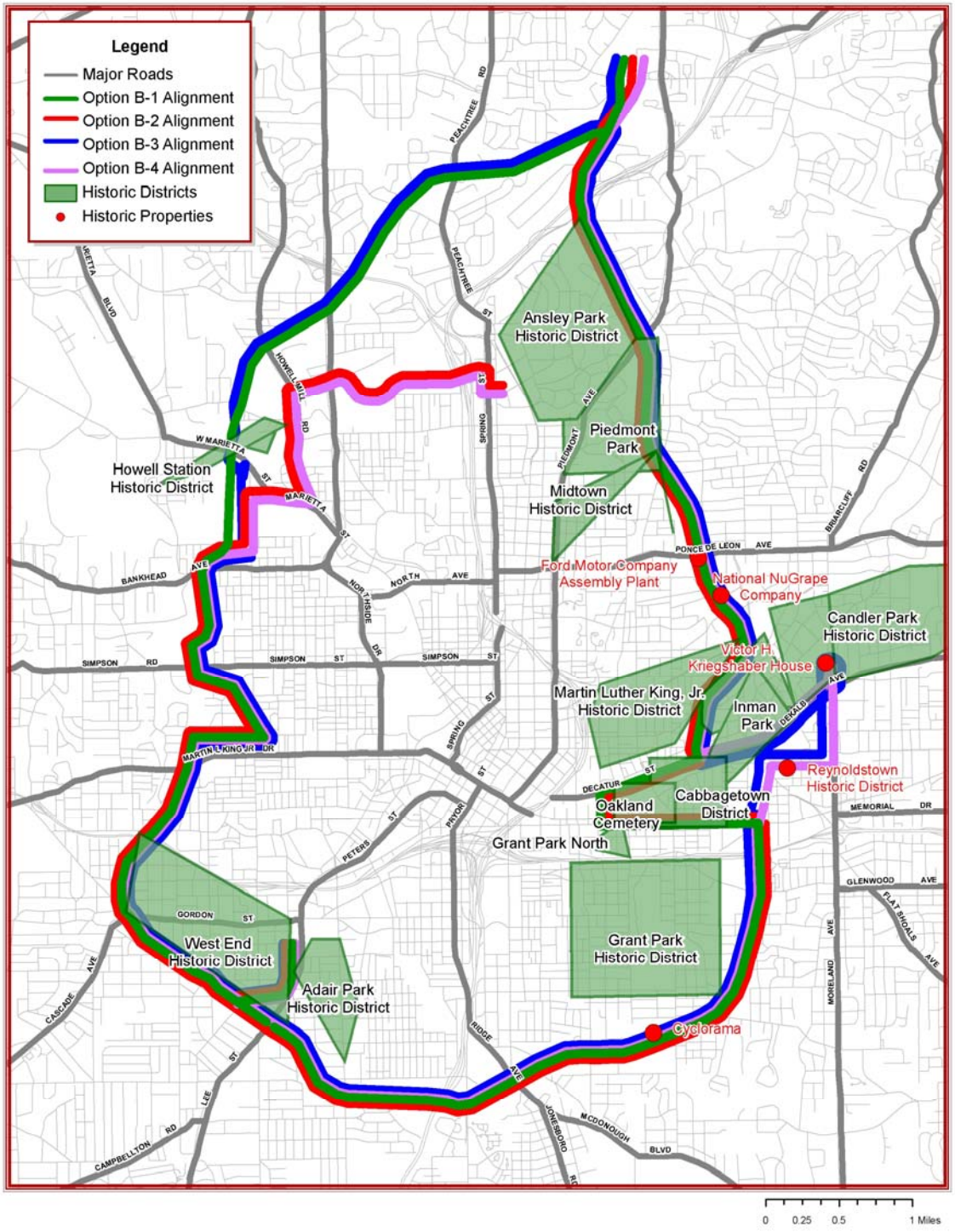
There are three archaeological sites within the buffer area for Alternative B2. Of these, one is listed on the NRHP.

There are also 12 above ground historic resources listed on the NRHP within the buffer area for Alternative B2. Of those resources, two are individual resources and ten are historic districts.

Alternative B3

Two archaeological sites were identified within the buffer area for Alternative B3 as a result of preliminary screening; however none of them are listed on the NRHP. There are a total of 16 above ground historic resources listed on the NRHP within the buffer area for Alternative B3. Of those resources, three are individual resources and 13 are historic districts.

Figure 5-5: Historic Resource Location Map



Alternative B4

Three archaeological sites were identified within the buffer area for Alternative B4 as a result of preliminary screening; however none of them are listed on the NRHP. There are a total of 14 above ground historic resources listed on the NRHP within the buffer area for Alternative B4. Of those resources, three are individual resources and 11 are historic districts.

Table 5-15: Impact to Historic Resources

Performance Measure	Alternatives			
	B1	B2	B3	B4
Historic Resources Impacted	4	5	5	6
Historic Districts	11	10	13	11

Alternative B1 had the least impact to historic and archaeological resources and received the highest rating. Alternatives B2, B3 and B4 had more significant impacts to historic resources and received lower ratings.

Table 5-16 provides a summary and cumulative rating for all categories of potentially impacted resources.

Table 5-16: Summary of Impacts to Cultural and Natural Resources

Performance Measure	Alternatives				
		B1	B2	B3	B4
Potentially impacted cultural and natural resources - Number of historic and archaeological sites, parklands, cemeteries and wetlands potentially impacted	*(Historic and Archaeological Sites)*	4	5	5	6
	(Historic Districts)	11	10	13	11
	(Wetlands, in acres)	4.2	7.2	4.2	7.2
	(Religious Properties and Cemeteries)	4	6	4	5
	(Parklands)	6	8	9	9
Rating:		10	5	7	2

5.3.9 Traffic Congestion Effects

The following performance measures helped to evaluate how effective the alternatives are in reducing automobile travel as well as any negative impacts on traffic that could be caused by the operation of a new facility that may cross or operate along some streets in the area.

- *Reduction of VMT relative to the Year 2030 No Build Alternative.*
- *Operating impacts, e.g. in-street operation, at-grade crossings, etc.*

5.3.9.1 Savings of Daily Regional VMT

This measure was calculated by multiplying the number of vehicles, auto and truck, on each link of the highway network by the distance of each link. This measure reflects the diversion of highway trips to the transit system and the resulting impact on the highway network. All alternatives resulted in a decrease in regional VMT as compared to the TSM. Again, the alignments to Lindbergh outperformed the alignments to Arts Center. Of the two Lindbergh alignments, the connection to Inman Park (B3) resulted in slightly more savings, 113,000 versus 103,000, than the connection to King Memorial (B1). As a result, B3 received a rating of 10 while B1 was rated as an eight. This relationship was also true for the Arts Center alignments with B4 resulting in a larger VMT savings, 94,000 as compared to 85,000 for B2. The differences in alternatives can be partly attributed to the connectivity to existing transit services, the high number of new riders and the greater accessibility to major activity centers.

Table 5-17: Reduction in Vehicle Miles Traveled

Performance Measure	Alternatives				
	TSM	**B1**	**B2**	**B3**	**B4**
Savings of daily regional VMT from TSM	-	102,600	85,200	113,000	93,900
Rating:	**-**	**8**	**3**	**10**	**5**

5.3.9.2 Operating Impacts

The measure used to determine the operating impact on the environment was in-street operations and at-grade crossings. The analysis included identifying the total miles of in-street operations, at-grade crossings, bridges and tunnels. For example, the results indicate that Alternatives B1 and B3 have the most at-grade

crossings and the least total miles of in-street operations. This information is refined in later phases of project development, particularly during the development of alternatives and associated operating plans. In the conceptual phase, the at-grade crossings and in-street operations were evaluated together to give a qualitative assessment.

In-street operations are not necessarily a burden. If the transit vehicles operate the same or better than the existing vehicles on the surface streets, then there is no perceived burden. Referring to the previous example, the Beltline will have less in-street operations and a significant number of at-grade crossings resulting in a mixed impact to surface street mobility. Refined alternatives and modeling in later phases will allow for more precise impact assessment.

The analysis results show that Alternative B1 is estimated to have 11 at-grade crossings and run approximately 4.26 miles along the current street network. Alternative B2 is estimated to have 10 at-grade crossing and run approximately 7.41 miles along the current street network. Alternative B3 is estimated to have 11 at-grade crossings and run approximately 3.82 miles along the current street network. Alternative B4 is estimated to have 10 at-grade crossings and run approximately 6.97 miles along the current street network.

Table 5-18: Operating Impacts

Performance Measure	Alternatives				
		B1	**B2**	**B3**	**B4**
Operating Impacts – in-street operations; at-grade crossings, etc.	*(At-Grade Crossings)*	11	10	11	10
	(In-Street Operations, in miles)	4.26	7.41	3.82	6.97
Rating:		8	3	10	5

5.4 Summary of Land Use, Redevelopment and Environmental Effects

This section has compared the results of the performance measures to determine how well the alternatives fulfill the corridor land use, economic development, and environmental evaluation areas. The performance measures were rated across all alternatives and have been compiled here to calculate composite ratings (see Tables 5-19 and 5-20 below). These scores indicate how the alternatives compared relative to one another using the performance measures which assess potential positive and negative impacts.

Table 5-19: Overall Rating of Land Use and Redevelopment -- Performance Matrix

Evaluation Criteria	Weight	Alternatives									
		ALT B1 *BRT*	ALT B1 Streetcar	ALT B1 *LRT*	ALT B2 *BRT*	ALT B2 *Streetcar*	ALT B2 *LRT*	ALT B3 *BRT*	ALT B3 *Streetcar*	ALT B4 *BRT*	ALT B4 *Streetcar*
Employees Near Stations	0.04	0.20	0.20	0.20	0.40	0.40	0.40	0.08	0.08	0.28	0.28
Residents Near Stations	0.05	0.50	0.50	0.50	0.25	0.25	0.25	0.35	0.35	0.10	0.10
Land with Development Incentives near stations	0.04	0.12	0.20	0.20	0.32	0.40	0.40	0.04	0.08	0.24	0.28
Vacant/ underutilized land near stations	0.05	0.20	0.30	0.30	0.05	0.15	0.15	0.45	0.50	0.35	0.40
Accessibility to major cultural, educational and recreational facilities	0.04	0.28	0.28	0.28	0.40	0.40	0.40	0.08	0.08	0.16	0.16
Enhancement of Urban Environment	0.03	0.12	0.30	0.30	0.12	0.30	0.30	0.12	0.30	0.12	0.30
Land Use/ Redevelopment Rating:	--	**1.42**	**1.78**	**1.78**	**1.54**	**1.90**	**1.90**	**1.12**	**1.39**	**1.25**	**1.52**

Table 5-20: Overall Rating of Environmental Effects -- Performance Matrix

Evaluation Criteria	Weight	Alternatives									
		ALT B1 *BRT*	**ALT B1 *Streetcar***	**ALT B1 *LRT***	**ALT B2 *BRT***	**ALT B2 *Streetcar***	**ALT B2 *LRT***	**ALT B3 *BRT***	**ALT B3 *Streetcar***	***ALT B4 BRT***	***ALT B4 Streetcar***
Change in Pollutant Emissions	0.03	0.24	0.24	0.24	0.09	0.09	0.09	0.30	0.30	0.15	0.15
Potential Community Impacts	0.05	0.40	0.40	0.40	0.50	0.50	0.50	0.40	0.40	0.50	0.50
Potential Noise Affected Households	0.03	0.21	0.21	0.21	0.30	0.30	0.30	0.06	0.06	0.12	0.12
Potentially Impacted Cultural and Natural Resources	0.03	0.30	0.30	0.30	0.15	0.15	0.15	0.21	0.21	0.06	0.06
Traffic Effects	0.03	0.24	0.24	0.24	0.09	0.09	0.09	0.30	0.30	0.15	0.15
Operating Impacts	0.03	0.24	0.24	0.24	0.09	0.09	0.09	0.30	0.30	0.15	0.15
Environmental Effects Rating:	--	1.63	1.63	1.63	1.22	1.22	1.22	1.57	1.57	1.13	1.13

6.0 Evaluation of Costs and Cost Effectiveness

This chapter details the methodology for developing estimates of cost for the Beltline alternatives. The chapter will compare the ten Build Alternatives by their absolute capital and operating and maintenance (O&M) costs and by ratios that relate these costs to key operations and mobility criteria.

The costs and cost effectiveness criteria include the only performance measures which quantitatively distinguish the alternatives by modal technology (BRT, Modern Streetcar and LRT) as well as alignment. While qualitative measures exist in some of the other evaluation categories by mode, the cost and cost effectiveness criteria are likely to drive the overall ranking of alternatives by mode.

6.1 Capital Cost Methodology

This section describes the capital cost methodology to be used in the preparation of the early engineering Capital Cost Estimate and Report for the MARTA Beltline Alternatives Analysis Project. The cost portion of this methodology is based on other transit corridor planning projects including those used by the Tri-County Metropolitan Transportation District of Oregon (Tri-Met), Hampton Roads Transit (HRT), Charlotte Area Transit System (CATS) Seattle's Sound Transit and MARTA Projects. Cost information for other more general civil construction items was drawn from sources at the City of Atlanta, Georgia Department of Transportation, and North Carolina Department of Transportation.

The Federal Transit Administration (FTA) now requires project sponsors agencies/owners of all "New Starts" projects to conform to their guidelines as of January 1, 2005 (as revised January 21, 2005 and June 24, 2005) to be eligible for consideration of federal funding. They suggest that their guidelines be used until the completion of the project. The cost estimate was prepared in the FTA Standard Cost Category format to preserve the ability to move forward in the "New Starts" process in the event that the New Starts Program will be the chosen funding strategy.

With the above in mind, the methodology for the Beltline Alternatives Analysis must be flexible and adaptable to the FTA guidelines. It must be able to incorporate meaningful new data (such as local unit cost rates) and must produce an estimate that is auditable and can be tracked through preliminary engineering, and possibly final design and construction. At the same time the estimate of cost for the project must be adaptable to the 10 major categories and 59 minor categories required by the FTA in their "New Starts" guidelines. This

methodology, prepared for the MARTA Beltline Alternatives Analysis Project, will meet these goals. It will require close coordination of effort between URS, MARTA, and other local stakeholders to be sure of proper input of vehicle information, schedule decisions, frequency of service, budget sourcing, interim financing, escalation calculations and any other element of cost applicable and not specifically covered by this methodology.

The Project Cost Estimate was prepared in four steps. In the first step, the defined alignment was broken down into logical geographical limits or line segments for estimating purposes. The concept engineering drawings applicable to each line segment were used to define the nature of the work and facilitate a "take-off" or measurement of the work to establish quantities. Where actual quantities were measurable, length of track, item counts, pipe lengths etc., these measurements were used. The US Standard units of measure were used (i.e. CY for Cubic Yard, FT for Feet, LS for Lump Sum and the like). Where insufficient detail existed to estimate quantities with certainty, a conceptual design or cross-section was developed as the basis for the estimation of quantities. The BeltlLine project has been broken into four geographical quadrants which are defined as the Northeast, Southeast, Southwest and Northwest.

The second step is the selective application of initial cost data to the quantities established in step one and to develop unit cost and lump sum cost items in current year dollars. As many items as needed will be used. These items were organized into a “Bid Item Tabulation” format.

The third step was to consolidate or gather these items into the major project cost elements as defined below. Descriptions of the work, quantities, unit costs, Engineering and Administration, and Contingency were itemized and calculated in this portion of the estimate. Costs were calculated in 2006 dollars (2006$). The major cost elements were grouped and summary costs were calculated in this step of the process.

The final step, step four, is to input the resultant estimate cost data from step three into the new FTA standard cost categories (SCC) format guideline workbook. This step will be initiated when it has been determined that the project is officially seeking “New Starts” funding and will be including in the formal application to FTA. When the project estimate, project schedule (developed elsewhere) and when the implementation schedule is determined the escalation rate (assume 3.5 percent until MARTA and FTA agree on a rate) are input to the FTA workbook, the year of expenditure (YOE) estimated costs will then be automatically calculated in the FTA workbook. This will require close coordination among the MARTA project team to insure this document accurately reflects the project sponsors reporting requirements.

A report entitled *Capital Cost Estimating Methodology for Metropolitan Atlanta Rapid Transit Authority (MARTA) Inner Core Alternatives Analysis Project* was presented to MARTA in July 2006. This report more fully details how the capital costs were calculated.

6.2 Capital Cost Estimates

The results of applying the capital methodology are presented in this section. Detailed worksheets were developed for each alternative. Table 6-1 presents the capital cost for each alternative broken out by FTA Standard Cost Categories.

Table 6-1: Total Capital Cost by Category

Cost Category	Alternatives									
	B1 *BRT*	**B1 *Streetcar***	**B1 *LRT***	**B2 *BRT***	**B2 *Streetcar***	**B2 *LRT***	**B3 *BRT***	**B3 *Streetcar***	**B4 *BRT***	**B4 *Streetcar***
Guideway & Track	88.20	117.30	117.30	70.51	110.71	110.71	90.28	121.82	72.59	115.23
Stations, Stops & Terminals	10.80	10.80	10.80	10.55	10.55	10.55	11.05	10.80	10.80	10.55
Support Facilities, Yard & Shop	10.75	14.38	14.38	9.25	14.38	14.38	9.66	13.44	9.67	13.46
Site work & Special Conditions	86.83	104.81	106.72	30.49	62.28	64.69	87.17	101.54	30.98	65.23
Systems	16.61	78.54	124.61	17.87	75.76	120.20	16.85	80.33	18.23	78.48
Right-of-way	88.63	88.63	88.63	69.76	69.76	69.76	90.01	90.01	71.14	71.14
Vehicles	48.00	113.10	91.00	41.00	95.70	81.25	49.00	116.00	42.00	98.60
Professional Services	108.84	154.76	169.35	75.49	128.21	143.16	110.02	156.28	77.30	132.23
Unallocated Contingency	99.58	146.31	156.29	70.18	121.55	132.71	100.73	147.94	71.86	125.32
Total Cost	$558.24 M	$828.63 M	$879.08 M	$395.10 M	$688.90 M	$747.41 M	$564.77 M	$838.16 M	$404.57 M	$710.24 M
Annualized Cost	$43.80M	$63.13M	$66.40M	$31.84M	$53.30M	$57.34M	$44.41M	$64.00M	$32.61M	$55.07M

As noted in the capital cost methodology discussion in 6.1, the alternative alignments were broken down into logical geographical limits or line segments for estimating purposes. Table 6-2 presents these segment breakouts. The costs assume the system would be built in a clockwise fashion starting from Lindbergh Station in the north. An example of how this affects the cost of each phase is that on the NE segment two transfer stops are included where the Beltline interfaces with existing MARTA stations. In the last segment in the NW there are no transfer stops included in the cost because they have already been counted in other segments.

Table 6-2: Total Capital Cost by Line Segment

Segment	Alternatives									
	B1 *BRT*	**B1 *Streetcar***	**B1 *LRT***	**B2 *BRT***	**B2 *Streetcar***	**B2 *LRT***	**B3 *BRT***	**B3 *Streetcar***	**B4 *BRT***	**B4 *Streetcar***
Northeast	162.64	239.47	255.05	157.22	235.56	255.29	161.35	247.13	160.09	239.08
Southeast	133.28	219.46	237.30	130.58	214.50	231.84	141.32	236.19	138.63	228.17
Southwest	54.71	90.72	98.87	54.56	84.92	92.57	54.49	88.97	53.11	89.07
Northwest	207.61	278.98	287.86	52.74	153.92	167.71	207.61	265.87	52.74	153.92
Total	$558.24 M	$828.63 M	$879.08 M	$395.10 M	$688.90 M	$747.41 M	$564.77 M	$838.16 M	$404.57 M	$710.24 M

The capital cost rating for the Build Alternatives is based on the total capital costs for each alternative. The TSM Alternative capital cost is $29.55 million, with an annual cost of $3.69 million. Table 6-3 presents the rating of the Build Alternatives. Among the modes, the BRT alternatives maintained the lowest capital costs, with values ranging from $395.10 million to $564.77 million. Of these alternatives, alignment alternative B2 had the lowest overall cost and received a 10 rating, followed by alignments B4, B1 and B3. The ranking order by alignment remained consistent across modes, with Streetcar costs ranging from $688.90 million (Alignment B2) to $838.16 million (Alignment B3), and LRT costs ranging from $747.41 million (Alignment B2) to $879.08 million (Alignment B1). Despite equivalent assumptions by mode for capital requirements along Beltline stops, the more capital-intensive vehicle costs and infrastructure requirements at facilities and along right-of-way for the rail alternatives result in a decided advantage for the BRT alternatives for this measure.

The additional right-of-way requirements along the Northwest-Lindbergh corridor, plus the incremental addition of one Beltline stop, accounts for most of the difference among Northwest alignment alternatives. The capital cost advantage for the Northwest-Arts Center alternatives was significant enough to allow Alternative B2 *LRT* to outperform the Northwest-Lindbergh alternatives for Streetcar. The single additional stop for Eastside-Inman Park/Reynoldstown alternatives explains the slight advantage for the Eastside-King Memorial alternatives.

Table 6-3: Total Capital Cost Rating

Performance Measure	Alternatives									
	B1 *BRT*	B1 *Streetcar*	B1 *LRT*	B2 *BRT*	B2 *Streetcar*	B2 *LRT*	B3 *BRT*	B3 *Streetcar*	B4 *BRT*	B4 *Streetcar*
Capital costs for construction, equipment, etc.	$558.24 M	$828.63 M	$879.08 M	$395.10 M	$688.90 M	$747.41 M	$564.77 M	$838.16 M	$404.57 M	$710.24 M
Rating:	**8**	**3**	**1**	**10**	**6**	**4**	**7**	**2**	**9**	**5**

6.3 Operating and Maintenance Cost Methodology

Operating and maintenance (O&M) costs are estimated for the improvements to MARTA bus and rail service in the study area. The estimates are produced by cost estimating models calibrated based on recent MARTA budget experience. The input data for the models are estimates of future operating statistics, equilibrated using the results of the ridership forecasting model, as described in Chapter 3.

6.3.1 Background Bus Service O&M Costs

A MARTA bus O&M cost model was developed using MARTA FY 2004 National Transit Database (NTD) information. Bus costs are identified in NTD by category (e.g., Transit Operations, Transit Maintenance), and by cost type (e.g., labor, fringe benefits, materials & supplies). Operating statistics were used to drive each line item cost. For example, the cost for bus operators is driven by the number of revenue bus-hours. Consideration was given to fixed costs. Overall, the cost model assumes about 19.6 percent of MARTA's reported FY 2004 bus-related O&M costs are fixed (i.e., not driven by a variable).

The cost model was validated by testing the model to FY 2002 and FY 2003 data. Overall, the model is sufficiently estimating MARTA bus-related costs.

An inflation factor variable was added to the cost model, to inflate costs for project alternatives to 2006 dollars. A 6.48 percent inflation rate was used, based on Bureau of Labor Statistics Consumer Price Index (CPI) data for the Atlanta region (April 2004 to April 2006).

6.3.2 Bus Rapid Transit O&M Costs

BRT O&M costs are anticipated to be similar to typical MARTA bus O&M cost characteristics, with a few exceptions. Therefore, BRT operating statistics were

first applied to the MARTA O&M cost model to arrive at an initial O&M cost estimate. The BRT operating statistics that were applied to the cost model include an assumed additional garage for the BRT vehicles. Additional costs that were then added to account for BRT operations were:

- **Fuel Costs -** BRT service would be provided with articulated buses that are likely to have lower fuel economies than MARTA's current fleet. MARTA's FY 2004 average cost/revenue bus-mile for fuel was $0.45 per revenue bus-mile (inflated to 2006 dollars). It is assumed that articulated BRT buses might have 25 percent higher fuel consumption rates than MARTA's current buses. Thus, an additional 25 percent ($0.1125 per revenue bus-mile) has been added to account for increased fuel costs.
- **Vehicle Maintenance Costs -** BRT service along the Beltline is anticipated to use unique articulated vehicles that include ITS features. Thus, vehicle maintenance costs are anticipated to be higher than costs for the typical MARTA bus. The MARTA bus O&M cost spreadsheet model indicates that the variable portion of vehicle maintenance costs is equivalent to $1.269 for every revenue vehicle mile. An additional 25 percent ($0.317 per revenue bus-mile) has been added to account for possible unique BRT bus-related vehicle maintenance costs.
- **BRT Station Maintenance Costs -** BRT stations/stops are anticipated to be similar in size/amenities as streetcar stations/stops. The streetcar O&M cost model (described later in this memo) generates a unit cost of approximately $18,600 per streetcar station/stop for the streetcar alternatives. This same unit cost has been applied for BRT stations/stops.
- **BRT Roadway Maintenance -** The BRT alternatives include sections of exclusive busway. Regular maintenance will be required along these sections. A unit cost of $25,000 per directional lane mile ($50,000 per route-mile) has been assumed. This is consistent with rates that have been used in other BRT studies across the nation.

6.3.3 Streetcar O&M Costs

For purposes of estimating O&M costs, it is assumed that an Office of Streetcar Operations and Maintenance would be created under MARTA's Department of Operations. A detailed O&M cost model was developed for estimating Streetcar O&M costs. The cost model assumes that Streetcar costs, when evaluated on a line item basis, will be similar to LRT costs, with select adjustments to account for streetcar operations. For example, the Streetcar stations/stops that are envisioned for the Beltline will be much smaller in scale and have fewer amenities than existing typical LRT stations. Therefore, LRT station-related maintenance costs were factored down to account for streetcar operations.

FY 2004 NTD data was collected for the following peer LRT systems:

- Salt Lake City
- St. Louis
- Denver
- San Jose
- Portland
- Dallas
- Baltimore

Non-labor costs for these peer systems were determined on a unit cost basis (e.g., Contract Services for Vehicle Maintenance were determined on a car-mile basis), and then averaged. Outliers (unit costs for peer systems that seemed significantly less or greater than the other peer systems) were thrown out. Adjustments were then made to account for streetcar operations. All non-labor unit costs under Vehicle Operations were assumed to be the same as the peer LRT systems. Non-labor unit costs under Vehicle Maintenance were reduced to account for differences in maintaining a streetcar vehicle versus a LRT vehicle. Non-labor unit costs under Facility Maintenance were also reduced to account for maintaining streetcar stations versus LRT stations, and to account for likely differences in train control systems for streetcar versus LRT.

LRT costs in the streetcar model are based on an assumed staffing plan that is consistent with typical staffing levels for LRT systems, with some adjustments made to account for streetcar operations. Salaries, wages and fringe benefits for each assumed staffing position is based on current MARTA salaries, wages and fringe benefits for comparable positions.

Propulsion power costs are based on the power consumption rate for the Portland streetcar vehicle, with adjustments made to account for 2-car trains. Georgia Power rates that are presently charged to MARTA for its rail operations were used to estimate propulsion power utility costs.

The cost model assumes some additional staffing and non-labor expenses for MARTA's Senior Director of Operations Department (the department that would oversee the Office of Streetcar Operations and Maintenance). It also assumes additional expenses for other MARTA departments that would be impacted by streetcar service. For example, there are likely to be additional costs for the Customer Service Department to handle streetcar service-related telephone calls.

As with the bus and BRT O&M costs, an inflation factor variable was added to the cost model, to inflate costs for project alternatives to 2006 dollars. A 6.48

percent inflation rate was used, based on Bureau of Labor Statistics Consumer Price Index (CPI) data for the Atlanta region (April 2004 to April 2006).

6.3.4 Light Rail Transit O&M Costs

The methodology for estimating LRT O&M costs is similar to the Streetcar O&M cost methodology. The streetcar O&M cost model assumes that streetcar O&M cost characteristics would be similar to LRT cost characteristics, but with select adjustments. Thus, methodology used to estimate LRT O&M costs is the same as for streetcar O&M costs, but without several of the adjustments that were made to the streetcar O&M cost model. For example, the streetcar model factored down vehicle maintenance costs on a per vehicle basis, as the streetcar is a smaller, less complex vehicle than a typical light rail vehicle (LRV). Thus, the Streetcar O&M cost model includes several adjustments for vehicle maintenance. The LRT O&M cost model does include adjustments to station facility maintenance-related costs. The stations/stops that are envisioned for the Beltline with a LRT mode are still anticipated to be similar to those for a Streetcar or BRT mode, and not have the typical station amenities that are reflected in the peer LRT systems.

6.4 Operating and Maintenance Cost Estimates

Table 6-4 presents systemwide O&M cost estimates for the various Beltline alternatives. These cost estimates are expressed in 2006 dollars and represent the change from MARTA's existing system in FY 2004 associated with the alternatives.

MARTA local bus costs were estimated by applying the incremental change in corridor bus statistics to the model's FY 2004 calibration operating statistics data, and then inflating to 2006 dollars. Note that cost changes for the Atlantic Station shuttle were estimated with the MARTA bus O&M cost model. As discussed in the identification and Development of Alternatives chapter, some of the feeder bus network changes include the modification or elimination of existing bus routes in areas where routes essentially duplicate segments of the Beltline. Thus, for some alternatives, the local bus O&M costs show an associated cost savings. BRT O&M costs were estimated by first applying BRT bus statistics to the MARTA O&M cost model, and then adding costs for the unique BRT features noted earlier (i.e., additional vehicle maintenance costs, station maintenance costs and busway maintenance costs).

O&M cost estimates for the TSM alternative are $11.37 million. The O&M costs of the Build alternatives range from $11.81 million to $18.69 million. Among modes, the BRT alternatives maintained the lowest O&M costs. Overall, costs

for an LRT alternative are at least $2 million more than costs for a streetcar alternative.

Table 6-4: Total Operating and Maintenance Costs: Change from Existing

Mode	Alternatives									
	B1+ BRT	B1+ Streetcar	B1+ LRT	B2+ BRT	B2+ Streetcar	B2+ LRT	B3+ BRT	B3+ Streetcar	B4+ BRT	B4+ Streetcar
Local Bus	($1.24 M)	($1.24 M)	($1.24 M)	$0.62 M	$0.62 M	$0.62 M	($1.52 M)	($1.52 M)	$0.34 M	$0.34 M
BRT	$13.05 M	N/A	N/A	$11.92 M	N/A	N/A	$13.43 M	N/A	$12.31 M	N/A
Streetcar	N/A	$16.47 M	N/A	N/A	$15.98 M	N/A	N/A	$16.98 M	N/A	$16.52 M
LRT	N/A	N/A	$18.37 M	N/A	N/A	$18.07 M	N/A	N/A	N/A	N/A
Total O&M Cost	**$11.81 M**	**$15.23 M**	**$17.12 M**	**$12.54 M**	**$16.60 M**	**$18.69 M**	**$11.91 M**	**$15.46 M**	**$12.65 M**	**$16.86 M**

Notes:
1. Costs are in 2006 dollars.
2. Local bus costs are shown as the net change in costs associated with changes in bus service.
3. BRT, streetcar, and LRT costs are shown as total costs for those particular modes.

With regard to cost differences by alignment, the additional MARTA local bus costs associated with the new route connecting Atlantic Station to Lindbergh in the Northwest-Arts Center alignment alternatives result in an advantage for the Northwest-Lindbergh alternatives for this measure.

With regard to modal differences, streetcar and LRT are more efficient than BRT operationally with regards to the number of vehicles required, vehicle-hours and vehicle-miles. However, those efficiencies are only occurring in the peak periods with the Beltline operating plans. Service characteristics are the same during other time periods, due to the mode-generic assumptions regarding alignment, station locations and average speeds.

As a result, the annual O&M costs for Streetcar and LRT are higher than BRT. This is because the costs for operating and maintaining systems unique to rail (e.g., track, catenary, more complex vehicles) are greater than the savings obtained from the peak period operational efficiencies.

Table 6-5 presents the incremental annual O&M cost estimates in FY 2006 dollars of each Build alternative, using the TSM alternative as the basis for the calculations. As with the capital costs, the BRT alternatives had the lowest annual incremental O&M costs among modes. The lowest cost was $0.45 million for Alignment B1, which received a 10 rating, followed by Alignments B3, B2 and

B4. The ranking order by alignment remained consistent across modes, with Streetcar costs ranging from $3.87 million (Alignment B1) to $5.49 million, and LRT costs ranging from $5.76 million (Alignment B1) to $7.32 million (Alignment B2).

Table 6-5: Annual Incremental Operating and Maintenance Costs

Performance Measure	Alternatives									
	B1 *BRT*	**B1 *Streetcar***	**B1 *LRT***	**B2 *BRT***	**B2 *Streetcar***	**B2 *LRT***	**B3 *BRT***	**B3 *Streetcar***	**B4 *BRT***	**B4 *Streetcar***
Incremental annual operating & maintenance costs, compared to the Baseline alternative (TSM)	$0.45 M	$3.87 M	$5.76 M	$1.18 M	$5.23 M	$7.32 M	$0.54 M	$4.10 M	$1.29 M	$5.49 M
Rating:	**10**	**6**	**2**	**8**	**4**	**1**	**9**	**5**	**7**	**3**

6.5 Assessment of Cost Effectiveness

In this section, ridership, operating performance and cost results are examined to determine the cost-effectiveness of each alternative. The five cost and cost-effectiveness measures are outlined in Section 2.2 – Evaluation Process. The ridership results are presented in Section 4.2 – Assessment of Mobility and Accessibility Impacts and the capital and O&M costs are presented in Sections 6.2 and 6.4, respectively. Results relating to net operating cost per passenger mile, incremental cost per unit travel time saved and incremental cost per new rider are presented below, along with an overall assessment of the cost and cost-effectiveness performance.

6.5.1 Net Operating Cost per Passenger Mile

As shown in Table 6-6, with incremental operating costs less than 31 cents per passenger mile, BRT alternatives were the most cost effective by mode for this performance measure. All Build Alternatives proved more cost effective in this performance measure than the Baseline TSM Alternative ($0.3156 per passenger mile).

Most cost effective among the BRT alternatives was $0.3084 per passenger mile for Alignment B3 which received a 10 rating, followed by Alignments B1, B4 and

B2. The ranking order by alignment remained consistent within modes. The order among alignments was consistent with the rankings for the Total Ridership mobility measure.

When analyzed by mode, the Northwest-Lindbergh alternatives generally outperformed their comparative Northwest-Arts Center alternatives for this measure, likely due to lower absolute incremental O&M costs. The advantage in cost effectiveness by alignment allowed Alternative B1+LRT to slightly edge Alternative B2 *Streetcar*. The Eastside-Inman Park/Reynoldstown alternatives similarly outperformed their Eastside-King Memorial counterparts for this measure.

Table 6-6: Incremental O&M Costs per Passenger Mile

Performance Measure	Alternatives									
	B1 *BRT*	**B1 *Streetcar***	**B1 *LRT***	**B2 *BRT***	**B2 *Streetcar***	**B2 *LRT***	**B3 *BRT***	**B3 *Streetcar***	**B4 *BRT***	**B4 *Streetcar***
Incremental operating cost per passenger mile for regional transit	$0.3090	$0.3110	$0.3123	$0.3100	$0.3124	$0.3136	$0.3084	$0.3105	$0.3097	$0.3121
Rating:	**9**	**5**	**3**	**7**	**2**	**1**	**10**	**6**	**8**	**4**

6.5.2 Incremental Cost per Unit of Travel Time Savings

As shown in Table 6-7, BRT Alternatives were again the most cost effective by mode for this performance measure. Among BRT alternatives, the most cost effective figure was $24.98 per hour saved for Alignment B3, which received a 10 rating, followed by Alignments B4, B1 and B2. Within each rail alternative, Alignment B3 (Modern Streetcar only) proved the most cost effective for this measure, followed by Alignments B1, B4 (Modern Streetcar only) and B2. Alternative B2 *LRT* received the lowest rating with a cost effectiveness of $62.26 per hour saved for this measure.

Despite the lowest capital costs, the B2 Alternatives performed lowest within modes for this measure due to inferior values for travel time savings, and due to relatively high O&M costs for the Northwest Arts-Center alternatives. Inversely, Alignment B3 included the highest capital cost alternatives within modes, but outperformed other alternatives due to superior travel time savings and due to relatively lower O&M costs for the Northwest-Lindbergh alternatives.

Table 6-7: Incremental Cost per Unit Travel Time Saved

Performance Measure	Alternatives									
	B1 *BRT*	**B1 *Streetcar***	**B1 *LRT***	**B2 *BRT***	**B2 *Streetcar***	**B2 *LRT***	**B3 *BRT***	**B3 *Streetcar***	**B4 *BRT***	**B4 *Streetcar***
Incremental annualized capital cost + incremental O&M costs, divided by the travel time savings, in dollars per hour	$28.23	$44.08	$47.67	$29.94	$56.00	$62.26	$24.98	$38.98	$27.47	$51.73
Rating:	**8**	**5**	**4**	**7**	**2**	**1**	**10**	**6**	**9**	**3**

6.5.3 Incremental Cost per New Rider

As with the other cost effectiveness measures, Table 6-8 shows the BRT modes as the most cost effective for the incremental cost per new rider measure. The BRT alternative for Alignment B4 holds the lowest cost ratio at $5.58 per new rider and received a 10 rating, followed by the BRT alternatives Alignments B2, B3 and B1. Among rail alternatives, Alignment B3 (Modern Streetcar only) was the most cost effective, followed by Alignment B1, B4 (Modern Streetcar only) and B2. Alternative B2 *LRT* is the least cost effective at $12.04 per new rider and received the lowest rating. The Modern Streetcar alternatives hold superior cost effectiveness figures for this measure among the rail alternatives.

The new regional ridership figure appears to drive the alignment rankings among the rail alternatives for this cost effectiveness measure, while a combination of total capital costs and new regional ridership appears to affect the rankings of the BRT alternatives by alignment.

Table 6-8: Incremental Cost per New Rider

Performance Measure	Alternatives									
	B1 *BRT*	**B1 *Streetcar***	**B1 *LRT***	**B2 *BRT***	**B2 *Streetcar***	**B2 *LRT***	**B3 *BRT***	**B3 *Streetcar***	**B4 *BRT***	**B4 *Streetcar***
Incremental annualized capital cost + incremental O&M costs, divided by new riders	$6.50	$10.15	$10.98	$5.79	$10.83	$12.04	$6.42	$10.02	$5.58	$10.50
Rating:	**7**	**5**	**2**	**9**	**3**	**1**	**8**	**6**	**10**	**4**

6.6 Results of the Cost and Cost Effectiveness Evaluation

As shown in Table 6-9, the BRT Alternatives hold the highest scores for cost effectiveness among modal technologies. Alternatives B3 *BRT* and B4 *BRT* equally receive the highest overall cost effectiveness ratings, with B3 *BRT* receiving the highest scores for operating cost per passenger mile and incremental cost per unit of travel time savings, and B4 *BRT* receiving the highest score for incremental cost per new rider. Alternatives B1 *BRT* and B2 *BRT* are tied for third among alternatives for this evaluation category.

Among the rail alternatives, the Modern Streetcar options outperform the LRT Alternatives. B3 *Streetcar* is the highest ranked rail alternative for cost effectiveness.

Within each mode, the Eastside-Inman Park Alternatives edge their comparative Eastside-King Memorial Alternatives for cost effectiveness. For the rail alternatives, the Northwest-Lindbergh Alternatives prove more cost effective than the Northwest-Arts Center Alternatives.

Table 6-9: Overall Rating of Costs and Cost Effectiveness -- Performance Matrix

Evaluation Criteria	Weight	Alternatives									
		B1 *BRT*	B1 *Streetcar*	B1 *LRT*	B2 *BRT*	B2 *Streetcar*	B2 *LRT*	B3 *BRT*	B3 *Streetcar*	B4 *BRT*	B4 *Streetcar*
Operating and Maintenance (O&M) Costs	**0.05**	0.50	0.30	0.10	0.40	0.20	0.05	0.45	0.25	0.35	0.15
Net Operating Costs per Passenger Mile	**0.03**	0.27	0.15	0.09	0.21	0.06	0.03	0.30	0.18	0.24	0.12
Capital Costs	**0.05**	0.40	0.15	0.05	0.50	0.30	0.20	0.35	0.10	0.45	0.25
Incremental Cost per Unit Travel Time Saved	**0.06**	0.48	0.30	0.24	0.42	0.12	0.06	0.60	0.36	0.54	0.18
Incremental Cost Per New Rider	**0.06**	0.42	0.30	0.12	0.54	0.18	0.06	0.48	0.36	0.60	0.24
Cost Effectiveness Rating:	--	2.07	1.20	0.60	2.07	0.86	0.40	2.18	1.25	2.18	0.94

7.0 Public Involvement

An important element of the Alternatives Analysis was the conduct of an extensive public outreach process that was guided by a comprehensive and inclusive public involvement program. The Alternatives Analysis Public Involvement Program was built upon the existing framework of participation created by the Feasibility Study. The Public Involvement Plan established new forums for information exchange while taking advantage of existing committees and structures already in place. The primary purpose of the public involvement program was to educate the stakeholders in the study area to ensure full understanding of the alternatives, evaluation measures and impacts and to facilitate consensus on a Locally Preferred Alternative (LPA). The majority of the outreach for the process occurred prior to the split of the Beltline and C-Loop concepts into separate alternatives analyses in January 2006.

The outreach process utilized a variety of methods for engaging and informing the public including stakeholder interviews, meetings, charettes, speaker's bureau and newsletters. As a result of these outreach techniques, significant input was received from the public. To ensure consistency and facilitate smooth project flow, committee memberships and database information developed in the Feasibility Study were carried over into the Alternatives Analysis. All outreach activities continued to be conducted by quadrant. The stakeholder database was updated on a regular basis and contained more than 3,000 individual mail and e-mail addresses for communication. The intent of this chapter is to give a detailed description and summary results of the outreach process.

7.1 Stakeholder Advisory Committee

The Stakeholder Advisory Committee (SAC) was initiated to serve as an extension of and voice for the general public and included fifty-nine members. The SAC worked closely with and provided additional information to the project team regarding needs, wants and concerns of people who live and work in the study area. To ensure consistency and facilitate smooth project flow, committee memberships and database information developed in the Feasibility Study were carried over into the Alternatives Analysis. A total of four SAC meetings were held and the summaries are contained in Appendix D.

7.2 Public Meetings

Ten public meetings were conducted during the Alternatives Analysis phase. A total of 463 individuals attended the meetings throughout the process in addition to the large response of individual comments submitted by mail, e-mail, and on comment forms. The first round of public meetings was conducted in September

2005. A joint meeting with the public and Stakeholder Advisory Group meeting was conducted in December 2005 and the meetings concluded in August of 2006. The public was notified utilizing a variety of techniques including direct mail, e-mail, distribution of meeting announcements in public places, MARTA's web site and Rider's Digest, listings in various newspapers and official press releases placed by MARTA. The table below lists the dates, locations and number of attendees at the series of meetings.

Table 7-1: Summary of Public Meeting Results

Date	Location	Public Attendees
September 20, 2005 6:00-8:00 pm	Senior Citizens Services Center	14
September 22, 2005 6:00-8:00 pm	Georgia Hill Neighborhood Facility	22
September 26, 2005 6:00-8:00 pm	Mall at West End	19
September 27, 2005 6:00-8:00 pm	North Avenue Presbyterian Church	45
September 29, 2005 6:00-8:00 pm	Rollins School of Public Health	40
December 8, 2005 6:00-8:00 pm	Joint SAC and Public Meeting All Saints Episcopal Church	108
August 7, 2006 6:00-8:00 pm	Peachtree Street Branch Library	72
August 8, 2006 7:00-9:00 pm	East Lake YMCA	59
August 9, 2006 7:00-9:00 pm	Mozley Park Recreation Center	37
August 10, 2006 7:00-9:00 pm	North Avenue Presbyterian Church	47

The first round of public meetings was conducted in September 2005 at five locations in the study. The topics included:

- Review of Feasibility Findings
- Alternatives Analysis Framework and Timeline

- Purpose and Need
- Goals and Objectives
- Next Steps/Ongoing Activities

The second meeting (charrette) of the Alternatives Analysis Phase was conducted in December 2005 as a joint meeting with the public and the Stakeholder Advisory Committee. Topics included:

- Review of Origin/Destination Analysis
- Discussion of Evaluation Methodology
- Charrette Exercise for Station Location Preference

The third round of public meetings was conducted in August 2006. The following topics were covered:

- Inner Core Process Recap
- Overview of Beltline/C-Loop Split
- Description of Beltline Alternatives
- Beltline Technical Analysis and Results

7.3 Newsletters and Presentation Materials

Newsletters, fact sheets and visual presentations are essential public information materials that provide educational and updated information to the public about the MARTA Inner Core Alternatives Analysis. The newsletter has become an important education medium for the project. In the spring of 2005, the first newsletter was released announcing the completion of the Inner Core Feasibility Study and the commencement of the Alternatives Analysis. The newsletter gave a detailed overview of the project, a summary of the findings from the Feasibility Study, and included the next steps of the Alternatives Analysis. In September 2005, the project fact sheet was released updating the public on the progress of the Alternatives Analysis and announced the dates for the upcoming series of public meetings. A third newsletter was published in July 2006 detailing the split of the Beltline and C-Loop projects and identified the four alternatives entered into detailed screening for the selection of the Locally Preferred Alternative. A total of 6,000 newsletters were mailed and distributed to individuals, organizations and in public places during the Alternatives Analysis phase.

7.4 Media Advisories and Press Releases

All media outreach and press releases were conducted by MARTA's Communication staff. Media outlets were notified in advance of every public meeting for advertising. Additionally, several articles were written by various

publications about the Alternatives Analysis process. Media representatives also attended public meetings and reported on the results.

7.5 Other Outreach Activities

Stakeholder Interviews

During the course of the Alternatives Analysis study, there were a total of 16 stakeholder interviews conducted, which included community leaders, elected or appointed officials, agency staff members and/or neighborhood activists. This is a follow up to the sixty-six that were conducted during the Feasibility Study. The stakeholders represented various audiences and target groups expected and desired to participate in the planning process. The main purpose of the stakeholder interviews was to provide a transition briefing from the Feasibility to the Alternatives Analysis phase. The interviews allowed the project team to learn about the stakeholder's perceptions of the project, the planning process and the political climate of the study area. The stakeholder interviews also gave insight to other individuals who may be beneficial in the participation process. Interviews were conducted in the beginning of the project. Summaries of the interviews are contained in Appendix B.

Speakers Bureau

To maintain ongoing contact with the public, several organizations including NPU's, neighborhood and civic organizations, business groups and others were targeted and engaged in a series of speakers' bureau activities. Speaker's bureaus expand the opportunities for community participation. Speaking to community groups at a place of their choice and soliciting specific feedback increases the number of participants in a study process. This outreach technique proved to be very effective for the study process.

8.0 Alternatives Analysis Results

This chapter details the results of the Detailed Screening analysis, applying the evaluation methodology described in Chapter 2 to the analyses in Chapter 4 through Chapter 7. Results are identified for each of four evaluation categories: Mobility and Accessibility, Land Use and Redevelopment, Environmental Effects, and Cost Effectiveness. Following the results is a comparison of alignment options for both the northwest quadrant (with stops at either Arts Center or Lindbergh MARTA Station) and the eastside (with stops at either Inman Park-Reynoldstown or King Memorial MARTA Station), a comparison of technology options (BRT, LRT, and Modern Streetcar), and an analysis of the ratings, merits and disadvantages for each of the ten Detailed Screening Alternatives based on the evaluation criteria.

The sections which follow summarize the effect of public outreach and input on the technical analysis and present the top rated alternatives for consideration as the Locally Preferred Alternative (LPA). The chapter concludes with a discussion of next steps by MARTA and project stakeholders, as the Beltline proceeds from the AA toward latter phases of project development.

8.1 Detailed Screening Evaluation Results

Mobility and Accessibility

Overall, Alternatives B1 and B3 (Northwest-Lindbergh) outperformed Alternatives B2 and B4 (Northwest-Arts Center) in this evaluation category. Modeling of patronage and operations estimated that accessing Lindbergh in the northwest quadrant can produce at least 16.0 percent more annual riders in Year 2030, 18.9 percent more new regional transit system riders in 2030, and at least 46.9 percent greater annual regional travel time savings, when compared to Northwest-Arts Center alignment options. The Northwest-Lindbergh alignments also reduced the demand for rail-to-rail transfers at the Five Points MARTA Station, by at least 9.0 percent. Based on Year 2000 demographic data, the Northwest-Lindbergh alignment would have slightly improved rapid transit access for at least 4.5 percent more of the population above age 65, 1.5 percent more of the low-income population, and 1.5 percent more households without automobile access.

Modeling of operations for the Northwest-Arts Center alignment options resulted in significantly higher boardings on Study Area feeder routes (+6000 and +4000 for Alternatives B2 and B4, respectively) than the Northwest-Lindbergh options (-300 and +400 for respective Alternatives B1 and B3). This difference is primarily due to the presence of the Northwest Beltline Connector bus route in the B2 and

B4 alternatives. The Northwest-Arts Center alignment would have slightly improved rapid transit access for at least 2.9 percent more of the minority population in the study area, based on Year 2000 data.

Each Eastside-King Memorial alternative (B1 and B2) outperformed its comparable Eastside-Inman Park/Reynoldstown alternative (B3 and B4) in the Mobility and Accessibility category, although the variation in performance was significantly smaller than that for the Northwest alignment options. Based on Year 2000 data, the Eastside-King Memorial options would have slightly improved rapid transit access for more of the transportation disadvantaged populations, including at least 9.0 percent more of households lacking access to automobiles, 8.8 percent more of the low-income population, 6.1 percent more of the minority population, and 0.9 percent more of the population above age 65. The active redevelopment of Capitol Homes and Grady Homes, both within half-mile of the King Memorial MARTA Station and proposed Beltline stop, by the Atlanta Housing Authority into mixed-use, mixed-income developments, may narrow the lead in the transit dependent accessibility measure.

Individually, Alternative B1 outpaced Alternative B3 for the highest score in the Mobility and Accessibility category, in part due to superior figures in the performance measures for service to transit dependent populations. This is despite Alternative B3 having slightly superior modeling results for ridership and travel time savings.

Land Use and Redevelopment

Overall, Alternatives B1 and B2 (Eastside-King Memorial) outperformed Alternatives B3 and B4 (Eastside-Inman Park/Reynoldstown) in this evaluation category. There were only marginal differences in projected Year 2030 population among alternatives, as the Eastside-King Memorial options would improve access near stations for at least 0.5 percent more residents. The variation in projected Year 2030 employment near stations is more evident, as the Eastside-King Memorial options would improve access near stations for at least 9.4 percent (33,000) more employees. The advantage in projected employment is intuitive given the station's proximity to the Central Business District, as Grady Memorial Hospital and Georgia State University are partially within the a half-mile radius of the station.

The Eastside-Inman Park/Reynoldstown Alternatives had marginally higher proportions of vacant or underutilized land within a half-mile of Beltline stations (1.9 percent). However, within an equivalent half-mile station buffer the Eastside-King Memorial Alternatives held more land with economic and zoning development incentives (10.6 percent). The Eastside-King Memorial Alternatives

also provided access to higher proportions of major cultural, educational and recreational facilities.

Each Northwest-Arts Center Alternative (B2 and B4) outperformed its comparable Northwest-Lindbergh Alternative (B1 and B3, respectively) in this category, although the degree of scoring variation was smaller than the differences between the Eastside alignment alternatives. The Northwest-Lindbergh Alternatives would improve rapid transit access for at least 0.6 percent more Year 2030 residents, but the Northwest-Arts Center Alternatives would enhance rapid transit access for at least 23.7 percent (74,000) more Year 2030 employees. Similarly, Alternatives B1 and B3 included at least 0.9 percent more vacant or underutilized land near stations, but Alternatives B2 and B4 included at least 20.8 percent more land with development incentives. This may be attributable to the presence of single-family residential areas and commercial land uses that are more established along the Northwest-Lindbergh corridor, producing relatively lower levels of demand for incentives to redevelop land.

Individually, Alternative B2 outpaced Alternative B1 for the highest scores among alignments in this evaluation category, due to superior performance in station proximity to employees, land with development incentives, and major cultural, educational and recreational facilities. This is despite having 0.6 percent less of the projected Year 2030 population and 1.5 percent less vacant or underutilized land within a half-mile from station locations.

Input from the public and other key stakeholders revealed no substantial variation in the effects of the alignments on the potential to enhance the visual quality of the urban environment. The most significantly expressed interest in this regard was the consistency of the Northwest-Lindbergh alignment with the original “loop” vision for the Beltline, maximizing the potential for the integration of trails, parks and transit throughout the Beltline corridor.

Variation among scores by mode were due to the reduced effect of BRT, relative to rail modes, on the capacity to redevelop vacant or underutilized land and land with development incentives beyond ¼-mile of Beltline stations. Similarly, the scoring variation represents the less beneficial impacts of BRT, relative to the rail modes, on the visual and aesthetic qualities of the urban environment, within the context of the Beltline study area. Research by the analysis team and public input did not identify a significant need for scoring variation between Modern Streetcar and LRT, but both modes outperformed BRT in this evaluation category.

Environmental Effects

Overall, Alternatives B1 and B3 (Northwest-Lindbergh) outperformed Alternatives B2 and B4 (Northwest-Arts Center) in this evaluation category. Regional emissions modeling results indicated a minimum 14.7 percent greater reduction in annual tons of nitrogen oxide emissions for the Northwest-Lindbergh alignment options, and a minimum 9.7 percent greater reduction in volatile organic compound (VOC) emissions. Accordingly, regional savings in vehicle miles traveled were at least 20.3 percent greater for the Northwest-Lindbergh options. There are 3.15 fewer miles of in-street operation generated by the Northwest-Lindbergh options, as the Northwest-Arts Center alignments continue on surface streets from Joseph E. Lowery Boulevard (north of Jefferson Street) to Arts Center MARTA Station. The Northwest-Lindbergh options hold incremental advantages in a lower number of potentially impacted historic and archaeological sites, religious properties and cemeteries, and a lower amount of potentially impacted wetlands.

Alternatives B2 and B4 are superior in the significantly reduced number of residences and non-residential land uses potentially impacted by either right-of-way acquisition or noise. The Northwest-Arts Center Alternatives avoid the right-of-way requirements in the Northwest-Lindbergh corridor associated with additional guideway needed to operate alongside CSX active freight rail. The Northwest-Arts Center Alternatives hold an incremental edge in the number of potentially impacted historic districts.

Alternatives B1 and B2 (Eastside-King Memorial) outperformed Alternatives B3 and B4 (Eastside-Inman Park/Reynoldstown), respectively, in the Environmental Effects category. However, the variation in performance was significantly smaller than that for the Northwest alignment options. The Eastside-King Memorial alignments have the potential to affect at least 17 percent fewer households by direct noise impacts, and pose incrementally fewer potential impacts to historic and archaeological sites, historic districts, and parklands.

Individually, Alternative B1 outpaces Alternative B3 for the highest score in this evaluation category, mostly because of superior performance to the latter alternative in the number of potential households affected by noise.

Cost Effectiveness

Of the four evaluation categories, Cost Effectiveness is the only category with quantitative performance measures that can delineate the alternatives by mode. Regardless of alignment, BRT Alternatives outperformed their comparative modes across all performance measures in the Cost Effectiveness category. As the ridership and operating model results detected differences among new

ridership and travel time savings solely by alignment and not by mode, the denominators had little or no effect on the rankings of modes in the Cost Effectiveness performance measures. All BRT Alternatives outperformed Modern Streetcar and LRT in the ratio performance measures, which included net operating cost per passenger mile, incremental cost per unit travel time saved, and incremental cost per new rider. While Modern Streetcar generally outperformed LRT, Alternative B1 *LRT* ranked higher than Alternative B2 *Streetcar* in incremental operating cost per passenger mile, and higher than both Alternative B4 *Streetcar* and Alternative B2 *Streetcar* in cost per unit travel time saved.

Unlike the previous three evaluation categories, parity was evident in the overall Cost Effectiveness ranking of alternatives by alignment. Strictly among the BRT Alternatives, each alignment ranked either first, second, third or fourth for at least one of the five performance measures. The Northwest-Lindbergh rail alternatives were superior to Northwest-Arts Center Alternatives for O&M costs, operating cost per passenger mile, cost per unit travel time saved, and cost per new rider, but the Northwest-Lindbergh BRT Alternatives require higher capital costs than Northwest-Arts Center, and cost more per new rider. The Eastside-Inman Park/Reynoldstown alignment alternatives were higher in absolute costs than the Eastside-King Memorial options for the capital and O&M cost measures, but proved superior for the ratio performance measures, and for the overall Cost Effectiveness evaluation criteria.

Overall, Alternatives B4 *BRT* and B3 *BRT* tied for the highest scores in this evaluation category. Alternative B4 *BRT* offered the lowest incremental cost per new rider, while Alternative B3 *BRT* provided the lowest net operating cost per passenger mile and the lowest incremental cost per unit travel time saved. Table 8-1 provides a comparative summary of alternatives for each evaluation category.

Table 8-1: Summary Ranking of Alternatives

Evaluation Category	Alternatives									
	B1 *BRT*	**B1 *Streetcar***	B1 *LRT*	B2 *BRT*	B2 *Streetcar*	B2 *LRT*	**B3 *BRT***	**B3 *Streetcar***	B4 *BRT*	B4 *Streetcar*
Mobility & Accessibility (30%)	**2.62**	**2.62**	2.62	1.45	1.45	1.45	**2.54**	**2.54**	1.38	1.38
Land Use & Redevelopment (25%)	**1.42**	**1.78**	1.78	1.54	1.90	1.90	**1.12**	**1.39**	1.25	1.52
Environmental Effects (20%)	**1.63**	**1.63**	1.63	1.22	1.22	1.22	**1.57**	**1.57**	1.13	1.13
Cost Effectiveness (25%)	**2.07**	**1.20**	0.60	2.07	0.86	0.40	**2.18**	**1.25**	2.18	0.94
Total Alternative Scores	**7.74**	**7.23**	6.63	6.28	5.43	4.97	**7.41**	**6.75**	5.94	4.97

Top Rated Alternatives in **BOLD**

High Ranking	
Medium High Ranking	
Medium Low Ranking	
Low Ranking	

Comparison – Northwest Quadrant Alignment Options

When comparing total scores for the alignment options in the Northwest quadrant of the Beltline, the Northwest-Lindbergh options hold a clear advantage over the Northwest-Arts Center options. The three Alternative B1 modes and the two Alternative B3 modes make up all of the alternatives ranked in the top five. The Northwest-Lindbergh Alternatives are projected to access lower levels of projected Year 2030 station-area employment, and there is potential for additional community impacts/disruptions through property acquisitions. However, the Northwest-Lindbergh alignment alternatives are bolstered by superior performance in the Mobility and Accessibility category, higher Year 2030 projections of station-area residential population, and advantages in most measures of Environmental Effects and Cost Effectiveness, including operating costs and regional reductions in pollutant emissions and vehicle miles traveled.

Comparison – Eastside Alignment Options

When comparing alternatives by mode, each Eastside-King Memorial Alternative consistently outscores their Eastside-Inman Park/Reynoldstown counterpart in this Detailed Screening analysis, although the scale of these advantages are small relative to the comparison of alignments in the Northwest quadrant.

There is an inherent penalty in the ranking methodology for both Eastside-Inman Park/Reynoldstown Alternatives due to the lack of a third mode (LRT, which is fatally flawed for Alternatives B3 and B4). As one example, when either the B3 or B4 Alternatives are tied for the lowest performance for a measure, it receives a rating of 2, while the lowest rating an Eastside-King Memorial Alternative (B1 or B2) can receive under the same circumstances is a 3.

If LRT was available as a third mode for evaluation and ranking of the Eastside alignment options, Alternative B3 would have likely edged Alternative B1 for the highest score in the Mobility and Accessibility category, and Alternative B3 would have likely tied Alternative B1 for the highest score in the Environmental Effects category. However, even if LRT was available as a third mode for evaluation and ranking, due to the sizable performance gap between sets of Eastside alignment alternatives, the B1 and B2 alignments would continue to prove superior across modes in the Land Use and Redevelopment category.

Alternative B3 *BRT* would have likely edged Alternative B4 *BRT* for the highest score in the Cost Effectiveness category, and Eastside-Inman Park alignments (Alternatives B3 and B4) would have likely outperformed their Eastside-King Memorial counterparts (Alternatives B1 and B2) for LRT. In total, the scoring gaps between the Eastside alternatives are likely larger in this analysis than would have occurred if LRT were present for Alternatives B3 and B4. However,

the order of scores among alternatives evaluated in the Detailed Screening phase would not be altered.

Despite lower absolute costs for capital and O&M, the Eastside-King Memorial options are generally less cost-effective by mode due to inferior ridership and travel time savings. However, each Eastside-King Memorial Alternative outperformed its Eastside-Inman Park/Reynoldstown counterpart in most categories pertaining to station and centerline proximity. Such categories include accessibility to major cultural, educational and recreational facilities, Year 2000 transit dependent population, projected Year 2030 total population and employment, and fewer households potentially impacted by noise.

Comparison – Mode/Technology Options

The Cost Effectiveness criteria drive the ultimate ranking of alternatives by mode, as they quantitatively classify the performance of each alternative while making up 25 percent of the total score. The qualitative measures that rate modes in the Land Use and Redevelopment section, by comparison, collectively make up 12 percent of the total score.

Prior to the application of the cost effectiveness performance measure, the Modern Streetcar and LRT alternatives consistently outperform the BRT alternatives, due to superior qualitative scoring for their potential to enhance the urban environment and to support redevelopment within a half-mile of Beltline stops.

Due to the Cost Effectiveness criteria, however, BRT surpasses the rail modes in the total scoring within each alignment. For the Eastside-King Memorial alignments (B1 and B2), Modern Streetcar consistently outranked LRT, again due to superior overall performance in cost effectiveness.

Greater competition among modes in the technical analysis might have been achievable if the decision were reached in the Alternatives Analysis phase to significantly increase station spacing, affecting sensitivity to travel time, ridership and cost effectiveness. However, evaluation and decision making regarding stations to remove for rail alternatives would be inappropriately premature at this phase. Regardless of which technology is selected as part of an LPA, consideration of strategies to improve the Beltline project's competitiveness and advancement for Federal funding support will occur, prior to and during the preliminary engineering phase of project development.

Evaluation – Alternative B1 BRT

Alternative B1 *BRT* ranks first among ten alternatives in the Detailed Screening analysis. The alternative benefits from the cost effectiveness of the BRT modes, as the B1 BRT's score is the second highest in the overall Cost Effectiveness criteria and first among all Build Alternatives for annual O&M costs.

The B1 Alternatives have superior scores in both the Mobility and Accessibility and the Environmental Effects criteria. Within a half-mile of Beltline stops, the B1 alternatives had the highest proportions of projected Year 2030 population, and the highest proportions of the transit dependent population based on Year 2000 Census data. B1 Alternatives also have the most beneficial effect on heavy rail transfers at the Five Points MARTA Station.

As a Northwest-Lindbergh alignment alternative, however, it poses significantly greater potential for community impacts and disruptions than the Northwest-Arts Center Alternatives.

As a BRT Alternative, it has limited public acceptability and redevelopment potential and less capability to enhance the urban environment relative to the rail alternatives.

Evaluation – Alternative B1 Streetcar

Alternative B1+Streetcar ranks third among ten alternatives in this analysis and highest among the four evaluated Modern Streetcar Alternatives. This alternative has the lowest annual O&M costs for any non-BRT alternative, but the third-highest capital cost, higher than Alternative B2 *LRT*, which travels to Arts Center MARTA Station in lieu of the Lindbergh MARTA Station.

Like B1 *BRT*, the alternative benefits by having superior scores in both the Mobility and Accessibility and the Environmental Effects criteria. As a Northwest-Lindbergh alignment alternative, however, it poses significantly greater potential for community impacts and disruptions than the Northwest-Arts Center alternatives.

As a rail alternative, it has superior public acceptability and redevelopment potential and greater capability to enhance the urban environment relative to the BRT alternatives.

Evaluation – Alternative B1 LRT

Alternative B1 *LRT* ranks fifth among the ten alternatives evaluated in this analysis and was the superior of the two LRT alternatives. Scoring higher than

Alternative B2 *LRT* in overall cost effectiveness, B1 *LRT* also edges B2 *Streetcar* in operating cost per passenger mile and outperforms both B2 *Streetcar* and B4 *Streetcar* in incremental cost per unit travel time saved. However, it is the most capital-intensive of all projects in terms of cost, and requires the second highest amount of annual O&M costs.

Like B1 *BRT* and B1 *Streetcar*, the alternative benefits by having superior scores in both the Mobility and Accessibility and the Environmental Effects criteria. However, as a Northwest-Lindbergh alignment alternative, it poses significantly greater potential for community impacts and disruptions than the Northwest-Arts Center alternatives.

As a rail alternative, it has superior public acceptability and redevelopment potential and greater capability to enhance the urban environment relative to the BRT alternatives.

Evaluation – Alternative B2 BRT

Alternative B2 *BRT* ranks sixth overall among ten evaluated in this analysis, and is the highest ranked among the Northwest-Arts Center alignment options. This alternative required the lowest capital cost among all alternatives. Alternative B2 *BRT* ranked fourth overall in operating cost per passenger mile and incremental cost per unit travel time saved, despite having the lowest performance for these measures among the BRT Alternatives.

The B2 Alternatives would produce significantly more boardings of feeder bus routes in the study area. B2 Alternatives would reach the highest proportion of minority population based on Year 2000 data, and the highest level of projected Year 2030 employment. These alternatives have the most station-area land with development incentives, and the highest level of accessibility to major cultural, educational and recreational facilities.

As a Northwest-Arts Center alignment alternative, it poses significantly less potential for community impacts and disruptions than the Northwest-Lindbergh Alternatives.

The B2 Alternatives had the lowest figures for total annual Beltline ridership, new ridership on the regional system, regional savings in travel time and vehicle miles traveled reductions in pollutant emissions, and vacant/underutilized land near stations. The B2 Alternatives would require the longest amount of in-street operation, and would also potentially impact the most wetlands, religious properties and cemeteries.

As a BRT Alternative, it has limited public acceptability and redevelopment potential and less capability to enhance the urban environment relative to the rail alternatives.

Evaluation – Alternative B2 Streetcar

Alternative B2 *Streetcar* ranked eighth among ten alternatives evaluated in this analysis. Of the Modern Streetcar Alternatives, this alternative required the lowest capital cost, but required the highest operating cost per passenger mile, incremental cost per unit travel time saved, and incremental cost per new rider.

The B2 Alternatives would produce significantly more boardings of feeder bus routes in the study area. B2 Alternatives would reach the highest proportion of minority population based on Year 2000 data, and the highest level of projected Year 2030 employment. These alternatives have the most station-area land with development incentives, and the highest level of accessibility to major cultural, educational and recreational facilities.

As a Northwest-Arts Center alignment alternative, it poses significantly less potential for community impacts and disruptions than the Northwest-Lindbergh Alternatives.

The B2 Alternatives had the lowest figures for total annual Beltline ridership, new ridership on the regional system, regional savings in travel time and vehicle miles traveled reductions in pollutant emissions, and vacant/underutilized land near stations. The B2 Alternatives would require the longest amount of in-street operation, and would also potentially impact the most wetlands, religious properties and cemeteries.

As a rail alternative, it has superior public acceptability and redevelopment potential and greater capability to enhance the urban environment relative to the BRT Alternatives.

Evaluation – Alternative B2 LRT

Alternative B2 *LRT* tied for last (with B4 *Streetcar*) among the alternatives evaluated in this study. Despite requiring less capital cost than B1 *LRT*, the alternative ranked last in all other measures under the Cost Effectiveness category.

The B2 Alternatives would produce significantly more boardings of feeder bus routes in the study area. B2 Alternatives would reach the highest proportion of minority population based on Year 2000 data, and the highest level of projected Year 2030 employment. These alternatives have the most station-area land with

development incentives, and the highest level of accessibility to major cultural, educational and recreational facilities.

As a Northwest-Arts Center alignment alternative, it poses significantly less potential for community impacts and disruptions than the Northwest-Lindbergh Alternatives. As a rail alternative, it has superior public acceptability and redevelopment potential and greater capability to enhance the urban environment relative to the BRT Alternatives.

The B2 Alternatives had the lowest figures for total annual Beltline ridership, new ridership on the regional system, regional savings in travel time and vehicle miles traveled reductions in pollutant emissions, and vacant/underutilized land near stations. The B2 Alternatives would require the longest amount of in-street operation, and would also potentially impact the most wetlands, religious properties and cemeteries.

Evaluation – Alternative B3 BRT

Alternative B3 *BRT* ranked second among ten alternatives in this analysis, and is the highest ranked among all Eastside-Inman Park/Reynoldstown alignment options. The alternative tied with Alternative B4 *BRT* for the highest overall score in the Cost Effectiveness criteria, with the lowest operating cost per passenger mile, the lowest incremental cost per unit of travel time saved, and the second lowest annual O&M cost. Further, the B3 Alternatives are projected to produce the highest levels of total annual Beltline ridership, new ridership on the regional system, savings in both travel time and regional miles traveled, and reductions in regional criteria pollutant emissions. The B3 Alternatives would operate with the lowest in-street mileage.

As a B3 Alternative, it would access the lowest proportion of minority population based on Year 2000 Census data, and would access the lowest projected proportion of Year 2030 study area employment, the lowest acreage of station-area land with development incentives, and the lowest combination of major cultural, educational and recreational facilities. The B3 Alternatives would also potentially impact the most historic districts and parklands.

As a BRT Alternative, it has limited public acceptability and redevelopment potential and less capability to enhance the urban environment relative to the rail alternatives. The low performance of the B3 alignment and the BRT mode alternatives resulted in this alternative having the lowest score in the Land Use and Redevelopment category.

Evaluation – Alternative B3 Streetcar

Alternative B3+Streetcar ranked fourth among the ten alternatives evaluated in this analysis. This alternative held the highest score among Modern Streetcar alternatives for cost effectiveness, despite having the second highest capital cost among all alternatives. This is due to being the highest-ranked Modern Streetcar alternative for operating cost per passenger mile, incremental cost per unit travel time saved, and incremental cost per new rider.

The B3 Alternatives are projected to produce the highest ridership levels, travel time savings benefits and reductions in regional criteria pollutant emissions, while requiring the lowest in-street mileage during operation.

As a B3 Alternative, it would access the lowest proportion of minority population based on Year 2000 Census data, and would access the lowest projected proportion of Year 2030 study area employment, the lowest acreage of station-area land with development incentives, and the lowest combination of major cultural, educational and recreational facilities. The B3 Alternatives would also potentially impact the most historic districts and parklands.

As a Northwest-Lindbergh alignment alternative, it poses significantly greater potential for community impacts and disruptions than the Northwest-Arts Center Alternatives.

As a rail alternative, it has superior public acceptability and redevelopment potential and greater capability to enhance the urban environment relative to the BRT Alternatives.

Evaluation – Alternative B4 BRT

Alternative B4 *BRT* ranks seventh among the ten alternatives evaluated in this analysis, and lowest among all BRT Alternatives. Tied with Alternative B3 *BRT* for the highest score in the Cost Effectiveness category, B4 *BRT* produces the lowest incremental cost per new rider and the second lowest values for capital cost and incremental cost per unit travel time saved. B4 *BRT* ranked fourth overall for annual O&M costs, despite having the lowest performance for this measure among the BRT Alternatives.

As a Northwest-Arts Center alignment alternative, it poses significantly less potential for community impacts and disruptions than the Northwest-Lindbergh Alternatives.

The B4 Alternatives have the lowest overall scores in the Mobility and Accessibility and the Environmental Effects categories. These alternatives

resulted in the lowest reduction in heavy rail transfers at the Five Points MARTA Station, the lowest levels of accessibility to most transit dependent populations based on Year 2000 data, and the greatest potential for impacts to historic and archaeological sites, wetlands and parklands. The B4 Alternatives also access the lowest proportion of projected Year 2030 population within a half-mile of Beltline stops.

As a BRT Alternative, it has limited public acceptability and redevelopment potential and less capability to enhance the urban environment relative to the rail alternatives.

Evaluation – Alternative B4 Streetcar

Alternative B4 *Streetcar* tied for last (with B2 *LRT*) among the alternatives evaluated in this study. This alternative required the highest annual O&M costs among Modern Streetcar alternatives.

As a Northwest-Arts Center alignment alternative, it poses significantly less potential for community impacts and disruptions than the Northwest-Lindbergh Alternatives.

As a rail alternative, it has superior public acceptability and redevelopment potential and greater capability to enhance the urban environment relative to the BRT Alternatives.

The B4 Alternatives have the lowest overall scores in the Mobility and Accessibility as well as the Environmental Effects categories. These alternatives resulted in the lowest reduction in heavy rail transfers at the Five Points MARTA Station, the lowest levels of accessibility to most transit dependent populations based on Year 2000 data, and the greatest potential for impacts to historic and archaeological sites, wetlands and parklands. The B4 Alternatives also access the lowest proportion of projected Year 2030 population within a half-mile of Beltline stops.

8.2 Public Outreach Approach and Input

The outreach process utilized a variety of methods for engaging and informing the public including stakeholder interviews, meetings, workshops, speaker's bureau and newsletters, as described in Chapter 7 – Public Involvement. As a result of these outreach efforts, valuable input was incorporated into the LPA decision-making process. Public input leading up to the Detailed Screening phase of the analysis is documented in the Prescreening/Fatal Flaw Analysis Technical Memorandum – June 2006. Given below are the resounding themes

presented during the August 2006 public meetings and through subsequent comments:

- A general preference for Streetcar or Light Rail as the preferred mode of transit
- Overwhelming opposition towards Bus Rapid Transit as the preferred mode of transit
- Alternatives B3 and B1 were the most highly favored alternatives
- Significant concerns expressed regarding environmental impact, efficiency, compatibility with parks and trails, the ability of transit to spur development, handicap accessibility, pavement of the right-of-way, keeping current with technology, and connectivity of proposed routes.
- A strong preference in favor of the Eastside-Inman Park/Reynoldstown alignment as compared to the Eastside-King Memorial alignment.
- The public was very concerned about their opinions and preferences being factored into the decision making process
- Overall, the public was in support of the Beltline project

As previously noted, public input has been incorporated throughout the analysis process. For example, Section 5.2.4 – Enhancement of Urban Environment contains an extensive presentation of public concerns expressed relative to this subject matter and their incorporation in the evaluation of alternatives.

8.3 Top Rated Alternatives Considered

Alternatives **B1 *BRT***, **B3 *BRT*** and **B1 *Streetcar*** achieved more than 70 percent of the maximum available score and are classified as "High" in the Detailed Screening of alternatives. Alternative **B3 *Streetcar***, with the highest score among alternatives classified as "Medium-High", would likely have achieved slightly more than 70 percent of the maximum available score if LRT was not fatally flawed for evaluation in alignments B3 and B4. Therefore, this alternative is also brought forward for further consideration. These are the alternatives which most effectively satisfy the Purpose and Need statement developed for the Beltline AA.

Among ten alternatives analyzed, this set reflects the superior ranking of the Northwest-Lindbergh alignment options and the BRT and Modern Streetcar technology options. **Alternative B1 *BRT*** attains the highest score due to the Northwest-Lindbergh and BRT elements, plus the slight advantage of Alternative B1 (King Memorial) over Alternative B3 (Inman Park/Reynoldstown) among Eastside alignment options.

By including **Alternative B3 *BRT***, the set of recommended alternatives reflects the moderate public interest and the greater comparability among Eastside options when compared to the Northwest options.

By including **Alternatives B1 *Streetcar*** and **B3 *Streetcar***, the set of recommended alternatives takes into account the highest-performing non-BRT alternative, given reservations expressed by much of the general public over the practicality and community-level effects of BRT relative to other modes. The B1 *Streetcar* alternative would be the highest performing alternative (along with B1 *LRT*) before the consideration of Cost Effectiveness criteria. Similarly, the B3 *BRT* alternative would be the fourth best performing option (after B1 *BRT*), due to the slight advantage in the Eastside-King Memorial alignment.

The Detailed Screening process narrowed four alignment alternatives to two and three technology alternatives to two. Recommendations for the selection of an LPA from among the above four options, was essentially tiered by alignment (B1 or B3) and by mode (BRT or Streetcar).

Staff Recommendation

The technical results of the BeltLine AA show the continuous loop (Lindbergh to Lindbergh) as the best performing option, with the East Line connection at the King Memorial station. The best performing technology, considering capital and operating cost estimates and environmental impacts was Bus Rapid Transit (BRT). During the Public Outreach process, the preference indicated by the community and major stakeholders was the continuous loop (Lindbergh to Lindbergh) with the East Line connection at the Inman Park/Reynoldstown station to capture development along Moreland Avenue and increase alignment consistency with the TAD boundary. The general public and business and political stakeholders also strongly supported rail technology over bus rapid transit.

MARTA Staff recommended the B3 Alternative (Lindbergh-to-Lindbergh Loop via Inman Park/Reynoldstown) as the preferred alignment with the specific rail technology to be defined in the next phase of study.

Advantages of the recommended alternative are listed as follows:

- Retains continuous loop as prescribed in original BeltLine concept
- Alignment option generated the highest ridership
- Rail technology indicates the permanence of transit desired by developers for transit-oriented development
- Increases transit accessibility and connectivity to and within forty-five neighborhoods
- Predominantly contained within the approved Tax Allocation District
- Supported by the City of Atlanta and BeltLine Partners

- Strong community and business support for rail technology operating along the continuous loop

Action by MARTA Board of Directors

After consideration of the aforementioned alternatives and technologies, the MARTA Board of Directors formally adopted staff's recommendation of the Alternative B3 alignment configuration as the Locally Preferred Alternative (LPA) with an unspecified rail technology to be determined in the next phase of study.

8.4 Next Steps

MARTA will pursue all opportunities to advance the development of the Beltline LPA into the next phases of project development, including preliminary engineering. To maintain the Beltline's eligibility for federal funds, the project development process will follow FTA procedural guidance for projects competing for New Starts funding. Key tasks will include:

- Developing a Strategic Implementation Phasing Plan and Identification of a Minimum Operable Segment (MOS);
- Coordination with FTA on establishing the specific Purpose and Need and Transportation System Management Alternatives for the MOS;
- Preparation of preliminary project management and financial plans to update the full Beltline LPA in the *Regional Transportation Plan* by the Atlanta Regional Commission;
- Completion of scoping activities required under the National Environmental Policy Act (NEPA); and
- Provision of project justification and financial data to FTA as a prerequisite to entry into the preliminary engineering phase.

Continued involvement of the public and continued coordination with regional stakeholders is vital for ensuring meaningful progress through these next steps of project development.

APPENDIX A
ROUTE-LEVEL BUS OPERATING STATISTICS FOR MARTA NON-PREMIUM BUS SERVICE

BELTLINE BUS OPERATING STATISTICS:

TSM ALTERNATIVE

Route	Route Name	Route Pattern	Dir Code	Service Frequency AM	Mid	PM	Eve	Late	Total Trips	Rte. Dist./Time Miles	Min.	Average Weekday Peak Buses	Total Rev Hrs	Total Rev Mi's
TSM 1	Westside TSM	West End/Lindbergh	2	**6**	12	**6**	15	30	251	11.29	52	20.0	251.0	2,833.8
TSM 2	Eastside TSM	West End/Lindbergh	2	**6**	12	**6**	15	30	251	15.83	73	28.0	351.4	3,973.3
4	McDonough/Grady Hosp.	McDonough/GA St.	2	22	22	22	30	0	101	7.36	39	4.0	73.7	740.1
11	English Ave.	Garibaldi/Bankhead	2	25	45	25	45	0	65	6.88	38	4.0	54.0	446.1
27	Monroe Dr./Lindbergh Sta.	Lindbergh/North Ave.	2	30	40	30	40	0	65	8.60	38	3.0	48.4	554.5
32	Eastland/Bouldercrest	Bouldercrest/King	2	60	34	30	34	34	69	10.78	42	3.0	51.9	745.7
		Eastland/King	2	0	0	30	0	0	12	5.38	24	3.0	9.0	64.6
34	Gresham	Inman/Meadowview	2	23	45	23	45	45	70	8.62	38	4.0	53.6	603.1
50	Bankhead	Bankhead Apts./Bankhead	2	32	56	32	56	28	56	6.86	30	2.0	29.7	382.2
		Bowen Hms./Bankhead	2	32	56	32	56	0	51	3.79	14	2.0	27.4	194.9
51	Simpson/Atlanta Univ.	Vine City/Collier Heights	2	25	25	25	25	0	94	7.75	35	4.0	78.0	725.1
68	Donnelly	West End/Donnelly	2	35	70	35	70	0	44	2.71	15	1.0	12.8	118.5
81	Venetian	Campbellton/Oakland City	2	30	30	30	60	0	70	2.88	12	1.0	17.5	201.6
97	Georgia Ave./Grant Pk.	Grant Pk./Aquarium	2	30	40	30	60	0	61	4.39	25	2.0	30.3	265.8
98	West End/Arts Ctr.	Ashby/Arts Ctr.	2	15	30	15	0	0	86	4.70	26	4.0	43.0	404.2
107	Glenwood	Inman/Indian Ck.	2	20	28	20	37	0	90	12.08	41	5.0	74.7	1,083.2
	Atlantic Station Shuttle	Atlantic Station/Arts Ctr.	2	5	10	5	10	10	318	1.77	10	5.0	66.3	562.9
Total:									***1752***			***95.0***	***1273***	***13900***
Change from Existing:												***45.0***	***536***	***6218***

NOTES:

1. TSM East and West service frequencies equilibrated to 6-minutes
2. TSM East and West route distances measured. Travel time based on 13 mph avg. speed (from travel demand model).
3. Deleted routes:
   52 Knight Pk./Kennedy Ctr.
   67 Westview

BELTLINE BUS OPERATING STATISTICS:

B1 ALTERNATIVE

Route	Route Name	Route Pattern	Dir Code	Service Frequency AM	Mid	PM	Eve	Late	Total Trips	Rte. Dist./Time Miles	Min.	Average Weekday Peak Buses	Total Rev Hrs	Total Rev Mi's
4	McDonough/Grady Hosp.	via Clark (McDonough) Sta.	2	22	22	22	30	0	101	7.32	39	4.0	73.7	736.1
11	English Ave.	via Garibaldi Sta.	2	25	45	25	45	0	65	7.14	39	4.0	54.0	462.9
27	Monroe Dr./Lindbergh Sta.	via Sunday pattern	2	20	40	20	40	0	77	9.50	38	5.0	63.8	726.8
32	Eastland/Bouldercrest	Bouldercrest via Conf. Sta.	2	60	34	30	34	34	69	10.03	39	3.0	51.9	693.8
		Eastland via Conf. Sta.	2	0	0	30	0	0	12	4.63	21	2.0	6.0	55.6
34	Gresham	King/Meadowview	2	23	45	23	45	45	70	9.53	42	5.0	67.1	666.8
50	Bankhead	Bankhead Apts./Hollowell Sta.	2	32	56	32	56	28	56	7.13	31	2.0	29.7	397.2
		Bowen Hms./Hollowell Sta.	2	32	56	32	56	0	51	4.06	15	2.0	27.4	208.8
51	Simpson/Atlanta Univ.	Vine City/Collier Heights	2	25	25	25	25	0	94	7.75	35	4.0	78.0	725.1
81	Venetian	Campbellton/Oakland City	2	30	30	30	60	0	70	2.88	12	1.0	17.5	201.6
97	Georgia Ave./Grant Pk.	Grant Pk. via Ormewood Sta.	2	30	40	30	60	0	61	5.03	27	2.0	30.3	304.5
98	West End/Arts Ctr.	Ashby/Arts Ctr.	2	39	39	39	0	0	48	4.70	26	2.0	31.0	224.2
107	Glenwood	King/Indian Ck.	2	20	28	20	37	0	90	12.99	44	5.0	74.7	1,164.8
	Atlantic Station Shuttle	Atlantic Station/Arts Ctr.	2	5	10	5	10	10	318	1.77	10	5.0	66.3	562.9
Total:									***862***			***46.0***	***671***	***7131***
Change from Existing:												***-4.0***	***-65***	***-550***

NOTES:

1. Deleted routes:
   - 52 Knight Pk./Kennedy Ctr.
   - 67 Westview
   - 68 Donnelly

BELTLINE BUS OPERATING STATISTICS:

B2 ALTERNATIVE

Route	Route Name	Route Pattern	Dir Code	Service Frequency AM	Mid	PM	Eve	Late	Total Trips	Rte. Dist./Time Miles	Min.	Average Weekday Peak Buses	Total Rev Hrs	Total Rev Mi's
4	McDonough/Grady Hosp.	via Clark (McDonough) Sta.	2	22	22	22	30	0	101	7.32	39	4.0	73.7	736.1
11	English Ave.	via Garibaldi Sta.	2	25	45	25	45	0	65	7.14	39	4.0	54.0	462.9
27	Monroe Dr./Lindbergh Sta.	via Sunday pattern	2	20	40	20	40	0	77	9.50	38	5.0	63.8	726.8
32	Eastland/Bouldercrest	Bouldercrest via Conf. Sta.	2	60	34	30	34	34	69	10.03	39	3.0	51.9	693.8
		Eastland via Conf. Sta.	2	0	0	30	0	0	12	4.63	21	2.0	6.0	55.6
34	Gresham	King/Meadowview	2	23	45	23	45	45	70	9.53	42	5.0	67.1	666.8
50	Bankhead	Bankhead Apts./Hollowell Sta.	2	32	56	32	56	28	56	7.13	31	2.0	29.7	397.2
		Bowen Hms./Hollowell Sta.	2	32	56	32	56	0	51	4.06	15	2.0	27.4	208.8
51	Simpson/Atlanta Univ.	Vine City/Collier Heights	2	25	25	25	25	0	94	7.75	35	4.0	78.0	725.1
81	Venetian	Campbellton/Oakland City	2	30	30	30	60	0	70	2.88	12	1.0	17.5	201.6
97	Georgia Ave./Grant Pk.	Grant Pk. via Ormewood Sta.	2	30	40	30	60	0	61	5.03	27	2.0	30.3	304.5
98	West End/Arts Ctr.	Ashby/Arts Ctr.	2	39	39	39	0	0	48	4.70	26	2.0	31.0	224.2
107	Glenwood	King/Indian Ck.	2	20	28	20	37	0	90	12.99	44	5.0	74.7	1,164.8
	Northwest Beltline Connector	Atlantic Station/Lindbergh	2	8	12	8	15	30	221	5.82	27	8.0	117.9	1,286.2
	Atlantic Station Shuttle	Atlantic Station	2	5	10	5	10	10	318	0.77	5	3.0	39.8	244.9
Total:									***862***			***52.0***	***763***	***8099***
Change from Existing:												***2.0***	***26***	***418***

NOTES:

1. Deleted routes:
   - 52 Knight Pk./Kennedy Ctr.
   - 67 Westview
   - 68 Donnelly

BELTLINE BUS OPERATING STATISTICS:

B3 ALTERNATIVE

Route	Route Name	Route Pattern	Dir Code	Service Frequency AM	Mid	PM	Eve	Late	Total Trips	Rte. Dist./Time Miles	Min.	Average Weekday Peak Buses	Total Rev Hrs	Total Rev Mi's
4	McDonough/Grady Hosp.	via Clark (McDonough) Sta.	2	22	22	22	30	0	101	7.32	39	4.0	73.7	736.1
11	English Ave.	via Garibaldi Sta.	2	25	45	25	45	0	65	7.14	39	4.0	54.0	462.9
27	Monroe Dr./Lindbergh Sta.	via Sunday pattern	2	20	40	20	40	0	77	9.50	38	5.0	63.8	726.8
32	Eastland/Bouldercrest	Bouldercrest via Conf. Sta.	2	60	34	30	34	34	69	10.03	39	3.0	51.9	693.8
		Eastland via Conf. Sta.	2	0	0	30	0	0	12	4.63	21	2.0	6.0	55.6
34	Gresham	Inman/Meadowview	2	23	45	23	45	45	70	8.62	38	4.0	53.6	603.1
50	Bankhead	Bankhead Apts./Hollowell Sta.	2	32	56	32	56	28	56	7.13	31	2.0	29.7	397.2
		Bowen Hms./Hollowell Sta.	2	32	56	32	56	0	51	4.06	15	2.0	27.4	208.8
51	Simpson/Atlanta Univ.	Vine City/Collier Heights	2	25	25	25	25	0	94	7.75	35	4.0	78.0	725.1
81	Venetian	Campbellton/Oakland City	2	30	30	30	60	0	70	2.88	12	1.0	17.5	201.6
97	Georgia Ave./Grant Pk.	Grant Pk. via Ormewood Sta.	2	30	40	30	60	0	61	5.03	27	2.0	30.3	304.5
98	West End/Arts Ctr.	Ashby/Arts Ctr.	2	39	39	39	0	0	48	4.70	26	2.0	31.0	224.2
107	Glenwood	Inman/Indian Ck.	2	20	28	20	37	0	90	12.08	41	5.0	74.7	1,083.2
	Atlantic Station Shuttle	Atlantic Station/Arts Ctr.	2	5	10	5	10	10	318	1.77	10	5.0	66.3	562.9
Total:									***862***			***45.0***	***658***	***6986***
Change from Existing:												***-5.0***	***-78***	***-696***

NOTES:

1. Deleted routes:
   - 52 Knight Pk./Kennedy Ctr.
   - 67 Westview
   - 68 Donnelly

BELTLINE BUS OPERATING STATISTICS:

B4 ALTERNATIVE

Route	Route Name	Route Pattern	Dir Code	Service Frequency AM	Mid	PM	Eve	Late	Total Trips	Rte. Dist./Time Miles	Min.	Average Weekday Peak Buses	Total Rev Hrs	Total Rev Mi's
4	McDonough/Grady Hosp.	via Clark (McDonough) Sta.	2	22	22	22	30	0	101	7.32	39	4.0	73.7	736.1
11	English Ave.	via Garibaldi Sta.	2	25	45	25	45	0	65	7.14	39	4.0	54.0	462.9
27	Monroe Dr./Lindbergh Sta.	via Sunday pattern	2	20	40	20	40	0	77	9.50	38	5.0	63.8	726.8
32	Eastland/Bouldercrest	Bouldercrest via Conf. Sta.	2	60	34	30	34	34	69	10.03	39	3.0	51.9	693.8
		Eastland via Conf. Sta.	2	0	0	30	0	0	12	4.63	21	2.0	6.0	55.6
34	Gresham	Inman/Meadowview	2	23	45	23	45	45	70	8.62	38	4.0	53.6	603.1
50	Bankhead	Bankhead Apts./Hollowell Sta.	2	32	56	32	56	28	56	7.13	31	2.0	29.7	397.2
		Bowen Hms./Hollowell Sta.	2	32	56	32	56	0	51	4.06	15	2.0	27.4	208.8
51	Simpson/Atlanta Univ.	Vine City/Collier Heights	2	25	25	25	25	0	94	7.75	35	4.0	78.0	725.1
81	Venetian	Campbellton/Oakland City	2	30	30	30	60	0	70	2.88	12	1.0	17.5	201.6
97	Georgia Ave./Grant Pk.	Grant Pk. via Ormewood Sta.	2	30	40	30	60	0	61	5.03	27	2.0	30.3	304.5
98	West End/Arts Ctr.	Ashby/Arts Ctr.	2	39	39	39	0	0	48	4.70	26	2.0	31.0	224.2
107	Glenwood	Inman/Indian Ck.	2	20	28	20	37	0	90	12.08	41	5.0	74.7	1,083.2
	Northwest Beltline Connector	Atlantic Station/Lindbergh	2	8	12	8	15	30	221	5.82	27	8.0	117.9	1,286.2
	Atlantic Station Shuttle	Atlantic Station	2	5	10	5	10	10	318	0.77	5	3.0	39.8	244.9
Total:									***862***			***51.0***	***749***	***7954***
Change from Existing:												***1.0***	***13***	***273***

NOTES:

1. Deleted routes:
   - 52 Knight Pk./Kennedy Ctr.
   - 67 Westview
   - 68 Donnelly

APPENDIX B
FEEDER BUS ROUTE
CONNECTIONS TO BELTLINE STATIONS

MARTA BeltLine Alternatives Analysis

Feeder Bus Routes Connecting at Stations

Most routes do not require rerouting, just a walk link to the station; routing changes are shown in italics.

Alternative B1

Station	Route	Via / *Changes*
Lindbergh Center MARTA		
	existing routes 5, 6, 27,30, 33, 38, 39, 44, 245	
Armour		
	none	
Montgomery Ferry		
	none	
Ansley Mall (Piedmont Ave.)		
	27 Monroe Drive	*Monroe via Sunday pattern*
	36 North Decatur	Piedmont
Piedmont Park		
	none	
Virginia/Monroe		
	45 Virginia/Frederica	8th, Monroe, Virginia
Ponce de Leon		
	2 Ponce de Leon	Ponce de Leon
Copenhill (McGill)		
	16 Noble	McGill
Highland		
	none	
Irwin		
	3 Auburn Ave.	Auburn Ave
Edgewood/DeKalb		
	17 Inman Park/Lakewood	Edgewood
King Memorial MARTA		
	existing routes 18, 32, 99	
	34 Gresham	*reroute to King Memorial via Wylie, Krog and Decatur*
	107 Glenwood	*reroute to King Memorial via Wylie, Krog and Decatur*
Memorial/Boulevard		
	18 South Decatur	
	21 Memorial Drive	
I-20/Glenwood-Memorial Conn.		
	21 Memorial	Glenwood-Mem. Conn. - N
	I-20 BRT routes 106 and 110	
Glenwood Ave.		
	9 Toney Valley	Boulevard - E; I-20 - W
Ormewood		
		reroute: Blvd., Hamilton, Edie, Confederate, Underwood,
	97 Georgia Ave/Atlanta Ave	*Delaware, Woodland, Ormewood*
Confederate		
		reroute via Confederate vs. Ormewood-Underwood
	32 Eastland/Bouldercrest	
Boulevard		
	97 Georgia Ave/Atlanta Ave	via Cherokee/Atlanta and Blvd.
Hill St.		
	49 McDonough	via Aaron, Atlanta and Hill
Clark (McDonough Blvd.)		
	4 McDonough/Grady Hosp	*reroute via McDonough, Ridge*
	55 Orchard Knob	
	17 Inman Park/Lakewood	

Station	Route	Via / *Changes*
Pryor St.		
	42 Pryor Street/Village of Carver	Pryor
Garibaldi		
	11 English Ave.	*extend to sta. via University, Garibaldi*
Metropolitan		
	95 Hapeville/Metropolitan Pkwy.	Metropolitan
Adair		
	none	
West End MARTA		
	existing routes 71, 93, 95	
Rose Circle		
	none	
Brown (Lawton St.)		
	none	
Abernathy		
	71 Cascade	Cascade, Abernathy
Westview/Langhorn		
	13 Fair Street	Westview
MLK Jr. Dr.		
	3 Auburn Ave/MLK	MLK
	53 Grove Park	MLK
Ashby MARTA		
	existing routes 3, 52, 53 and 98	
Simpson		
	51 Simpson	Simpson
Hollowell (Bankhead)		
	50 Bankhead	*extend from Bankhead MARTA Sta.*
	11 English Ave	Hollowell
Jefferson/Lowery		
	none	
W. Marietta/Lowery		
	none	
Blandtown (Huff Rd.)		
	1 Coronet Way	Huff
	BRT 3 Cumberland	Marietta Blvd, Huff, Bishop, 17th
Howell Mill		
	12 Howell Mill	Howell Mill
Northside		
	37 Loring Hts.	Bellemeade, Northside, Deering
	GR 486	I-75, Northside, 17th
Collier		
	none	
Peachtree (Piedmont Hosp.)		
	23 Lenox/Arts Center	Peachtree Rd.

MARTA BeltLine Alternatives Analysis

Feeder Bus Routes Connecting at Stations

Most routes do not require rerouting, just a walk link to the station; routing changes are shown in italics.

Alternative B2

Station	Route	Via / *Changes*
Lindbergh Center MARTA		
	existing routes 5, 6, 27,30, 33, 38, 39, 44, 245	
Armour		
	none	
Montgomery Ferry		
	none	
Ansley Mall (Piedmont Ave.)		
	27 Monroe Drive	*Monroe via Sunday pattern*
	36 North Decatur	Piedmont
Piedmont Park		
	none	
Virginia/Monroe		
	45 Virginia/Frederica	8th, Monroe, Virginia
Ponce de Leon		
	2 Ponce de Leon	Ponce de Leon
Copenhill (McGill)		
	16 Noble	McGill
Highland		
	none	
Irwin		
	3 Auburn Ave.	Auburn Ave
Edgewood/DeKalb		
	17 Inman Park/Lakewood	Edgewood
King Memorial MARTA		
	existing routes 18, 32, 99	
	34 Gresham	*reroute to King Memorial via Wylie, Krog and Decatur*
	107 Glenwood	*reroute to King Memorial via Wylie, Krog and Decatur*
Memorial/Boulevard		
	18 South Decatur	
	21 Memorial Drive	
I-20/Glenwood-Memorial Conn.		
	21 Memorial	Glenwood-Mem. Conn. - N
	I-20 BRT routes 106 and 110	
Glenwood Ave.		
	9 Toney Valley	Boulevard - E; I-20 - W
Ormewood		
		reroute: Blvd., Hamilton, Edie, Confederate, Underwood,
	97 Georgia Ave/Atlanta Ave	*Delaware, Woodland, Ormewood*
Confederate		
		reroute via Confederate vs. Ormewood-Underwood
	32 Eastland/Bouldercrest	
Boulevard		
	97 Georgia Ave/Atlanta Ave	via Cherokee/Atlanta and Blvd.
Hill St.		
	49 McDonough	via Aaron, Atlanta and Hill
Clark (McDonough Blvd.)		
	4 McDonough/Grady Hosp	*reroute via McDonough, Ridge*
	55 Orchard Knob	
	17 Inman Park/Lakewood	
Pryor St.		
	42 Pryor Street/Village of Carver	Pryor

Station	Route	Via / *Changes*
Garibaldi		
	11 English Ave.	*extend to sta. via University, Garibaldi*
Metropolitan		
	95 Hapeville/Metropolitan Pkwy.	Metropolitan
Adair		
	none	
West End MARTA		
	existing routes 71, 93, 95	
Rose Circle		
	none	
Brown (Lawton St.)		
	none	
Abernathy		
	71 Cascade	Cascade, Abernathy
Westview/Langhorn		
	13 Fair Street	Westview
MLK Jr. Dr.		
	3 Auburn Ave/MLK	MLK
	53 Grove Park	MLK
Ashby MARTA		
	existing routes 3, 52, 53 and 98	
Simpson		
	51 Simpson	Simpson
Hollowell (Bankhead)		
	50 Bankhead	*extend from Bankhead MARTA Sta.*
	11 English Ave	Hollowell
Jefferson/Lowery		
	none	
10th/Howell Mill		
	1 Coronet Way	Howell Mill
	12 Howell Mill	10th
14th/Howell Mill		
	1 Coronet Way	Howell Mill
	12 Howell Mill	10th
Atlantic Sta. Village/Commons		
		Eliminate Atlantic Station Shuttle
	Atlantic Station Shuttle	*connection to Arts Center*
		Marietta Blvd., Huff, Bishop, 17th,
	BRT 3 Cumberland	Spring/W. P'Tree
	GR 486	I-75, Northside, 17th, Spring/W. P'Tree
	10 Peachtree	17th, Village St., 16th, Northside, Bishop
Atlantic Sta. District		
		Eliminate Atlantic Station Shuttle
	Atlantic Station Shuttle	*connection to Arts Center*
		Marietta Blvd., Huff, Bishop, 17th,
	BRT 3 Cumberland	Spring/W. P'Tree
	GR 486	I-75, Northside, 17th, Spring/W. P'Tree
	10 Peachtree	17th, Village St., 16th, Northside, Bishop
Arts Center MARTA		
	Existing routes 10, 23, 27, 36 and 98	
		Marietta Blvd., Huff, Bishop, 17th,
	BRT 3 Cumberland	Spring/W. P'Tree
	GR 486	I-75, Northside, 17th, Spring/W. P'Tree

MARTA BeltLine Alternatives Analysis

Feeder Bus Routes Connecting at Stations

Most routes do not require rerouting, just a walk link to the station; routing changes are shown in italics.

Station	Route	Via / *Changes*
Lindbergh Center MARTA		
	existing routes 5, 6, 27,30, 33, 38, 39, 44, 245	
Armour		
	none	
Montgomery Ferry		
	none	
Ansley Mall (Piedmont Ave.)		
	27 Monroe Drive	*Monroe via Sunday pattern*
	36 North Decatur	Piedmont
Piedmont Park		
	none	
Virginia/Monroe		
	45 Virginia/Frederica	8th, Monroe, Virginia
Ponce de Leon		
	2 Ponce de Leon	Ponce de Leon
Copenhill (McGill)		
	16 Noble	McGill
Highland		
	none	
Irwin		
	3 Auburn Ave.	Auburn Ave
Edgewood/DeKalb		
	17 Inman Park/Lakewood	Edgewood
Inman Park MARTA		
	Existing Routes 17, 48	
	34 Gresham	
	107 Glenwood	
Moreland/Hardee		
	28 East Village Lake	
Kirkwood Ave.		
	18 South Decatur	Wylie, Flat Shoals, Fulton Terr.
I-20/Glenwood-Memorial Conn.		
	21 Memorial	Glenwood-Mem. Conn. - N
	I-20 BRT routes 106 and 110	
Glenwood Ave.		
	9 Toney Valley	Boulevard - E; I-20 - W
Ormewood		
		reroute: Blvd., Hamilton, Edie, Confederate, Underwood,
	97 Georgia Ave/Atlanta Ave	*Delaware, Woodland, Ormewood*
Confederate		
	32 Eastland/Bouldercrest	*reroute via Confederate vs. Ormewood-Underwood*
Boulevard		
	97 Georgia Ave/Atlanta Ave	via Cherokee/Atlanta and Blvd.
Hill St.		
	49 McDonough	via Aaron, Atlanta and Hill
Clark (McDonough Blvd.)		
	4 McDonough/Grady Hosp	*reroute via McDonough, Ridge*
	55 Orchard Knob	
	17 Inman Park/Lakewood	

Alternative B3

Station	Route	Via / *Changes*
Pryor St.		
	42 Pryor Street/Village of Carver	Pryor
Garibaldi		
	11 English Ave.	*extend to sta. via University, Garibaldi*
Metropolitan		
	95 Hapeville/Metropolitan Pkwy.	Metropolitan
Adair		
	none	
West End MARTA		
	existing routes 71, 93, 95	
Rose Circle		
	none	
Brown (Lawton St.)		
	none	
Abernathy		
	71 Cascade	Cascade, Abernathy
Westview/Langhorn		
	13 Fair Street	Westview
MLK Jr. Dr.		
	3 Auburn Ave/MLK	MLK
	53 Grove Park	MLK
Ashby MARTA		
	existing routes 3, 52, 53 and 98	
Simpson		
	51 Simpson	Simpson
Hollowell (Bankhead)		
	50 Bankhead	*extend from Bankhead MARTA Sta.*
	11 English Ave	Hollowell
Jefferson/Lowery		
	none	
W. Marietta/Lowery		
	none	
Blandtown (Huff Rd.)		
	1 Coronet Way	Huff
	BRT 3 Cumberland	Marietta Blvd, Huff, Bishop, 17th
Howell Mill		
	12 Howell Mill	Howell Mill
Northside		
	37 Loring Hts.	Bellemeade, Northside, Deering
	GR 486	I-75, Northside, 17th
Collier		
	none	
Peachtree (Piedmont Hosp.)		
	23 Lenox/Arts Center	Peachtree Rd.

MARTA BeltLine Alternatives Analysis

Feeder Bus Routes Connecting at Stations

Most routes do not require rerouting, just a walk link to the station; routing changes are shown in italics.

Station	Route	Via / *Changes*
Lindbergh Center MARTA	existing routes 5, 6, 27,30, 33, 38, 39, 44, 245	
Armour	none	
Montgomery Ferry	none	
Ansley Mall (Piedmont Ave.)	27 Monroe Drive	*Monroe via Sunday pattern*
	36 North Decatur	Piedmont
Piedmont Park	none	
Virginia/Monroe	45 Virginia/Frederica	8th, Monroe, Virginia
Ponce de Leon	2 Ponce de Leon	Ponce de Leon
Copenhill (McGill)	16 Noble	McGill
Highland	none	
Irwin	3 Auburn Ave.	Auburn Ave
Edgewood/DeKalb	17 Inman Park/Lakewood	Edgewood
Inman Park MARTA	Existing Routes 17, 48	
	34 Gresham	
	107 Glenwood	
Moreland/Hardee	28 East Village Lake	
Kirkwood Ave.	18 South Decatur	Wylie, Flat Shoals, Fulton Terr.
I-20/Glenwood-Memorial Conn.	21 Memorial	Glenwood-Mem. Conn. - N
	I-20 BRT routes 106 and 110	
Glenwood Ave.	9 Toney Valley	Boulevard - E; I-20 - W
Ormewood	97 Georgia Ave/Atlanta Ave	*reroute: Blvd., Hamilton, Edie, Confederate, Underwood, Delaware, Woodland, Ormewood*
Confederate	32 Eastland/Bouldercrest	*reroute via Confederate vs. Ormewood-Underwood*
Boulevard	97 Georgia Ave/Atlanta Ave	via Cherokee/Atlanta and Blvd.
Hill St.	49 McDonough	via Aaron, Atlanta and Hill
Clark (McDonough Blvd.)	4 McDonough/Grady Hosp	*reroute via McDonough, Ridge*
	55 Orchard Knob	
	17 Inman Park/Lakewood	

Alternative B4

Station	Route	Via / *Changes*
Pryor St.	42 Pryor Street/Village of Carver	Pryor
Garibaldi	11 English Ave.	*extend to sta. via University, Garibaldi*
Metropolitan	95 Hapeville/Metropolitan Pkwy.	Metropolitan
Adair	none	
West End MARTA	existing routes 71, 93, 95	
Rose Circle	none	
Brown (Lawton St.)	none	
Abernathy	71 Cascade	Cascade, Abernathy
Westview/Langhorn	13 Fair Street	Westview
MLK Jr. Dr.	3 Auburn Ave/MLK	MLK
	53 Grove Park	MLK
Ashby MARTA	existing routes 3, 52, 53 and 98	
Simpson	51 Simpson	Simpson
Hollowell (Bankhead)	50 Bankhead	*extend from Bankhead MARTA Sta.*
	11 English Ave	Hollowell
Jefferson/Lowery	none	
10th/Howell Mill	1 Coronet Way	Howell Mill
	12 Howell Mill	10th
14th/Howell Mill	1 Coronet Way	Howell Mill
	12 Howell Mill	10th
Atlantic Sta. Village/Commons	Atlantic Station Shuttle	*Eliminate Atlantic Station Shuttle connection to Arts Center*
	BRT 3 Cumberland	Marietta Blvd., Huff, Bishop, 17th, Spring/W. P'Tree
	GR 486	I-75, Northside, 17th, Spring/W. P'Tree
	10 Peachtree	17th, Village St., 16th, Northside, Bishop
Atlantic Sta. District	Atlantic Station Shuttle	*Eliminate Atlantic Station Shuttle connection to Arts Center*
	BRT 3 Cumberland	Marietta Blvd., Huff, Bishop, 17th, Spring/W. P'Tree
	GR 486	I-75, Northside, 17th, Spring/W. P'Tree
	10 Peachtree	17th, Village St., 16th, Northside, Bishop
Arts Center MARTA	Existing routes 10, 23, 27, 36 and 98	
	BRT 3 Cumberland	Marietta Blvd., Huff, Bishop, 17th, Spring/W. P'Tree
	GR 486	I-75, Northside, 17th, Spring/W. P'Tree

APPENDIX C
BUILD ALTERNATIVES CONCEPT DESIGN SHEETS

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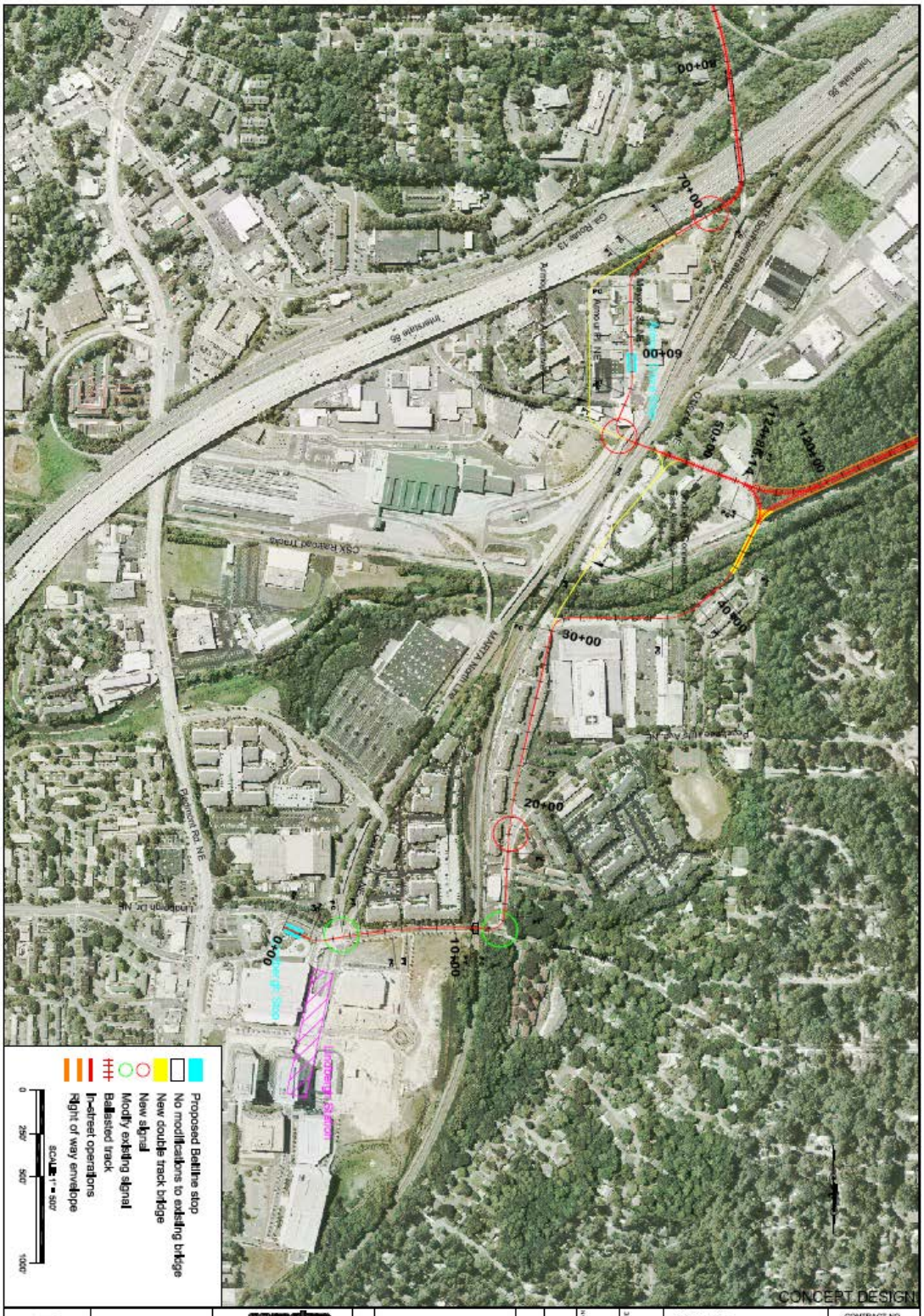

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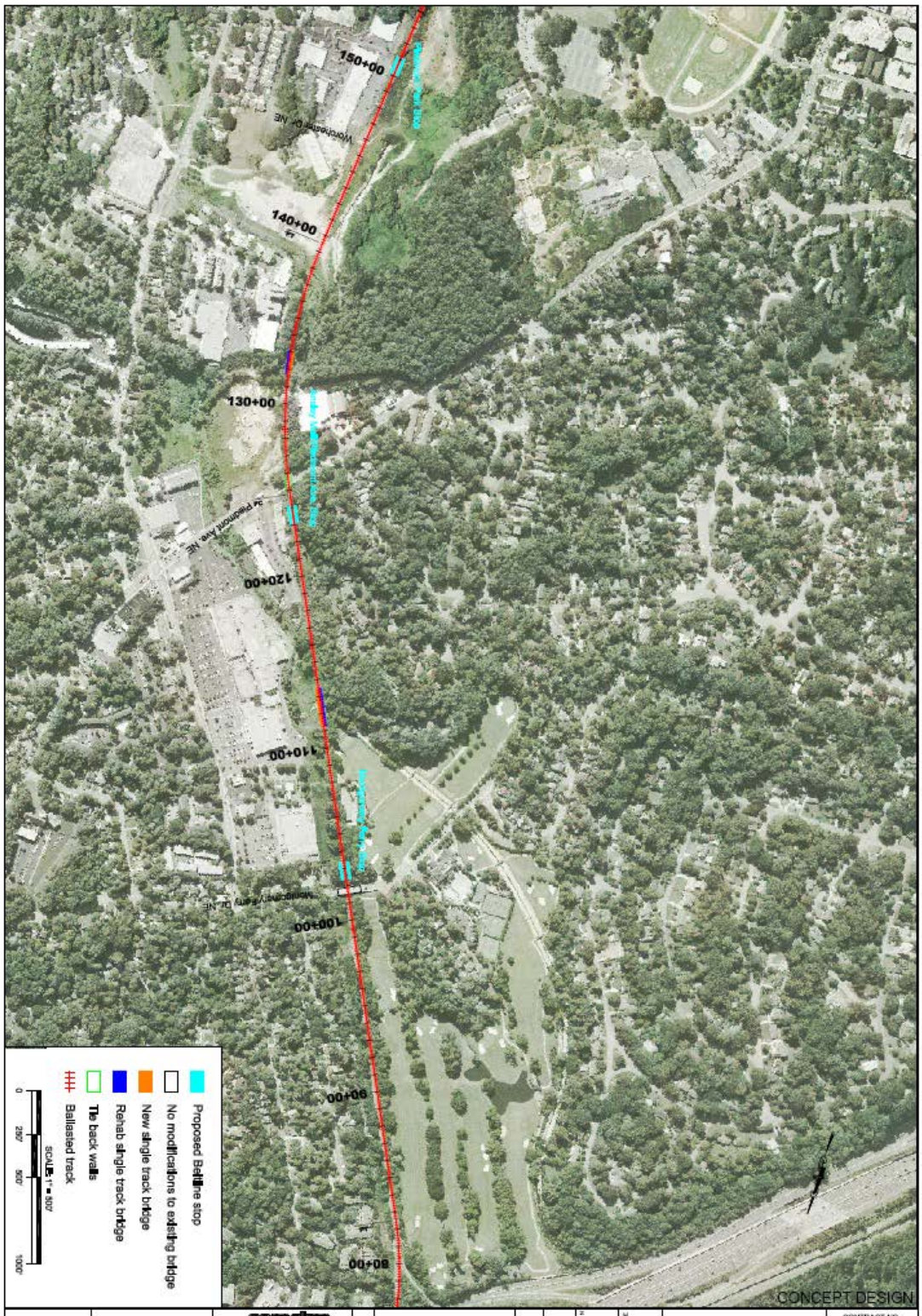

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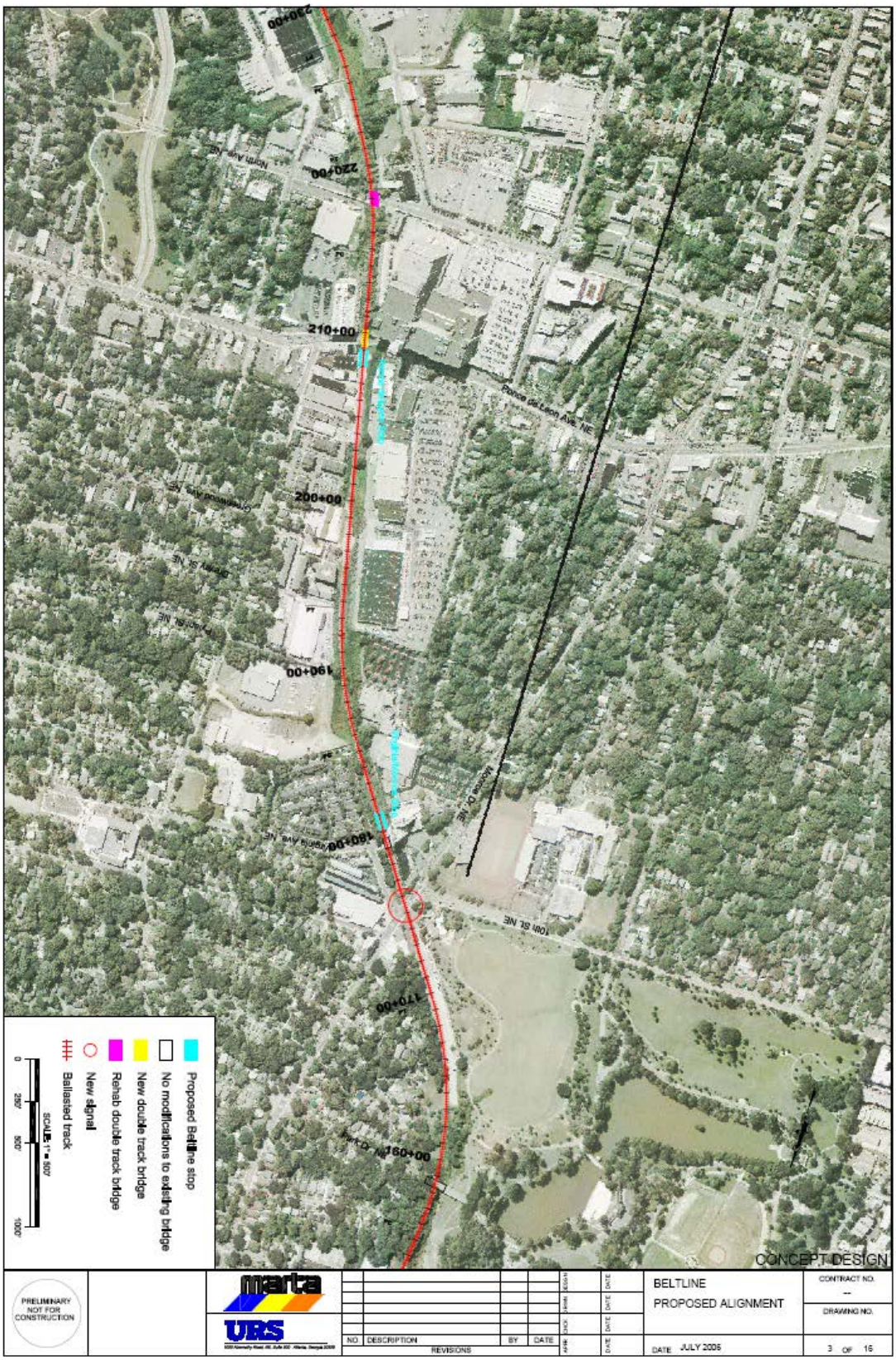
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Police Station Ave NE
Monroe Dr NE
10th St NE
North Ave NE
Piedmont Ave NE
Spring St NE
Proposed Beltline stop
No modifications to existing bridge
New double track bridge
Rehab double track bridge
New signal
Ballasted track
SCALE 1" = 500'
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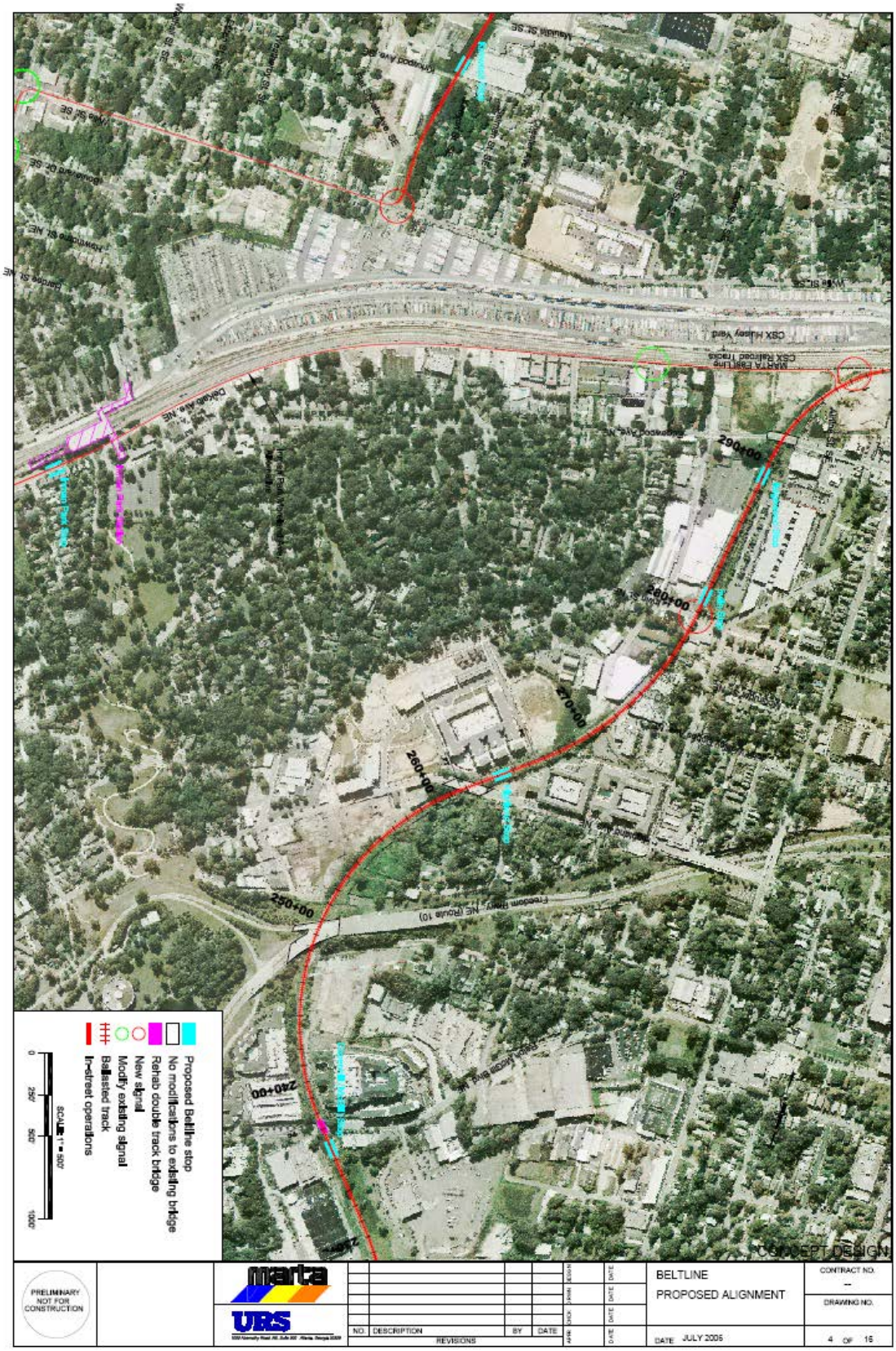
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Rehab double track bridge
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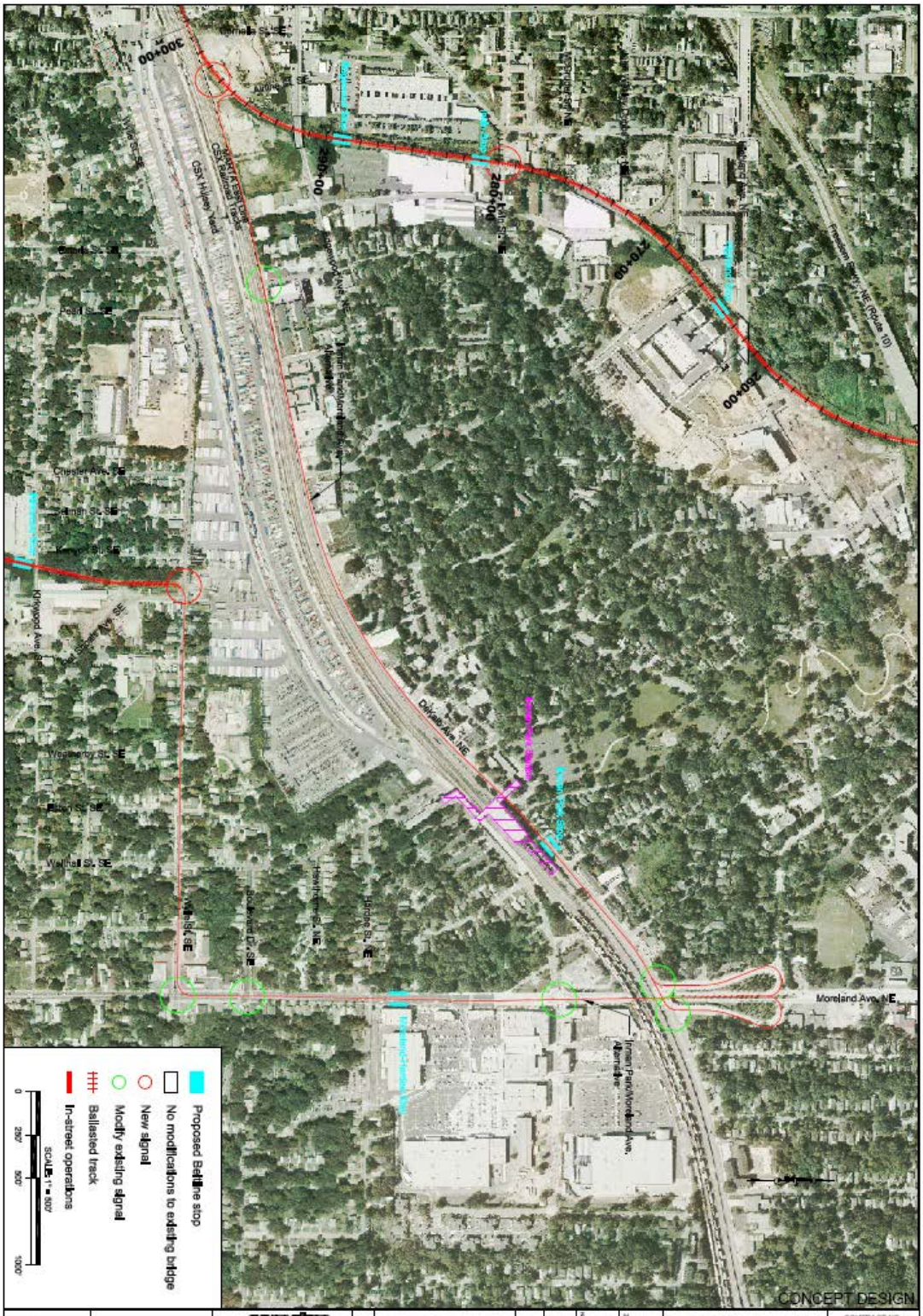

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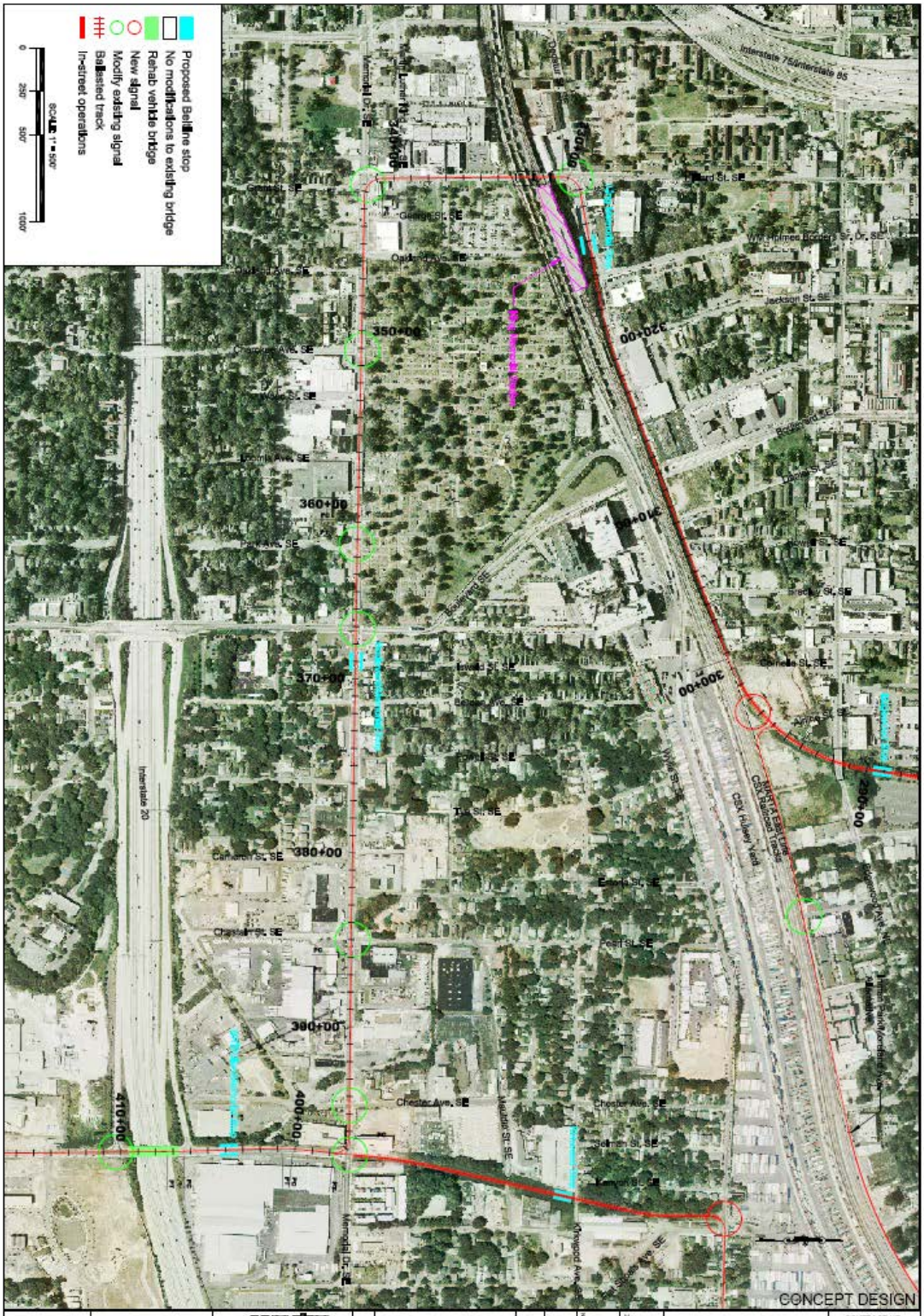

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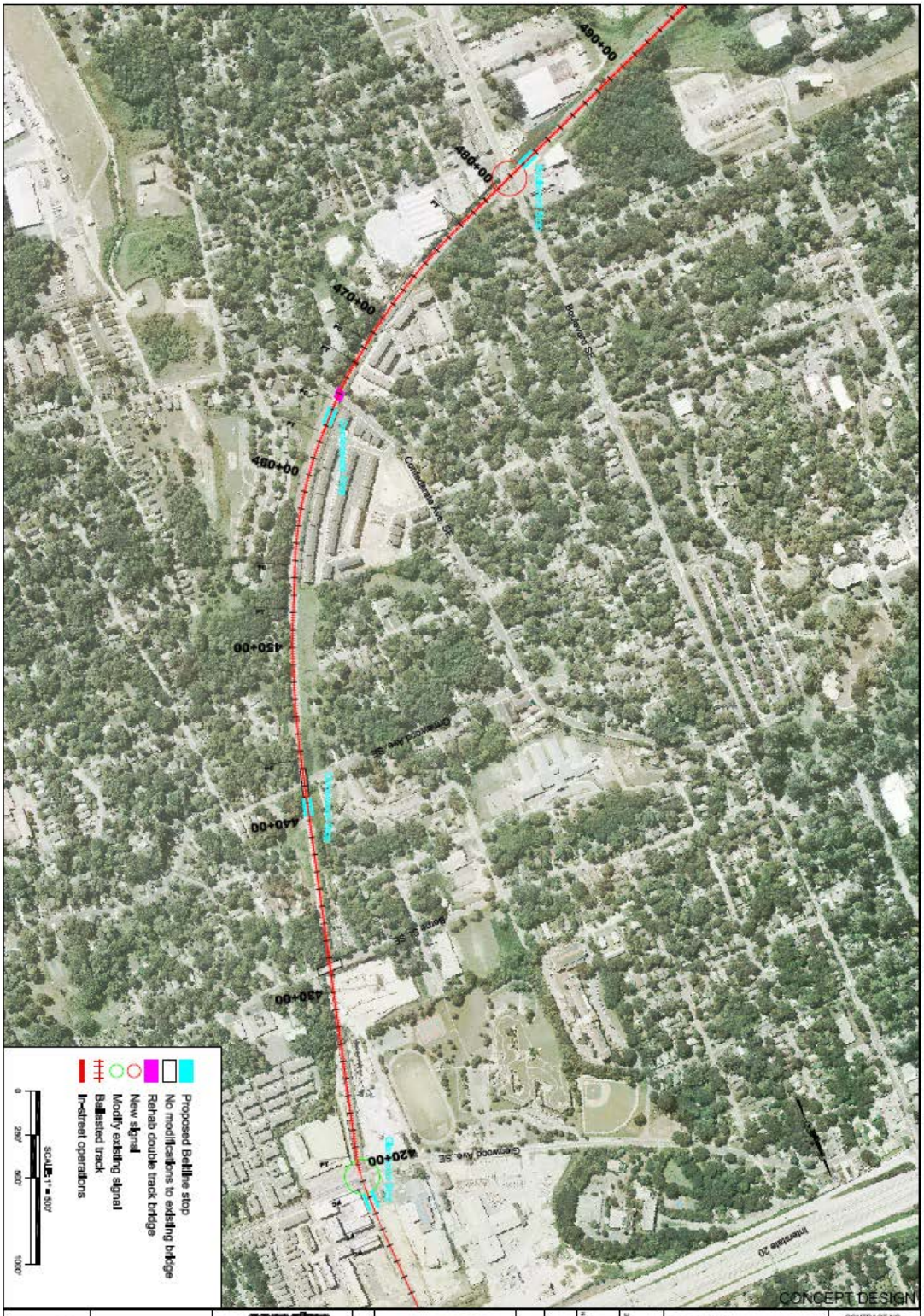

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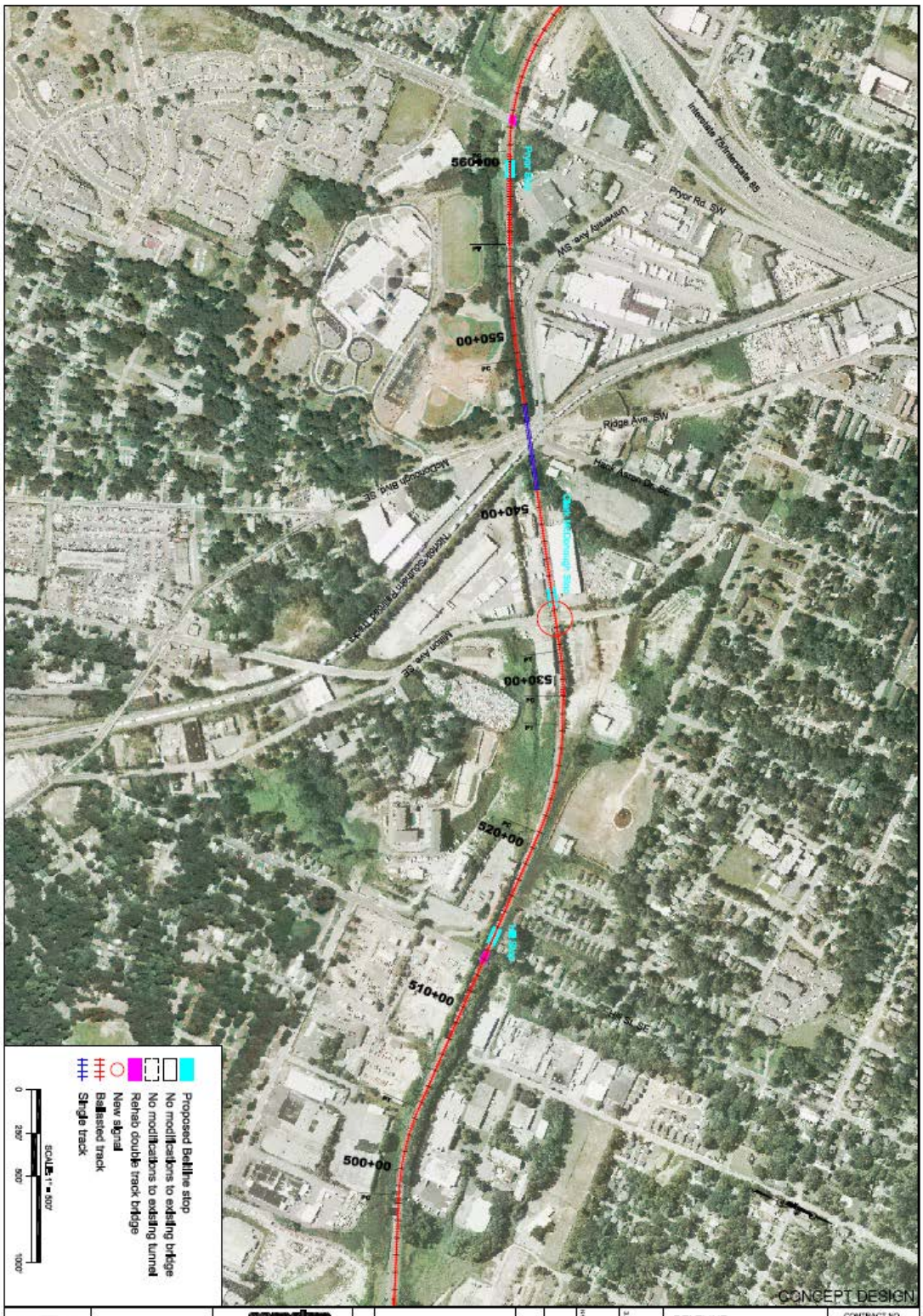

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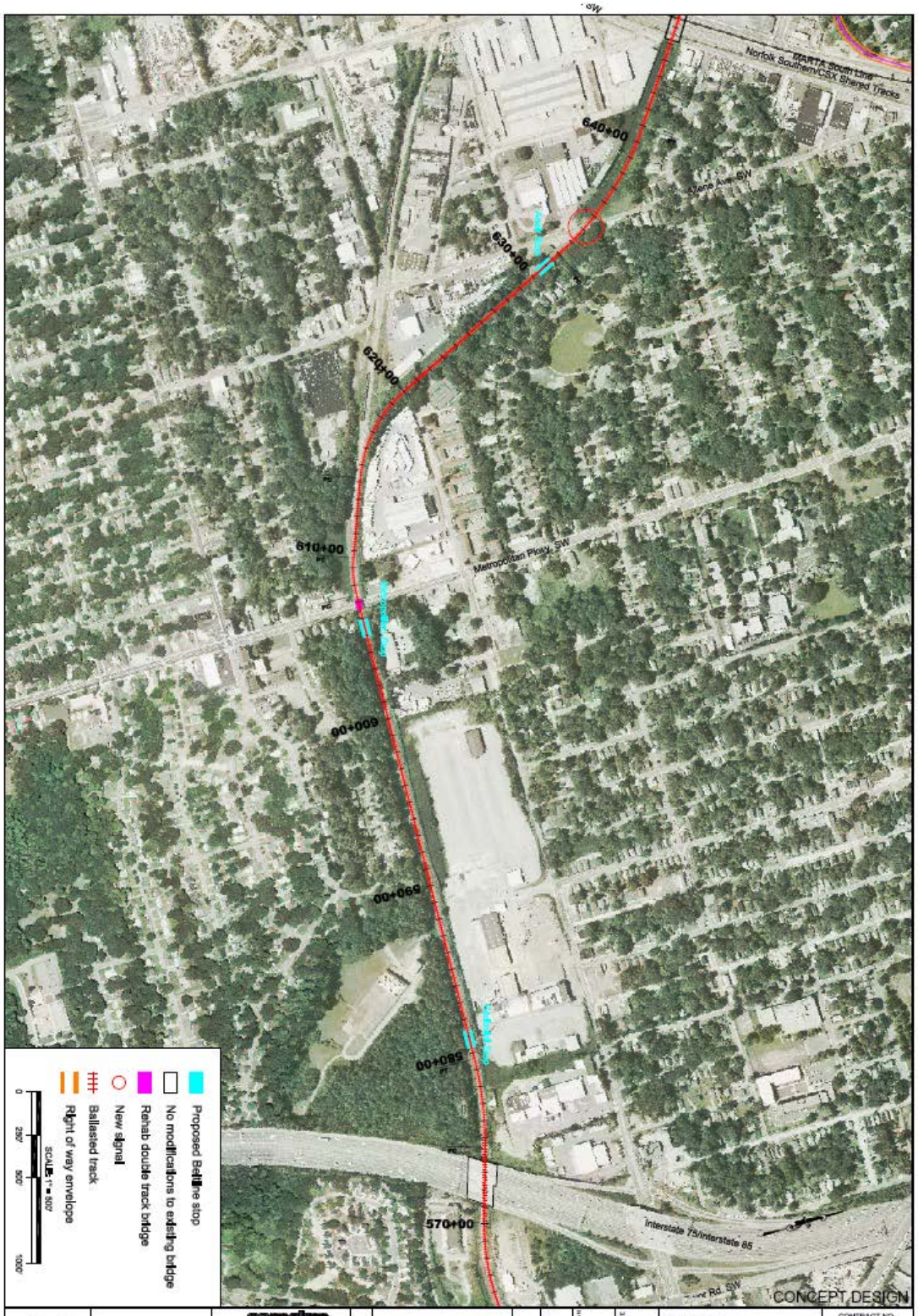

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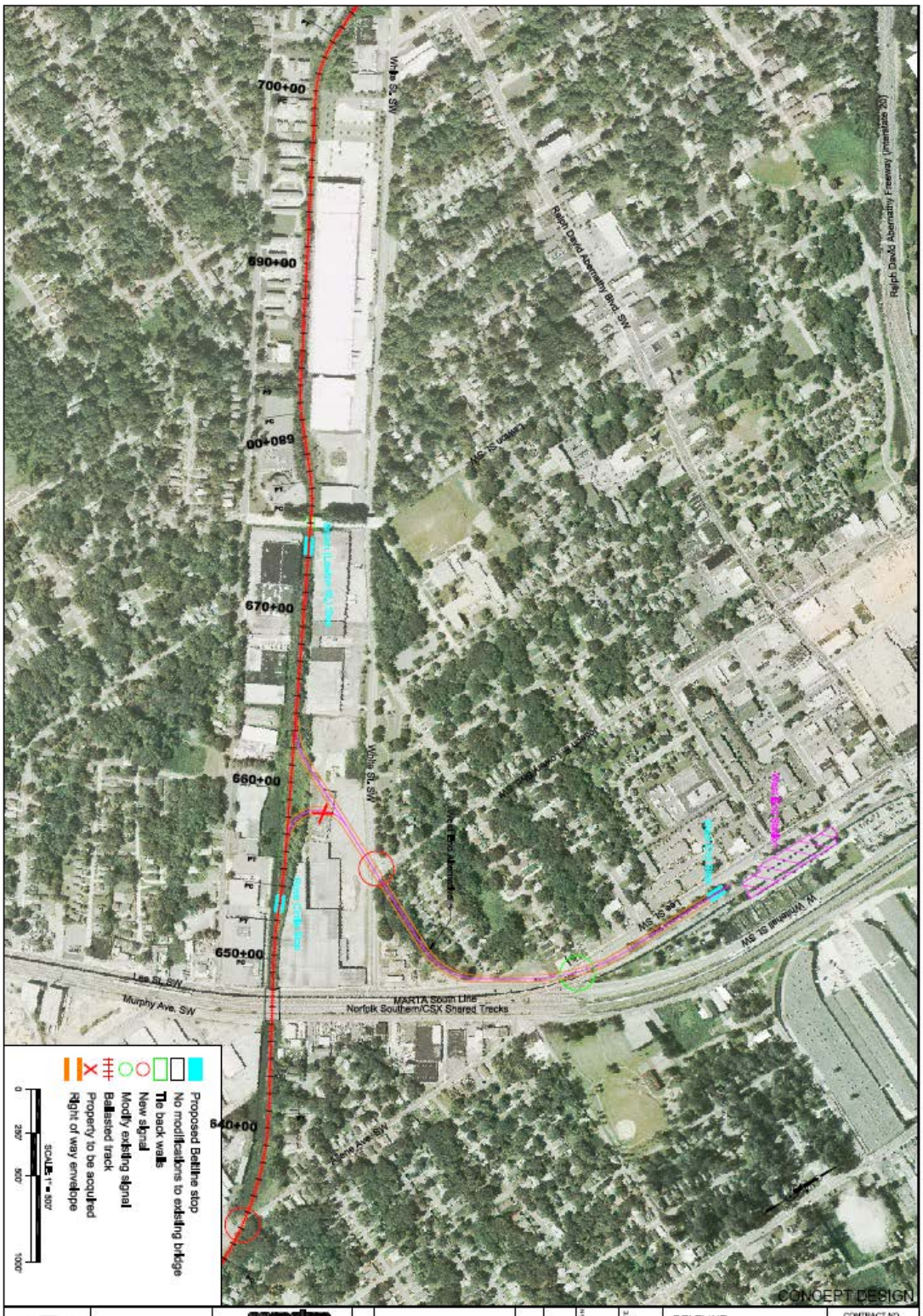

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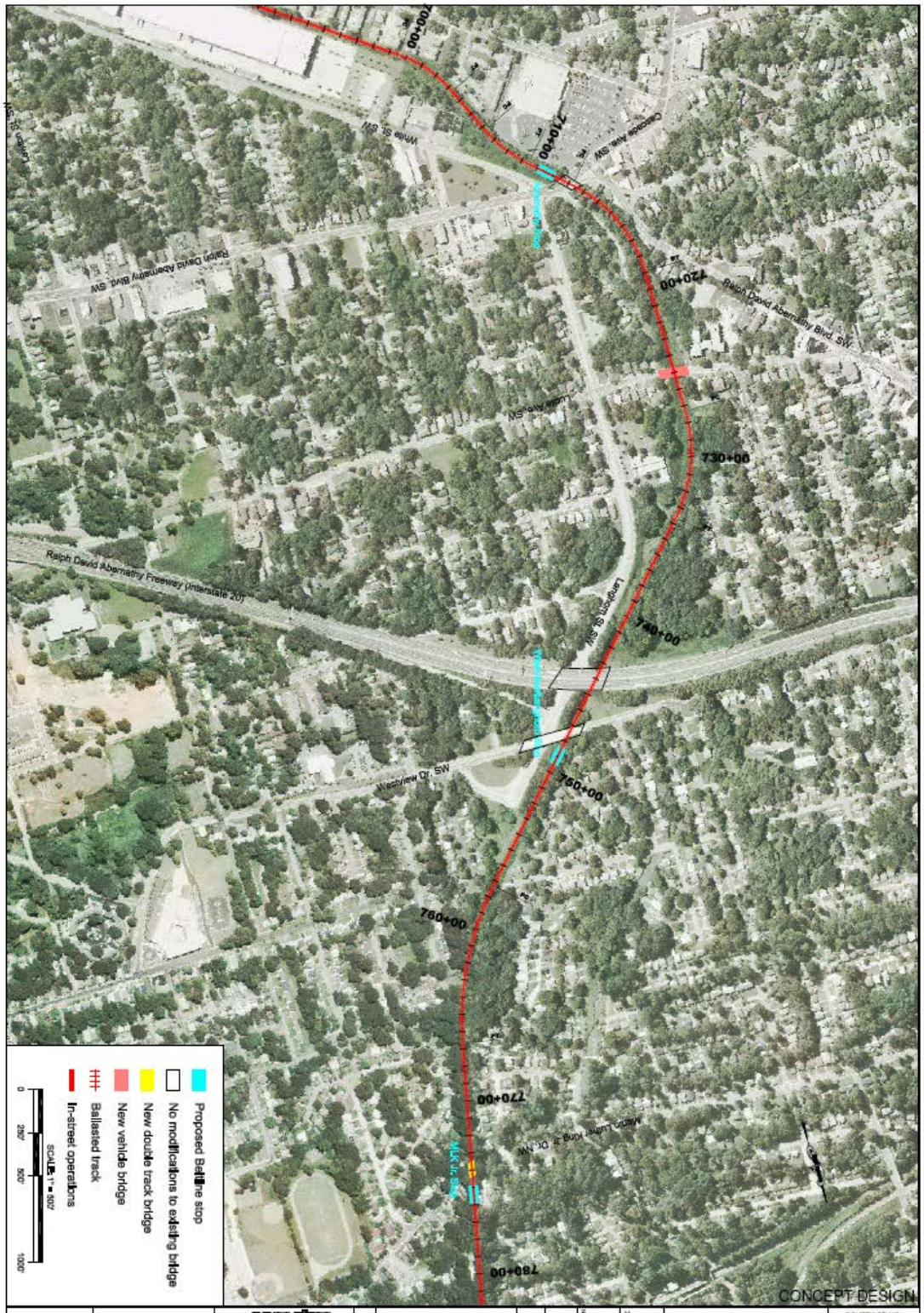

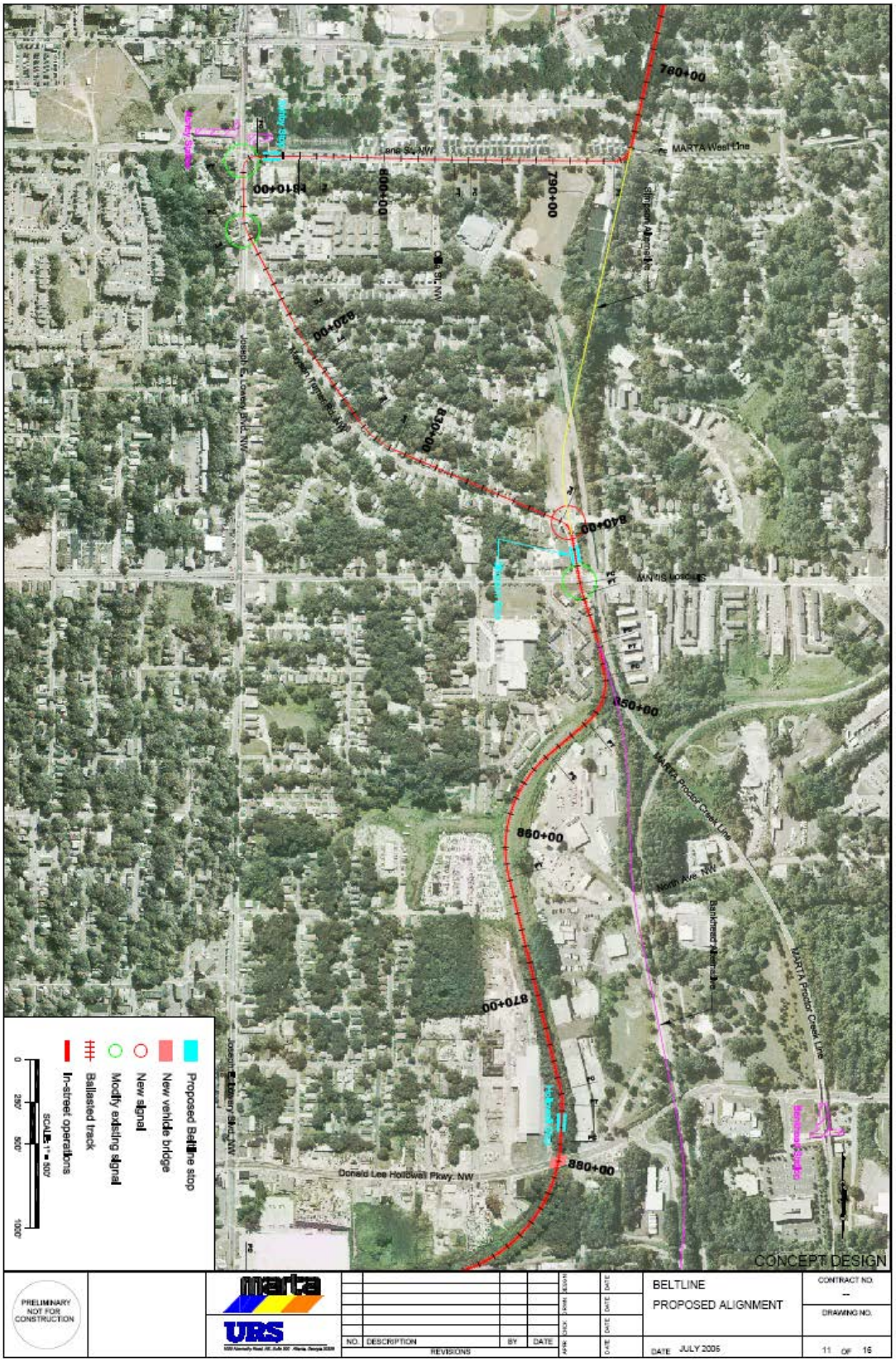

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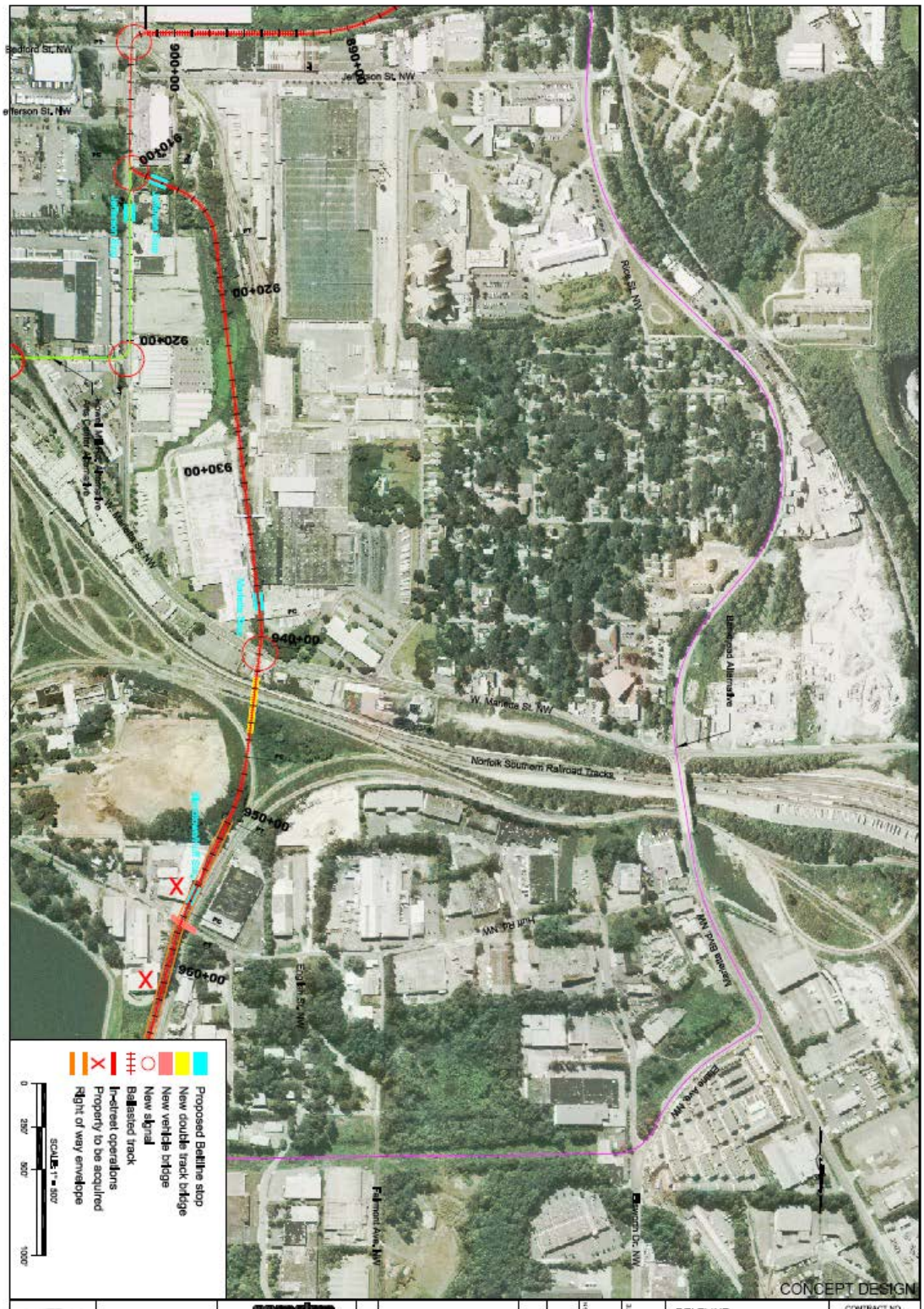

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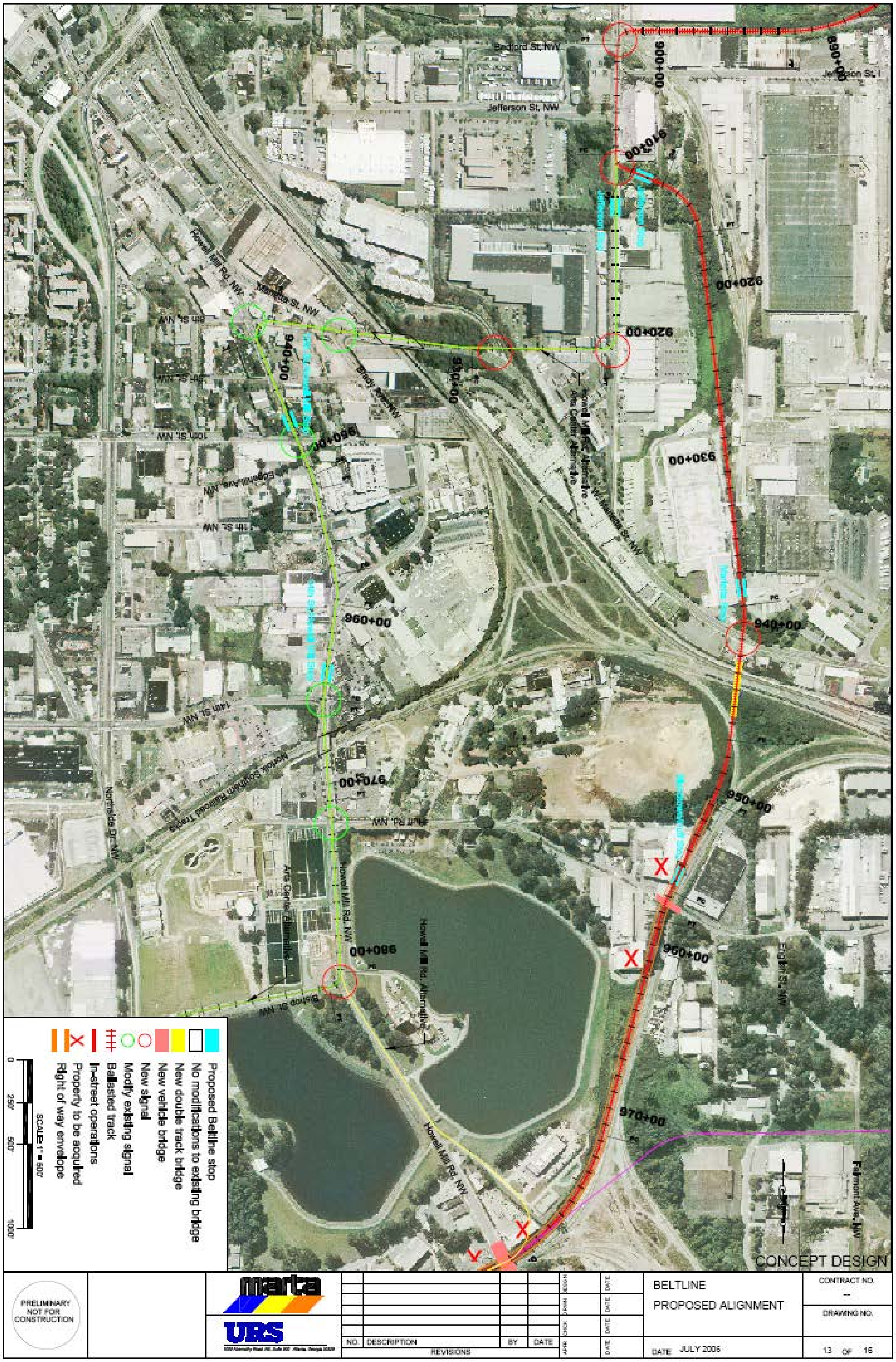

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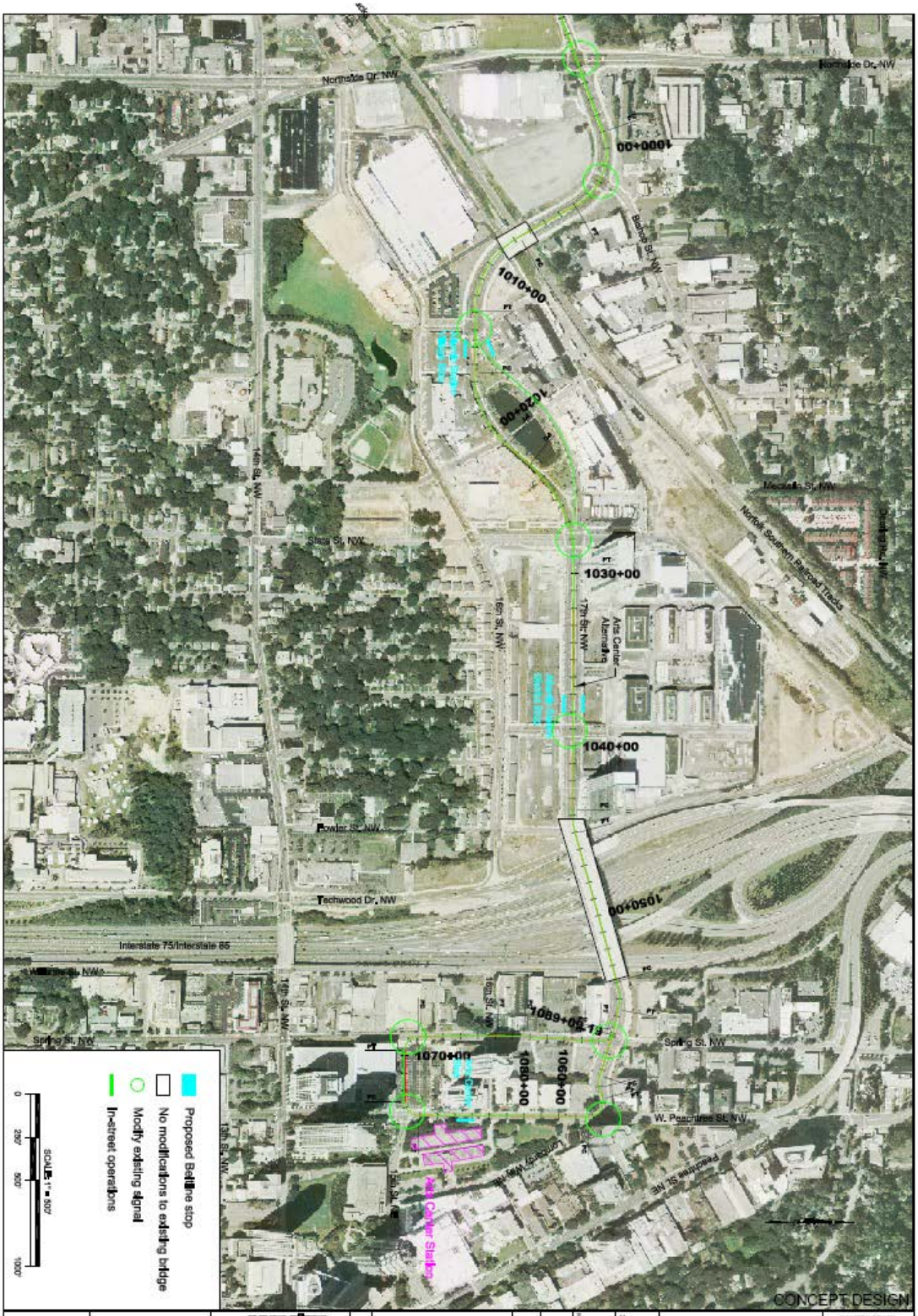

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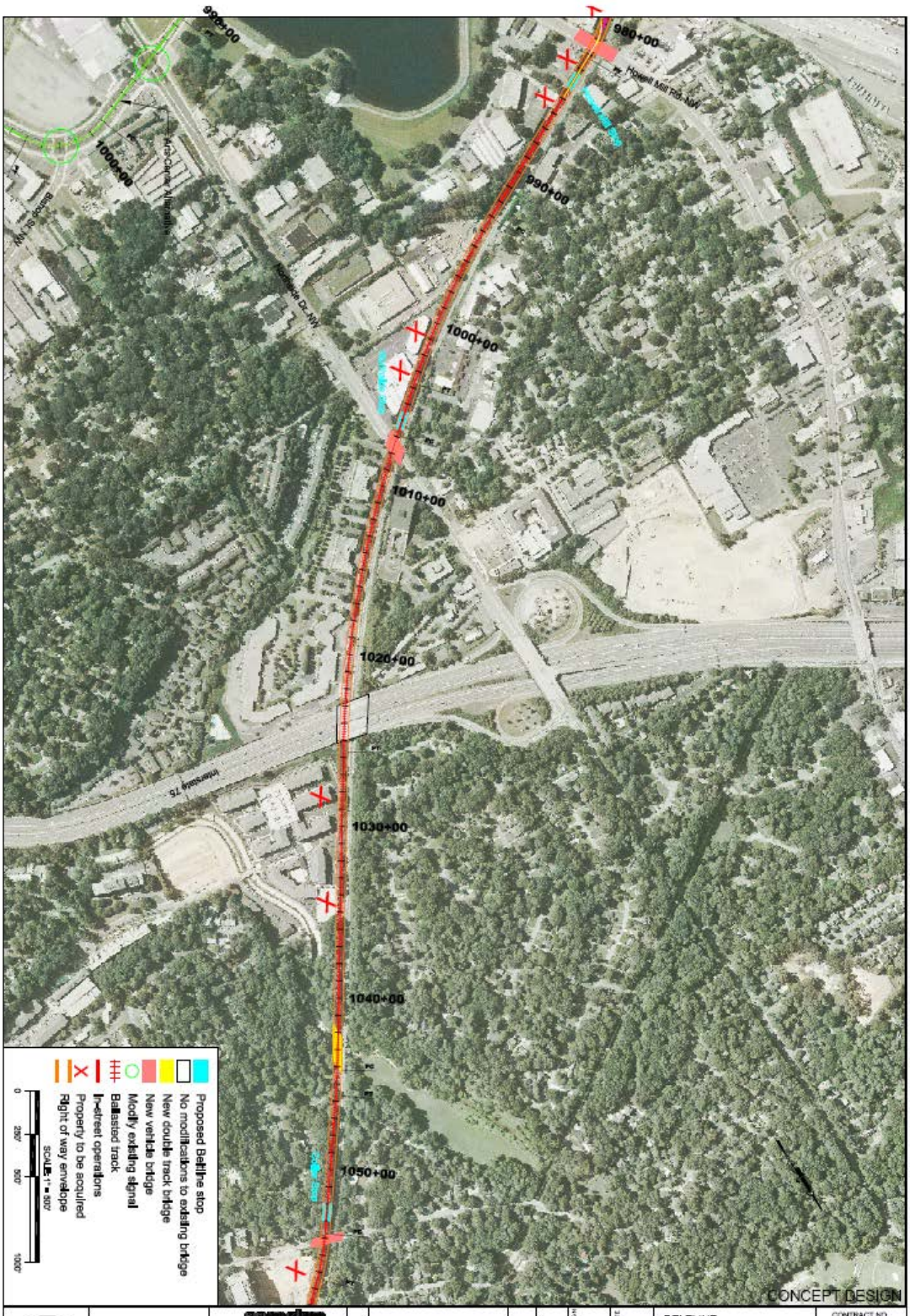
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Marietta St NW
Northside Dr NW
Interstate 75
Proposed Beltline stop
No modifications to existing bridge
New double track bridge
New vehicle bridge
Modify existing signal
Ballasted track
In-street operations
Property to be acquired
Right of way envelope
SCALE: 1" = 500'
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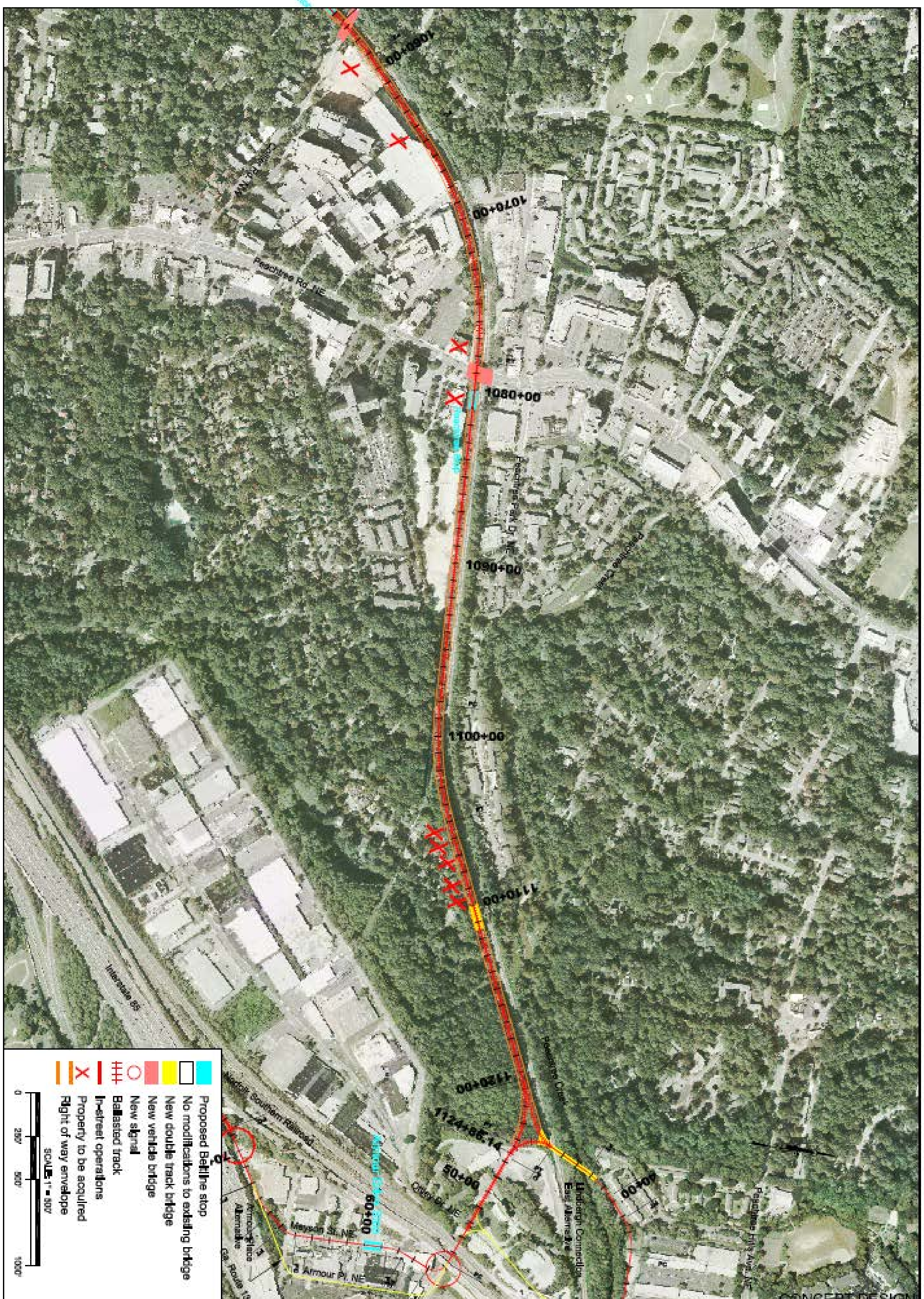

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APPENDIX D
PUBLIC INVOLVEMENT DETAILS

Stakeholder Interview Summary Report
September 2005

In order to gain a better understanding of the views towards transit and transportation improvement issues within the corridor, face-to-face interviews with key community partners were conducted. The interviews will allow the Public Involvement Team (PI Team) to better understand the specific attitudes, perception, concerns and understanding of transit and transportation issues within the corridor.

There have been 16 interviews to gain information about the Inner Core Corridor with citizen, political, business, civic and media representatives, including:

- Debbie McCown, Executive Director of the Piedmont Park Conservancy
- Robb Pitts, Fulton County Commissioner-Elect, At-Large Post 2
- Phil Cuthbertson, Grant Park Conservancy
- Pete Hayley, Chief Operating Officer of University Community Development Corporation
- Shannon Powell, VP of Planning and Development for Midtown Alliance
- Richard A Dent, Vice President and General Manager of The Mall West End
- Ed McBrayer, Executive Director of the PATH Foundation
- Scott Selig, Vice President of Selig Enterprises
- Brian Leary, Atlantic Station
- Laura Keenan, Senior Vice President at Bank of America
- Nancy Boxill, District 6 Commissioner, Fulton County
- Jeffrey Swanagan, Executive Director of Georgia Aquarium
- Congresswoman Cynthia McKinney 4th District, Georgia, U.S. House of Representatives
- Congressman John Lewis, District 5, Georgia, United States House of Representatives
- Bill Miller, Director of Administrative Services for the Georgia World Congress Center Authority
- Freedom Park Conservancy Board Members of Freedom Park Conservancy

Each stakeholder gave their insight and perspective on the condition of their respective area as well comments and concerns on the proposed project.

<u>Views of MARTA</u>

Several of the stakeholders agreed that changes needed to be made to sustain future growth and were advocates of the Beltline project but were not happy with the current state of MARTA as a whole. Many of the stakeholders felt that MARTA was not competent enough and too bureaucratic to aptly complete the project. Many also expressed MARTA's inability to react to the needs of the Atlanta community. Some of their comments are below:

- Unhappy with MARTA's slow response to the changing Atlanta community and its needs. MARTA was very bureaucratic and instead of bringing about change, it seems like a barrier to effective transit and land use planning.
- MARTA is not more agile, more forward thinking.
- One stakeholder felt that a different agency should spearhead the transit element, because MARTA and the federal process were so bureaucratic.

Tax Allocation District (TAD)

Commissioner Robb Pitts had concerns with the Tax Allocation District (TAD):

- Concern that a TAD would be created, and that commercial and upscale residential development would occur without the necessary transit enhancements in the area. Expressed a reluctance to support the City of Atlanta's possible TAD at the county level unless there was assurance that the transit improvements would take place.

Convenience, Reliability, Accessibility

- How the transportation connects will be important.
- Frequency of getting the people to where they want to go is important especially for folks in town because a lot of people in town would use public transportation more
- For the areas of focus for the Beltline, is it convenient and accessible for the encompassing neighborhoods. Currently, MARTA service does not go into neighborhoods enough to provide effective accessibility.
- Some of the transit stops are still not feasible when thinking of the transit's patrons, such as families. When considering transit stops that cater to Atlanta landmarks and tourist attractions, consider the convenience and accessibility (i.e. walking distance) for families with children. For example, the stop nearest to the Zoo is 4-5 blocks away, not a feasible distance for a family with children.

Focus of the Project/Service Area of the Beltline

Many of the stakeholders were concerned about the focus of the Beltline project and specific service areas. Stakeholders questioned whether or not the Beltline would focus primarily on the city of Atlanta or would it extend into other metro areas of the city. There were also concerns that there are still areas that are being neglected and should be addressed. Some of the major concerns/comments of the stakeholders are listed below:

- East-west connections are still very weak even with the proposed beltline.
- Target the city of Atlanta and don't focus on the suburban areas surrounding the city. Even with the new proposed alternatives, the transit still doesn't hit major parts of the city
- A major problem with transit use is that MARTA is restricted to DeKalb and Fulton Counties.
- Questioned the current focus on development along the Beltline, stating it was premature and that some areas of the Beltline are severely blighted. Without the transit portion in place, its doubtful development will happen there. Also those areas that are attractive to developers would be developed anyway regardless of the Beltline project.

Stakeholder Advisory Committee Meetings Summaries

Inner Core SAC Meeting Summary
August 18, 2005
4:00-6:00pm
All Saints Episcopal Church

Ms. Inga Kennedy, PEQ, called the meeting to order. She thanked everyone for coming and welcomed the new members. She explained that this was the first meeting of the SAC for the Alternatives Analysis phase of the Inner Core project. She stated that the purpose of the SAC is to serve as advisors to the project team on issues such as development and modal choices. In addition, the study team relies on those SAC participants that are members of neighborhood associations to share information with their organizations and relay concerns back to the SAC.

Ms. Kennedy informed the group that the SAC is anticipated to meet five times during the next year at key project milestones. She reminded the group that in addition to the meetings, there is always opportunity to provide comments including suggestions for SAC meeting places and times. She added that the project team will be moving around the community over the next few months with appearances at NPU meetings and Inner Core public meetings.

Ms. Kennedy introduced MARTA staff and asked the consultant team and attendees to introduce themselves. She then turned the meeting over to Mr. Johnny Dunning, Jr., MARTA project manager.

Through handouts of a Power Point presentation, Mr. Dunning reviewed the findings of the Inner Core Feasibility Study, the framework and timeline of the Alternatives Analysis, the project's Problem Statement/Purpose and Need, and the public involvement plan.

Following the presentation, Mr. Dunning invited attendees to ask questions and make comments. Below is a summary of those questions and comments with discussion from project staff noted in italics.

Question: Is there specific set of guidelines to work from in defining the purpose and need?

Answer: *Yes, the FTA employs specific criteria. Project justification and local financial commitment are two areas that the project is graded on. In addition to its own criteria, the FTA advocates the development of local goals as well.*

Question: In defining the problem, it would be helpful to have some data on how people move around. Do have such data, and can we look at it?

Answer: *Yes, we do have the data. We are currently working on the analysis, looking at baseline year 2000 trips and projecting the numbers of future trips. We can get it to you once we've completed the work.*

Question: I thought we developed an outline of the purpose and need as part of the Feasibility Study? We don't need to redo the work, do we?

Answer: *Transit projects are usually corridors. The Inner Core is an area. As a result, the purpose and need we developed in the Feasibility Study was very general. For the Alternatives Analysis and New Starts process, we need to define a problem that is more specific. The Beltline is not your typical project; it is hard to justify a loop as a solution to a transportation problem because people don't ride in a circle from an origin to a destination as you might along a corridor.*

Comment: I suggest you look at the results of the Metro Atlanta Chamber's Quality Growth Task Force Report. It calls for strategies to increase the quality of life in the City of Atlanta in order to attract people in town and help solve congestion. You can justify the project by its impact on quality of life.

Question: How does this fit in with all these other efforts like those conducted by the Trust for Public Land and Atlanta Development Authority? You do not talk about them; they don't talk about you.

Answer: *We are included in these other efforts, but to qualify for federal funds, the transit portion must go through a separate process. TPL and ADA are looking at the parks and economic development aspects of the Beltline concept only. We cannot prejudice the alternatives by just focusing on the Beltline. Its just one alternative that we are considering, but we also have three others we must look at as part of our analysis. We must be very objective. We do recognize that is important to help the community distinguish among the studies to avoid confusion. We will do our best to incorporate, where possible, all the efforts.*

Question: ADA is so eager to identify the transit component of the Beltline that they even have their own transit task force. I am afraid that what they come up with will not match this study's LPA. The public needs to know that this AA is the real study. This follows the federal process, despite what the ADA Transit Panel identifies. The City of Atlanta needs to make decisions based on this AA and not on the panel's results.

Answer: *If federal dollars are to be utilized in the implementation of transit for the Atlanta area, the funds must be applied for and coordinated through MARTA. We are*

the transit agency for the region. We are working closely with the City of Atlanta and the ADA.

Question: I understand the East Line is ahead of the Inner Core in terms of priorities for the MARTA board. Could that be changed? What if this project secures federal funds?

Answer: *As it is now, the East Line performs better in the analysis and DeKalb County has taken steps to facilitate its implementation. If funds are awarded for the Inner Core, the Board will take into account all the factors and make the right decision on what project moves forward.*

Comment: This is about getting money in a competitive environment. Atlanta has always been an experimental place in North America. We have a very special opportunity with this project. We need to come up with a new paradigm when we apply for the funds; we need to be outrageous to get noticed.

Answer: *FTA mandates that we follow a strict process. The focus is less on innovation and more on demonstrated need and a defined purpose. Instead of emphasizing the 'out of the box' aspects, we need to make our project fit 'in the box'. It must meet a defined set of criteria to be eligible for federal funding. The FTA will be grading our project on how well it meets their requirements compared to other projects in the nation.*

Question: Who are you working for, who is your client?

Answer: *The project team is working for the MARTA Board. Our result, the LPA, is also for the Atlanta Regional Commission, the regional planning agency responsible for transportation programming. Once the LPA is included in the Regional Transportation Plan, MARTA can apply for New Starts Funding.*

Question: Aren't you (MARTA) the transportation czar of Atlanta? Do you see any value in working with the highway builders (GDOT)?

Answer: *GDOT, GRTA, ARC, and MARTA all work together as planning partners for the region. We have included representatives from these agencies on our Technical Advisory Committee. We coordinate projects wherever possible.*

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Question: We do have a project that fits in the box – the C-Loop! My neighborhood group wants this project. We have a corridor that fits in very well with the New Starts process. Is there a chance we can break this segment off from the Inner Core project? We have a real defined project and a chance for the money!

Answer: *The C-Loop is very important to us. As far as breaking it off as a separate piece, we need to keep the entire Inner Core project intact for the AA. You're right,*

there is a defined need in the Emory to Lindbergh corridor and that need will bolster the justification for the entire project.

Comment: There is a rush to get the TAD approved this year. Is that a problem considering the AA's timeline?

Answer: *No, it's not a problem that the efforts are on two different speeds. As I stated earlier, our process is separate from the other studies. Keep in mind, the Beltline is more than a transit project; it's about parks and economic development as well. The other components are on their own tracks and are more easily influenced by factors like politics and private development. MARTA has to follow the federal process.*

Question: What are you going to do with us at the next meeting?

Answer: *We will be discussing the Purpose and Need in greater detail and finalizing a draft. We will also define the alternatives we'll be evaluating in the study.*

The meeting concluded at 6:00pm. Ms. Kennedy thanked everyone for attending.

MARTA Beltline Alternatives Analysis
Stakeholders Advisory Committee Meeting
All Saints Episcopal Church
August 3, 2006

Overview

Introductions from meeting attendees – MARTA staff, consultant team, neighborhood representatives, advocacy groups, and concerned citizens

Inga Kennedy then welcomed the group and introduced Johnny Dunning with MARTA's planning staff.

Mr. Dunning welcomed the group and began his presentation of the Beltline Alternatives Analysis technical results. Copies of the presentation were handed out to the meeting attendees. Mr. Dunning began be reviewing the up-coming public meetings in August 2006.

Summary of Oral Questions and Comments

Question: Will the meetings address overlapping NPU boundaries?

Answer: All the meetings will have the same content. Ms. Kennedy invited everyone to attend the meeting that was most convenient.

Mr. Dunning continued by outline the proposed Beltline route alternatives, including the TSM baseline alternative. He points out that the TSM is required to maximize the current system. MARTA has evaluated the bus lines along the route and examined several routes to meet the current Beltline demand. He then continues to outline the four Beltline route alternatives that have been determined in technical studies. Alternatives B1, B2, B3, and B4 combine two basic alignments and two connection points. In addition, all four alternatives have three possible transit technologies: light rail, streetcar, or bus rapid transit. Mr. Dunning outlined all these alternatives on maps.

Question: Why is Interstate-20 east of Atlanta highlighted on each map?
Answer: Emphasizes the C-loop project route, a priority project for MARTA

Question: Why does the Beltline route jog eastward along Dekalb Avenue?
Answer: To get around Hulsey Yard.

Question: What if Hulsey Yard becomes available?
Answer: That can be addressed in the environmental impact phase and the plan can be changed to reflect that change in property and route.

Question: Please address the MARTA board's priority projects.
Answer: Mr. Dunning lists the top priorities, including the C-loop and Beltline projects; Ms. Kennedy also touches on how the priority planning process has progressed.

Mr. Dunning then continued to discuss travel demand modeling considerations.

Question: Has the plan taken into account the new lofts being built in the area?
Answer: Yes, the model has accounted for changing demographics along the Beltline route.

Question: If infill stations aren't considered in this planning phase, can they be considered later?
Answer: Yes, they can be included in the environmental impact phase.

Mr. Dunning then began discussing the capital cost estimations and the relevant transit technologies. Of particular interest to the crowd were the specifics of Bus Rapid Transit technologies.

Question: How do BRT compare in weight to current buses?
Answer: They will be heavier, bigger capacity of 60-90 people, potentially larger.

Question: Have these heavier buses been considered for the effects on surrounding houses?
Answer: This applies not only to buses, but to all forms; the EIS will get in to further specific details about the direct impacts and potential mitigation measures.

Question: Will the fuel type be detailed in the EIS?
Answer: Yes, with a preference for clean fuels (such as CNG or clean diesel)

Mr. Dunning then moved on to specific details about street cars, outlined on the presentation slide.

Question: Why will bridges be redesigned for BRT but not light rail?
Answer: Bridges are already designed for rail travel, buses and asphalt have different engineering requirements.

Question: Why limited signaling?
Answer: Differences between speed and mobility of rail or streetcar

Question: Will streetcars and light rail have a train horn?
Answer: Depends on the option – both BRT and LRT will have subdued horns, not much different than current street traffic; neither will have a freight-rail type horn.

Question: Will the alternate with dog-legs pose intersection redesigns?

Answer: Yes, two alternatives have been blocked out because of the engineering challenges posed by turning radii with light rail transit.

Question: Will the alternatives be reinstated if Holsey yard is acquired?
Answer: Depends on the timing, but there have been no indications so far that that property will be sold.

Mr. Dunning then proceeds to operating and management estimations for each mode type, as referenced in the presentation slides.

Question: What are the capacities of each mode option?
Answer: 60-90 riders on average, with some over 100 riders

Question: Why are some numbers negative (in comparative O&M cost table)?
Answer: With these alternatives, some bus service can be eliminated to save the existing system money.

Question: Assumption that the same number of people will be moved?
Answer: Yes, so BRT is still cheaper even with more buses, drivers, and frequency of service.

Mr. Dunning and the MARTA staff then handed out detailed technical matrices for discussion.

Question: Will King Plow area be covered?
Answer: Yes, both alternatives B2 and B4 are close to King Plow and Marietta Street corridor.

Discussion of the technical analysis matrix.

Question: Has rider preference been taken into account?
Answer: That is a very difficult preference to account for, many items in the matrix reflect market preference – such as developer propensity for rail – but rider preference has not been directly measured.

Comment: Studies along 75/85 have shown that BRT is significantly different than buses, people respond better to BRT and the dedicated BRT right of way.

Answer: Mr. Dunning says that MARTA is focused on the best moving option for mobility, not just the cool factor of which is the best looking.

Question: Has O&M costs been included also?
Answer: Yes, these have been incorporated into the technical matrix.

Question: Has a low bid been requested for this project?
Answer: Yes, MARTA does that for all vehicles – though that phase will not start until a mode has been chosen and construction actually started.

Further detailed discussion of matrix and evaluation options.

Question: What does the incremental cost for each new rider work out to?

Question: Will you pick from the best four alternatives or go with the number one option as designated by the technical analysis?

Answer: Currently picking the LPA from all the options that will be decided by the board with staff technical input.

Question: Cost of new equipment should be incorporated.
Answer: It is, both in the capital cost and O&M cost where appropriate.

Question: How does cost per new rider compare to other regional programs?
Answer: Very competitive.

Question: Will BRT be natural gas or diesel? Or is it an electric motor? How will the modes be affected by fuel type?
Answer: That will be reviewed later in the EIS phase; currently this assumes studied technology in practice in peer areas.

Question: Have revenue from bus advertisements been incorporated?
Answer: MARTA has to demonstrate that it can run this on current funding; other options for funding or revenue can be considered in the future.

Question: Stakeholders would be better informed with some information about how MARTA is currently funded and how this project will be funded.
Answer: Both Mr. Dunning and other MARTA staff spent several minutes describing the intricacies of federal and regional transportation funding – also provided some resources for more information.

Question: Will the preferred alternative be selected from the comparative results? How will the public be able to influence the process?
Answer: The public preferences will be consulted by the board before any decision is made on technical results.

Question: Will other surveys be accepted?
Answer: No, not as they are outside of MARTA's decision making process – the current technical analysis is being conducted by agency staff for the agency board; outside surveys and studies are not part of the internal MARTA process.

Question: Will bicycles be accommodated on the bus track?
Answer: No, maybe just to the side on a parallel track. The goal is transit with adjacent bike paths for the accommodation of other modes.

Question: How does the Mason property affect federal funding?
Answer: Depends on how the transaction proceeds.

Question: Which map is the best?
Answer: Provided in the handouts and the staff will be glad to discuss afterwards.

Summary of Written Comment Forms

Comment: Good work, impressive analysis, clear presentation, excellent handouts. I now understand all the considerations much better. I prefer streetcar as a technology, but realize the cost concerns may be paramount. So I can live with Alt B1- BRT or Alt B1-Streetcar.

MARTA Inner Core Public Meeting Summary
Senior Citizens Services
September 20, 2005
6:00-8:00pm

The meeting was attended by 14 participants. Attendees were greeted by project staff, asked to sign-in, and presented with meeting handouts. Attendees were invited to review project information boards and speak with staff. A presentation and question and answer session followed.

Ms. Inga Kennedy, PEQ, called the meeting to order and welcomed the attendees. Ms. Kennedy reviewed the handouts, which included a project newsletter, comment form, copy of the PowerPoint presentation, and the project goals and objectives. A MARTA video, created for a previous study, explaining light rail technology was also handed out. Ms. Kennedy reminded the attendees that all handout information would be available on MARTA's website www.itsmarta.com after the meeting. She then asked the consultant team to introduce themselves.

Ms. Kennedy turned the meeting over to Mr. Johnny Dunning, Jr., MARTA project manager. Through a Power Point presentation (see attached) Mr. Dunning reviewed the Feasibility Study findings, the Alternatives Analysis framework and timeline, the project purpose and need, project goals and objectives and the next steps/on-going activities. Following the presentation, Mr. Dunning invited attendees to ask questions and make comments.

Summary of Oral Questions and Comments

Question: Could you clarify your statement about population? You mentioned there are four million residents in Atlanta now and there will be six million in 2030. You are talking about the whole region right? What is the population for the study area?
Answer: The study area has about 220,000 residents now and approximately 400,000 are projected.

Question: All you (Beltline) studies say different figures for population! At a meeting last night, I heard 150,000 as a current population.
Answer: Our study is looking at the C-Loop concept as well, so the South DeKalb Mall area is included in our population figures.

Question: We are congested now, and this project won't start until 2011. What is going to be done between now and 2011?
Answer: Unfortunately we cannot build projects like this overnight. There is a lengthy federal process that we must follow. Through this study we will identify some potential improvements to the MARTA system that do not require major investments and can be implemented in the interim.

Question: How do you feel about Wayne Mason's announcement that he is leading his own study looking at transit in his corridor?
Answer: We will coordinate with him on the study. He has stated that he will be sharing his findings with us.

Question: If he picks trolley would that force the hand of the other studies?
Answer: No, our process must look objectively at all technologies. We will certainly try to connect with whatever technology is selected.

Question: This project is so many years out from completion. You really need to make an effort to make this real to people. People can't imagine 2030 plans!

MARTA Inner Core Public Meeting Summary
Georgia Hill Neighborhood Facility
September 22, 2005
6:00-8:00pm

The meeting was attended by 22 participants. Attendees were greeted by project staff, asked to sign-in, and presented with meeting handouts. Attendees were invited to review project information boards and speak with staff. A presentation and question and answer session followed.

Ms. Inga Kennedy, PEQ, called the meeting to order and welcomed the attendees. Ms. Kennedy reviewed the handouts which included a project newsletter, comment form, copy of the PowerPoint presentation, and the project goals and objectives. A MARTA video, created for a previous study, explaining light rail technology was also handed out. Ms. Kennedy reminded the attendees that all handout information would be available on MARTA's website www.itsmarta.com after the meeting. She then asked the consultant team to introduce themselves.

Ms. Kennedy turned the meeting over to Mr. Johnny Dunning, Jr., MARTA project manager. Through a Power Point presentation (see attached) Mr. Dunning reviewed the Feasibility Study findings, the Alternatives Analysis framework and timeline, the project purpose and need, project goals and objectives and the next steps/on-going activities. Following the presentation, Mr. Dunning invited attendees to ask questions and make comments.

Summary of Oral Questions and Comments

Comment: There are 800 news homes in the southeast area. Most of the concepts don't serve this area.

Question: The beltline concept is so popular. Its even on the cover of Creative Loafing this week. It has huge community support. Why do you have this process. Just pick the beltline.
Answer: There is a specified process to obtain federal funds. We are following the new starts process.

Comment: Connectivity to East Atlanta village is my issue. It's a destination for people on this side of town. We need transit to connect our neighborhoods to the village.

Question: Why are you going for new money and a new project instead of focusing on repair and rehab of the existing system. I think adequate bus service could serve the need.
Answer: We are focusing resources on the existing system. In addition, the beltline/c-loop would set the stage for future system expansion.

Comment: There is defensiveness in the southeast because we were hard hit in the last round of budget cuts. Boulevard and Moreland Avenue are highly congested and we need transit service.

Comment: Don't eliminate the beltline; the c-loop is not as critical. We need to balance and link growth with investment in transportation. We need to do a cost effectiveness study.

Question: How will you get people to the beltline? Can you park at the station?

MARTA Inner Core Public Meeting Summary
The Mall at West End
September 26, 2005
6:00-8:00pm

The meeting was attended by 19 participants. Attendees were greeted by project staff, asked to sign-in, and presented with meeting handouts. Attendees were invited to review project information boards and speak with staff. A presentation and question and answer session followed.

Ms. Inga Kennedy, PEQ, called the meeting to order and welcomed the attendees. Ms. Kennedy reviewed the handouts which included a project newsletter, comment form, copy of the PowerPoint presentation, and the project goals and objectives. A MARTA video, created for a previous study, explaining light rail technology was also handed out. Ms. Kennedy reminded the attendees that all handout information would be available on MARTA's website www.itsmarta.com after the meeting. She then asked the consultant team to introduce themselves.

Ms. Kennedy turned the meeting over to Mr. Johnny Dunning, Jr., MARTA project manager. Through a Power Point presentation (see attached) Mr. Dunning reviewed the Feasibility Study findings, the Alternatives Analysis framework and timeline, the project purpose and need, project goals and objectives and the next steps/on-going activities. Following the presentation, Mr. Dunning invited attendees to ask questions and make comments.

Summary of Oral Questions and Comments

Comment: You say that we need to "quantify problem to receive federal funds". Please look at the existing system and ask the same questions. People just can't get to where they need to go.

Question: How much will it cost to use the new system?
Answer: We don't know the answer to that question yet.

Question: C-Loop. Where did it come from? Also, what if the C-Loop is the LPA that emerges? What will ADA do?
Answer: C-Loop was a concept developed to connect activity centers, including Emory. Your other question is challenging.

Comment: I work at the museum. The train system doesn't serve very many patrons.

Question: It is hard to visualize this project. We need to speed things up around the city but what are you hearing from the neighborhoods.
Answer: We have a lot of support for the idea.

Question: Which concept is light rail? I rally for that.
Answer: We don't have modes selected yet.

Comment: I am from the Vinings City Civic Association. We've always complained about east-west connectivity and support concept 4.

MARTA Inner Core Public Meeting Summary
North Avenue Presbyterian Church
September 27, 2005
6:00-8:00pm

The meeting was attended by 45 participants. Attendees were greeted by project staff, asked to sign-in, and presented with meeting handouts. Attendees were invited to review project information boards and speak with staff. A presentation and question and answer session followed.

Ms. Inga Kennedy, PEQ, called the meeting to order and welcomed the attendees. Ms. Kennedy reviewed the handouts, which included a project newsletter, comment form, copy of the PowerPoint presentation, and the project goals and objectives. A MARTA video, created for a previous study, explaining light rail technology was also handed out. Ms. Kennedy reminded the attendees that all handout information would be available on MARTA's website www.itsmarta.com after the meeting. She then asked the consultant team to introduce themselves.

Ms. Kennedy turned the meeting over to Mr. Ted Williams of DW&A. Through a Power Point presentation (see attached) Mr. Williams reviewed the Feasibility Study findings, the Alternatives Analysis framework and timeline, the project purpose and need, project goals and objectives and the next steps/on-going activities. Following the presentation, Mr. Williams invited attendees to ask questions and make comments.

Summary of Oral Questions and Comments

Comment: I have a concern about putting the cart before the horse. The Atlanta Development Authority and developers are moving forward with the Beltline project. They are announcing plans for the project without the necessary buy-in from appropriate agencies.

Question*:* I was told by the ADA that we could get partial funding from FTA. Is this true? Can we pick and choose portions of each concept?
Answer*:* FTA does not pick and choose. It is very unlikely that any system would be implemented at one time. We would identify a minimum operating segment – with its own utility. Over time, the entire locally preferred alternative could/would be built.

Question: Can we phase from a BRT system to a Light Rail system over the course of a long project**.**
Answer: Yes, it is possible. This idea is a major consideration on the I-20 East segment. At a later time, BRT might be upgraded to light rail to meet ridership demands.

Question: Do we need a TAD to move forward?
Answer: We started our project without a TAD, but it does make the project more feasible and appealing. Regardless, we will have to do a specific financial plan to outline funding for the project.

Comment: Short-term financial problems should not impact our long-term vision.
Response: There is a desire by some to streamline funding sources for all transit providers – not just MARTA, but all transit providers throughout the region (Clayton, Cobb, Gwinnett, etc.).

MARTA Inner Core Public Meeting Summary
Rollins School of Public Health
Emory University
September 29, 2005
4:00 - 6:00 p.m.

The meeting was attended by 40 participants. Attendees were greeted by project staff, asked to sign-in, and presented with meeting handouts. Attendees were invited to review project information boards and speak with staff. A presentation and question and answer session followed.

Ms. Kristine Hansen-Dederick, Sycamore Consulting, called the meeting to order and welcomed the attendees. Ms. Hansen-Dederick reviewed the handouts, which included a project newsletter, comment form, copy of the PowerPoint presentation, and the project goals and objectives. A MARTA video, created for a previous study, explaining light rail technology was also handed out. Ms. Hansen-Dederick reminded the attendees that all handout information would be available on MARTA's website www.itsmarta.com after the meeting. She then asked the consultant team to introduce themselves.

Ms. Hansen-Dederick turned the meeting over to Mr. Johnny Dunning, Jr. of MARTA. Through a Power Point presentation (see attached) Mr. Dunning reviewed the Feasibility Study findings, the Alternatives Analysis framework and timeline, the project purpose and need, project goals and objectives and the next steps/on-going activities. Following the presentation, Mr. Dunning invited attendees to ask questions and make comments.

Summary of Oral Questions and Comments

Question: With the local backing for a TAD and other development pressures, what happens if you come up with a locally preferred alternative that is not the Beltline? It seems as if the TAD decision will be made before the alternatives analysis is complete.
Answer: It's a difficult issue. We have a federal process we have to follow. The federal process is set forth to meet an identified transit need. The process we are going through is required to compete nationally for New Starts funding. If the LPA is something other than the Beltline, there may be other funding sources out there that could look toward implementing transit within the proposed TAD.

Comment: There is a White Paper published by the Transit Panel that indicates the Beltline transit concept may not work for the complete 22-mile loop, but that the green space effort still makes sense.
Response: The White Paper came out in response to the current need, but did not comment on future ridership because that information has not yet been provided. The projection of ridership will have to be taken into consideration.

Question: Will there be ways to link key points of living, employment, entertainment, connectivity between Emory, Georgia Tech, Midtown, etc.?
Answer: We can look at ways to improve connectivity. Please provide specific comments /requests for connectivity on the comment form.

Comment: There is a need to get people out of their cars, but it needs to be convenient. I would like to be a transit rider, but it takes me twice as long as it does to drive my car.

MARTA Inner Core Alternatives Analysis
Joint SAC/Public Meeting
All Saints Episcopal Church
December 8, 2005
6:00-8:00pm

The meeting was attended by 109 participants. Attendees were greeted by project staff and asked to sign-in. Attendees were invited to review project information boards and speak with staff. A presentation and group exercise followed.

Ms. Inga Kennedy, PEQ, called the meeting to order and welcomed the attendees. She explained that this evening's meeting was a joint session of the project's Stakeholder Advisory Committee and the general public. The purpose of the meeting was to present the different aspects of potential transit technologies and get the group's feedback on station locations. She gave a brief overview of the project and then turned the meeting over to Mr. Johnny Dunning, Jr., MARTA project manager.

Using the project display boards, Mr. Dunning briefly reviewed the Feasibility Study findings and the four concepts under consideration in the Alternatives Analysis. He then explained each of the origin-destination trend maps for the SE, SW, NE and NW quadrants of the Inner Core study area. These maps visually display the amount of trips to and from and within the Inner Core. Mr. Dunning explained that this information is key in evaluating alignments as well as in the consideration of transit technologies and station locations.

After Mr. Dunning's presentation, the attendees broke into groups and were asked to participate in a station location exercise. Ten groups were asked to mark aerial maps with their station preferences. Immediately following the group exercise, Ms. Adelee LeGrand, URS, gave a short presentation on transit technology types, which included visualizations of Bus Rapid Transit (BRT), Diesel Multiple Unit (DMU), trolley and streetcar.

Summary of Oral Questions and Comments

Question: How did you get the origin/destination data?
Answer: We used data from the Atlanta Regional Commission's Regional Travel Demand Model. The data itself comes from Census information, household surveys and a variety of other sources.

Question: Did you ask me where I wanted to go?
Answer: Yes, in the Feasibility Study, we asked attendees at public meeting series about their travel patterns. We also involved the NPU's as they are members of Stakeholder Advisory Committee.

Question: Is there cooperation between you and the Peachtree Streetcar Study?
Answer: Yes, we will incorporate studies like that into our findings. The impact of such projects will be considered. However, the Peachtree Streetcar will not be included as part of our alternatives as it is not currently in the Regional Transportation Plan (RTP).

Question: In the 'light rail mixed with traffic' scenario, would a lane be taken away and used for transit?
Answer: No, the transit vehicle would operate in the same lanes with the cars.

Comment: I would hope that whatever technology is chosen, that it's compatible with the corridor!
Answer: That's correct. For example, in existing neighborhoods, streetcar, light rail or BRT is appropriate.

Question: I noticed on the streetcar slides, the vehicles run with overhead wires. On a lot of Atlanta streets, the utilities have been buried. Are you going to have to add light poles?
Answer: That's a good point and we will have to consider that when we evaluate the technologies.

Question: Are you considering any subway or over the street facilities?
Answer: No, because of cost, we are not considering those options.

Question: Would increasing the number of technologies utilized in the project increase the number of transfers?
Answer: Yes, that is a possibility.

Question: If a technology that shares the road with cars is selected, then the transit vehicle runs the risk of getting stuck in the same traffic?
Answer: That's correct.

Question: How fast would the trolleys be?
Answer: The speed depends on the number of stops in a route.

Comment: I would like to see a technology selected that utilizes a fixed, exclusive guideway.

Comment: There seems to be a concentration of proposed stations on the northeast side, and only a few on the south. It's important to utilize a technology that will allow the addition of stations, in a cost-effective manner, as needs change.

Comment: In our group, we still had a lot of dots on our map. That says to me that connectivity is important; it's not all about the speed of the system.

Question: Is there a technology that is better suited for making frequent stops?
Answer: Frequency of stops will be decided in the operations plan. Different technologies have different capacity types. The goal is to move people as quickly as possible. The technology that best meets that goal will be selected.

Question: Are existing operations and maintenance facilities going to be taken into consideration?
Answer: Yes, ideally we would like to utilize the Armour Yard and other existing MARTA facilities. When we get more into the analysis, we will address that.

Question: What happens if MARTA is not the entity chosen to operate the system?

Answer: In the current RTP, MARTA is the sponsor of the project. We are currently taking this project through the federal process. That being said, there are a number of ways to get the project implemented, such as public-private partnerships. If that route to implementation is selected, MARTA will position itself to be among the partners.

Summary of Written Comments

Many MARTA stations are big chunks of cement and take up too much space with the Beltline stations, let's keep them small it make land use effective. (Think the efficiency of NYC subways), Also, coming from Japan I can tell you that they are light years ahead in terms of rail technology. A very nice trolley system can be found for example right outside the Nagoya station it is something to mimic. Finally let's make square outside the stops like NYC, Washington Square. We need more space for ppl. Thanks.

Need to be sure there is connectivity between lines. Consider express routes between major points of interest. We need to have one system is MARTA isn't working fix it rather have another entirely run the new lines.

Think of it not as rapid rail but more of a circulator/distribute to heavy rail MARTA. Consider new station between E2 & E3 thereby eliminate double loop to E3.

Consider future land use for trip generation around Beltline we want density. Use Streetcar or Light rail.

Whatever technology is chosen on combine I want it to be efficient and quick. I am for light rail, streetcars or DMU's. People in Atlanta will not ride a bus. I am in favor of the Beltline concept with some of the parts of the C-Loop and other's added on. T also want the system to be on. I also want the system to be flexible and be able to add on or take away as areas ground or patterns change. The most important thing is what will make most people get out of their cars? Thanks
P.S. What can we do to get more people involved? All I really see here is people with some special interest here, and not really the general public.

(1) It is critical that you provide ease of access to the airport. (2) Trolleys are a poor choice because of pedestrian embark and disembark safety issues and because the overhead wires are aesthetically disastrous. (3) Stay on top of major development/redevelopment plans and be able to site or add stations accordingly. (4) A big redevelopment is underway in the SE corner of I-75 & Howell Mill Rd- it needs service.

I'd like to see the trolley cars run all over town, Also to places outside of Atlanta such as Roswell, Cobb County as well as Gwinnett and places where they have vans now.

With respect to the 3 station in the Emory area. The East station is away from most of the student and further away from where the new Hospital will be.

The CDL stop and an end stop on the Clifton Rd side of Emory would be more convenient for students and patients. The CDL does need a schedule stop.

I Hope streetcars. Beltline may have 43 stops but this is less than any one MARTA bus line-Plus it is not 100%. Dependent on surface street traffic I do not see 43 neighborhood Beltline stops as a deterrent it may allow MARTA to reduce some bus line and their noise and maintenance. The Beltline may not bring people to every attraction, but many neighborhood platforms will bring people to MARTA heavy rail, which bring people to other alternative. Help MARTA heavy rail ridership. Look at where you are taking people from that's our homes and where we derive to get into our cars.

If light rail is used be sure to add bikeways that travel along the rail paths. Ideally, these are smooth enough to skate on too.

Please keep the Beltline proposal alive. The C-Loop does not connect the heart of the city.

Has anyone considered using traffic signal preemption for vehicles that operate in the right of way (including the Current buses)?

Look mostly at peak hour traffic-most likely to attract mass transit riders during heavy traffic.

Charrette Exercise- Map Overlay should have been streets rather than aerial (use aerial for visual perspective). Excellent presentations by Inga, Johnny and Adelee. Lots of interest in East-West travels.

I'm very glad you had the meeting. I learned a lot and very interested on seeing this project succeed. I'm especially interested in the C-Loop.

This is all very exciting. The faster the Beltline transit component can be implemented the better. I will certainly be using it. Please feel free to remove BRT as an alternative.

The maps showing were difficult for me to understand. I wish the documentation to the meeting had contained links to those maps and the suggestion that participants prepare by studying them. I arrived 5:50- the meeting did not begin until 6:20 or later. One explanation that presenter used suggest the need to anticipate such delays. The collection of information/suggestion for where to place stops worked best at the table were I was, where the suggestions came from each person's

knowledge of a specific neighborhood. The big question: Who are the anticipated users of new transportation?

MARTA Beltline Alternatives Analysis
Public Meeting Summary
August 7, 2006

Monday, August 7, 2006
Peachtree Branch Library
6:00-8:00 pm
Attendance: 72

Summary: Attendees were greeted by project staff, asked to sign-in, and presented with meeting handouts. Attendees were invited to review project information boards and speak with staff. A presentation and question and answer session followed.

Ms. Inga Kennedy, PEQ, called the meeting to order and welcomed the attendees. Ms. Kennedy reviewed the handouts and explained that the purpose of the evening's meeting was to present the final alternatives and to receive public input. She highlighted the ways in which the public could provide input, including completing a hard copy of the comment form before leaving the meeting, or by submitting it via fax or postal mail. She mentioned that the comment form may also be emailed to the project team and that public comment can be provided throughout the evening's presentation. Ms. Kennedy introduced Richard McCrillis, General Manager of MARTA.

Mr. McCrillis thanked the public for attending them meeting and encouraged public input and comments.

Ms. Kennedy then asked that the MARTA representatives introduce themselves, which included staff and board member Ed Wall. Ms. Kennedy also recognized the members of the project consultant team.

Ms. Kennedy turned the meeting over to Mr. Johnny Dunning, Jr., MARTA project manager. Mr. Dunning announced that questions and comments will be allowed throughout and at the conclusion of the presentation. Through a Power Point presentation (see attached) Mr. Dunning recapped the history of the study, the status of the BeltLine project, a description of the alternatives, the parameters of the evaluation, technical results, and the next steps. Comments expressed and questions asked are summarized below.

Summary of Oral Questions and Comments

Question: Does the model used to project demand allow for adjustments and growth in household size and income?
Answer: The data used for this analysis represents a current snapshot of household size and income.

Question: Is potential development due to the BeltLine project included in the model?

MARTA Beltline Alternatives Analysis
Public Meeting Summary
August 8, 2006

Tuesday, August 8, 2006
7:00-9:00 pm
East Lake YMCA
Attendance: 59

Summary: Welcome from Inga Kennedy, director of public involvement for the MARTA Inner Core study. Overview of the presentation and handouts – including visual pamphlet of potential modal technologies for discussion purposes, not to indicate a preferred technology. Ms. Kennedy asked for a show of hands about new participants to the MARTA Inner Core and Beltline planning processes. She then reviewed the handouts and future public meetings. She invited everyone present to fill out a comment form and submit to the MARTA staff.

The MARTA staff and consultant team then introduced themselves.

Ms. Kennedy then introduced Johnny Dunning of the MARTA planning staff. Mr. Dunning welcomed the crowd and gave a brief presentation overview. He began by recapping the Inner Core planning process and discussed the project's dynamics.

Summary of Oral Questions and Comments

Question: How to resolve the redundancy between the C-loop and Beltline along the west side.
Answer: The C-loop is also under study and both studies will be submitted to regional decision makers for the final decision.

Mr. Dunning continued to review the Beltline project dynamics. He outlined the alternative routes, including the Transportation System Management option.

Question: I participated in a workshop in December and none of the alternatives came out of these meetings. How did these alternatives come about?
Answer: They developed once the C-loop project split off. Mr. Dunning explained that he would get to the details of each alternative and the specifics of each alternative developed largely from engineering constraints.

Question: Are pedestrian & transit routes linked, or will trails follow a different route?
Answer: MARTA is working closely with the city of Atlanta and will try to make the bike and pedestrian trails follow the transit route as closely as possible.

Question: MARTA should make an alternative plan about Hulsey Yard and a potential deal in that area.
Answer: Changes can be made during the EIS phase.

Question: Why did MARTA bypass Reynoldstown?
Answer: Dependent on Hulsey Yard and engineering feasibility of that area.

MARTA Beltline Alternatives Analysis
Public Meeting Summary
August 9, 2006

Wednesday, August 9, 2006
7:00-9:00 pm
Mozley Park Recreation Center
Attendance: 37

Summary: Attendees were greeted by project staff, asked to sign-in, and presented with meeting handouts. Attendees were invited to review project information boards and speak with staff. A presentation and question and answer session followed.

Ms. Inga Kennedy, PEQ, called the meeting to order and welcomed the attendees. Ms. Kennedy reviewed the handouts and explained that the purpose of the evening's meeting was to present the final alternatives and to receive public input. She highlighted the ways in which the public could provide input, including completing a hard copy of the comment form before leaving the meeting, or by submitting it via fax or postal mail. She mentioned that the comment form may also be emailed to the project team and that public comment can be provided throughout the evening's presentation.

Ms. Kennedy then asked that the MARTA representatives introduce themselves, which included staff and board members including Ed Wall, Juanita Abernathy, and Clara Axam. Ms. Kennedy also recognized the members of the project consultant team and a representative of the MARTA Breeze Program promotions team.

Ms. Kennedy turned the meeting over to Mr. Johnny Dunning, Jr., MARTA project manager. Mr. Dunning announced that questions and comments will be allowed throughout and at the conclusion of the presentation. Through a Power Point presentation (see attached) Mr. Dunning recapped the history of the study, the status of the BeltLine project, a description of the alternatives, the parameters of the evaluation, technical results, and the next steps. Comments expressed and questions asked are summarized below.

Summary of Oral Questions and Comments

Question: Does alternative B3 go around the Edgewood/Memorial Drive area?
Answer: Yes.

Question: Has a decision been made on the type of technology that will be used?
Answer: Not yet. This is currently being evaluated.

Question: Have the numbers for the ARC travel demand model been run yet?
Answer: Yes, though all of this information is not yet available.

Question: What is the ARC's perspective on the type of technology that should be used?

MARTA Beltline Alternatives Analysis
Public Meeting Summary
August 10, 2006

Thursday, August 10, 2006
7:00-9:00 pm
North Avenue Presbyterian Church
Attendance: 47

Summary: Welcome from Ms. Inga Kennedy, director of public involvement for the MARTA Inner Core study. Ms. Kennedy introduced the MARTA and consultant staffs. She then turned the meeting over to MARTA board chairman Ed Wall.

Mr. Wall thanked everyone for attending. He then asked for a show of hands from people who preferred a light rail or streetcar transit option – the crowd strongly favored these options. He also asked for a show of hands from people who preferred a bus rapid transit option. This response was much less enthusiastic. Mr. Wall noted the responses and emphasized the importance of public input in the Beltline planning process. He conceded that bus rapid transit was significantly more cost effective, but reminded everyone that no transit option has been selected and all three will be reviewed by the board. Neither is a foregone conclusion and MARTA will rely on public input for the final decision. He then thanked everyone again and excused himself to attend another meeting.

Johnny Dunning then introduced himself and began his presentation. He first re-capped the Inner Core planning process – a discussion of the history of the process, the decision to split the Beltline and C-loop projects, and the direction that has been taken to this point. He then moved to a discussion of the Beltline build alternatives, including the TSM and four build alternatives.

After discussing the build alternative routes, Mr. Dunning began discussing the evaluation parameters used to examine the build and transit alternatives – as outlined in the presentation slides.

Summary of Oral Questions and Comments

Question: How do the ridership numbers take into account user preference for different technologies?
Answer: The model does not. User preference surveys cannot be submitted for federal funding. The technical analysis process uses rider surveys to get the demand, but other planning phases will take into account public input and public preferences.

Question: What is an infill station?
Answer: A new MARTA rail station on Beltline crossing points.

Question: Do you include info about speed of implementation for each mode?
Answer: Not in this phase, but will be accounted for later in the process.

Question: What is the communication system used for these modes?
Answer: Location sensors for operation of the system, in addition to radios in each cab.

MARTA Beltline Alternatives Analysis
Email Comments from Public Meetings August 7th – 10th 2006

- I have recently heard about the new proposed plans for the beltline. I am a future resident on the home park area and would be interested to see the beltline become a reality. Since it is in the planning stages I wanted to let you know that I support the B4 plan. I feel that it would bring people to the area of Home Park and be the most convenient plan for getting around town. I just wanted to let you know my thoughts when it comes time for you to make a decision on this project.

- Light-rail is my choice

- I was very disappointed after reading recently that a rapid bus was the preferred mode for the beltline, rather than trains. I could rattle off a litany of reasons why such a decision is so short sighted; however, I wish my frustration to come out as something other than a rant. Simply, this city needs to be thinking long term and buses in any form are not long term. Sometimes the answer isn't "the cheapest" or "the least expensive" from a today perspective. Sometimes you have to pay more today to set up a more viable long-term solution. This city currently has transportation spine that is road based…interstates to primaries to secondary. Public transportation needs its own spine…commuter rail to subway to bus. MARTA is the beginnings of a spine with plenty of bus nerves.

  We need to build the more spine, more rail for MARTA remain/become viable and for this city to break the "road" cycle that has kept public transportation from expanding for last 15-20 years. Please do not disturb the original beltline vision of rails and trails and parks. It was the original vision of rails that created the excitement and the drive to make this happen. People are behind the rails and are willing to spend the money now to make life better over the long haul.

- Just wanted to give my opinion on the Belt Line Project. I live in Grant Park and think this would be a fantastic addition to transportation options in Atlanta! I am strongly opposed to having the Belt Line use busses and hope the city doesn't go that way just because it may be cheapest option initially. As a long-time city resident, I've seen the legacy of always doing things the cheapest way possible - crumbling infrastructure (water and sewer), over head power lines that topple during storms (instead of putting them underground), gridlock traffic (because roads are cheaper to build than rail), and on and on. I hope the city does it right this time - invests in light rail and biking trails for the Belt Line.

- I am adamantly opposed to Marta's recommendation to replace the proposed rail line with buses and the ROADS they will require. The beltline is about greenspace. Look around. The buses are always empty. Nobody wants to ride the bus.

- I cannot attend a meeting and would like to weigh in with my experience in Portland, Oregon. I really liked the streetcar free transit system throughout the city and would

like to see a similar approach here in Atlanta. It was very user friendly and fun to use as a visitor to the city there for a conference.

- I would like to voice my overwhelming opposition to a BRT style transport mode for the Beltline. I favor light rail or streetcar. Bus transit would in my opinion be no improvement to the current and growing transportation infrastructure problems in Atlanta. I urge MARTA to solve the problems associated with the "dog leg" turn in Reynoldstown and near the Hulsey Yards.

- I am an Atlantic Station resident and wanted to give my comments. I would much rather prefer the rail transit being implemented for Atlantic Station residents. Matter of fact I am strongly against any other transit system implemented by Marta. This is because the rail is a much smoother and efficient ride compared to any other method (e.g., bus, street-car). The bus or street-car would have to use the same roads as any other vehicles, and will have to go through major traffic during rush hour, or when there's an accident, or for no reason at all when there's just too many cars on the road. Whereas, the rail would be used only for the people commuting on the rail, and for no other reason, making it a much faster, user-friendly, efficient, streamlined, clean, environmentally-friendly, and preferable method for a public transit system.

- I attended the public meeting held August 8th at the East Lake YMCA. As a professional planner myself, I wish to commend the MARTA staff and contractors for presenting a thorough overview of the technical analysis of alternatives for transit. There was a lot of information to absorb, and many good questions came from the audience.

  I would like to offer the following comments regarding the alternatives analysis:

  The Technical Results displayed in the presentation should be fine-tuned to reflect more weight toward environmental effects. The criterion of "Change in Pollutant Emissions" should be expanded to include the effects from additional electricity generation needed to power the rail-based systems, instead of simply focusing on tailpipe emissions. Also, rather than measure the change from TSM, you should measure the change from the status quo (total emissions from all vehicles on roads and rails plus electricity demand).

  The patronage estimations (daily transit ridership) should play a greater role in the analysis of transit technologies. You displayed a table showing different patronage estimates for the different route alternatives, but it wasn't clear if these were held constant across technologies, or were allowed to vary. As several people testified at the meeting, rail systems are inherently more attractive to riders and would be expected to draw higher patronage than the bus-based systems.

  Based on what I know today, I would support the adoption of Alternative B3 -Streetcar. The Reynoldstown area needs to be served (and the alternatives that route through King Memorial are too close to the existing north-south MARTA lines to justify their construction). B3 generated the highest estimated patronage, both in regional and

beltline-only boardings. I also support rail technologies, and the streetcars are more cost-effective than light rail.

- I attended the Marta Beltline Meeting on 8/10/2006 and wanted to give my thoughts regarding the options presented. Regarding the type of transit to use (BRT, LRT, Streetcar) after investigating BRT more on the Internet, if the BRT where implemented I would hope to see a system that looks and has the feel of LRT. That would include these capital costs considerations:
    - Buses that look like trains with the wheels covered.
    - Instead of having paved roadways for portions of the transit not on existing roads consider using bumpers with a grass median between the tires.
    - Consideration should be given to buses that use hybrid power so the system is not as depend on gas.
    - Build basic infrastructure for a future LRT up-grade (if demand for transit increases) This would include appropriate right of way areas and ensuring bridges that are build could support buses and trains.

While I am not a fan of BRT, I understand the capital costs and implementation issues with installing rail and would not have a problem if it were installed. I feel that if a world class BRT was build it might be more accepted. However, I would hope that if this system is implemented that Marta would make the recommendation that if rider ship increases over time that the system be up-graded to a LRT. Regarding the routes listed in the presentation, I am very torn with the northern arc of the loop. While the complete loop would open up the Brookwood area various transit options, I like the idea of having transit from the Arts Center Station passing through Atlantic Station (other than the horrible bus ran by Atlantic Station)

For the route on the southeast side, I would favor the transit going to the King Memorial Center instead of Inman Park Station for cost considerations. Because those neighborhoods are so close to existing transit it would not be hard for someone at the Inman Park Station to ride Marta to King Memorial and transfer to the Beltline. I also feel that a link to the Inman Park Station would cause more disruption to neighborhoods than to King Memorial.

- Dear MARTA,

  I live in Reynoldstown which is at the junction of your east side beltline alternatives. I attended the Aug 8th East Lake Public Meeting; these are my comments:

  Whether you decide to run the line towards the King Center Station or towards the Inman Park/Reynoldstown Station, I believe there will be a positive effect on Reynoldstown so my comments aren't heavily weighted by my neighborhood bias. I've lived in the area for years so I think I know what I'm talking about. (1) like everyone else I favor a street car alternative. I don't care for the bus alternative. (2) I prefer the path towards the Inman Park/Reynolds Town Station for several reasons (I wish you would run that line another 1/2 mile up Moreland and further into L5P). First reason, there is nothing on Memorial of interest for the beltline ridership if the line turns towards the King

Center. Take a drive yourself and you will agree. There is nothing there. Nothing! How many times do you think I want to visit Oakland Cemetery? The fact that there is nothing there is reflected by your proposed lack of stops on that route until you join back up with the original beltline proposed route. Why on earth make that turn? If you turn towards Inman Park/Reynoldstown Station you come close enough to L5P to ride the Beltline there. There is development there that would welcome the service: restaurants, shops, etc. That development would increase ridership from noon to night. Also the Inman Park/Reynoldstown Station route would provide access to the Freedom Park trails. There are also people in Candler Park and L5P that would use the service. The same isn't true on Memorial towards the King Center. I don't understand why you don't run the line out Memorial until you hit Moreland, then go north on Moreland. That was one of the original alternatives and also opens up East Atlanta the beltline as well. I feel that you are trying to run to the King Station for political reasons and I think that is a mistake.

Thanks for you ear,

- I support the light rail option as transit along the Atlanta Beltline. It is more efficient and much more park friendly than a bus line. It also has a charm that busses do not have.

- Rail is what I understood would be used along the beltline. A bus is just a different animal. The pavement required is hot, the fumes smell bad, and their path is less confided making them more of a danger to foot traffic. The dream of the beltline included rail because that form a transit is more compatible along side walkers, runners and people enjoying the shade of a tree. I lived in New Orleans for a time and enjoyed the green space created by the "neutral ground" served by trolleys. It is fun for a tourist to see a trolley - have you ever heard a tourist say "cool a bus is coming"? The beltline is a way to make Atlanta a more attractive place to live and visit. Buses are a dealt nail to that dream.

  Thanks for your consideration,

- The Southern Environmental Law Center is pleased to provide the following comments on MARTA's Beltline Alternative Analysis, the Technical results of which were presented at public meeting August 7-10,2006. We strongly support the proposed redevelopment of the Beltline corridor. The Beltline presents a unique and priceless opportunity to improve neighborhood connectivity, encourage transit-oriented development in currently underused areas, expand Atlanta's parks system, and address Atlanta's parks system, and address Atlanta's chronic air quality problems.

  SELC believes the transit component of the Beltline project should use Streetcar or Light Rail Transit ("LRT") technology rather Than Bus Rapid Transit ("BRT"). While BRT may be less expensive to install initially, in the long run it is likely to prove an expensive failure and missed opportunity.

BRT WILL HAVE LESS RIDERSHIP

As several commenters have noted, buses have a stigma that reduces ridership among discretionary passengers. Multiple studies have shown that rail-based transit projects spur significantly higher ridership than bus-based projects. *See, e.g.,* Lyndon Henry & Todd A. Litman, *Evaluating New Start Transit Program Performance; Comparing Rail And Bus (2006)* (available at http;//www.vtpi.org/bus_rail.pdf). BRT, while it offers some of the benefits of a rail and avoids some pf the pitfalls of traditional bus services, nonetheless remains a bus technology and will be subject to substantial stigma.

MARTA's analysis, as presented in slide 20 of the presentation at the August public meetings, does not differentiate among the three modes in its patronage estimation. There, because BRT will attract fewer, riders the analysis overestimates the benefit of BRT relative to the other technologies. In turn, because cost-effectiveness is based at least in part on passenger miles, the analysis overestimates the cost-effectiveness of BRT.

1.4 Rail-based Technologies Offers Greater Air Quality Benefits

Electric rail-based technologies also offer greater air quality benefits than buses. In light of Atlanta's ongoing non-attainment of National Ambient Air Quality Standards for ozone and particulate matter, this factor is particular significant in Atlanta. "Change in Pollutant Emission" received a weight of only 0.03 in the technical analysis, tied for the lowest weight given any factor considered. In light of Atlanta's continuing failure to attain National Air quality Standards for ozone and particulate matter, this low weighting is particularly inappropriate. Air quality impacts should be weighted at least as heavily as other factors, if not more so.

1.5 Rail-based Technologies Will Spur More Transit-Oriented Development

Rail-based technologies also create a greater spur for transit-oriented development in their paths. The increased ridership and increase stability of rail provides greater incentives for developments to plan around rail-based transit. Simply put, underutilized area likely to remain underutilized if BRT technology is chosen.

1.6 BRT Will Not Ensure Continued Commitment to Transit

Finally. BRT is less likely to receive the ongoing resources necessary to insure its success. Because the initial investment is lower, buses can more easily be rerouted, and it is relatively cheap to expand or alter uses of asphalt corridors, it will be easy to "pull the plug" on the Beltline transit if political winds shift or initial ridership is not as robust as projected (a likely occurrence given the stigma associated with buses described above).It also is likely that there will be substantial pressure to open up the currently exclusive portions of right-of-way for other traffic if BRT is chosen, which would reduce the effectiveness of the transit system.

Conclusion

For all these reasons, we strongly urge that MARTA adopt a Streetcar or LRT option for the proposed Beltline transit corridor.

- Hello Marta,

  I am writing you to express my ideas about the MARTA Beltline Public Meeting at Mosley Park Recreation Center 1565 MLK Drive on Wednesday August 9th, 2006 7PM to 9PM.My name is Angel Luis Poventud and I live at 711 Piedmont Avenue N.E. Apt 68 Atlanta, Georgia 30308-1422. My cellphone number is 404-892-8306 and my e-mail address is anotherloudperson@yahoo.com

  I am very interested in the Beltline. I use MARTA only about twice a month. I ride my bike around town a lot. I also own a car. I am also a freight train conductor for CSX. I work at Tilford Yard on the West side of Atlanta. I am not interested in the BRT option for the Beltline. I would like to see light rail. I have traveled to Amsterdam ten times in the last seven years and I am very impressed with the flexibility of the vehicles that they use there. I am also interested in the option that would be the complete loop to and from Lindbergh Station and that would travel to the Edgewood shopping district.

- Please do not black top the transit corridor for BRT. It would be a shame to add to the heat island of the city, as well as having to demolish all of the rail bridges that are in place and that could be used with the light rail option. As you know rail is more efficient for moving passenger from an energy point of view, than rubber on pavement. Also, the rail would be quieter If you have a question, please contact me. Thank you for your time.

- Hello,

  The way I envision the Beltline (in order for it to be truly successful) is that it should include both some train tracks and a multi-use trail. The train tracks are for some type of light rail that will operate on the Beltline. There are some rumors that busses are being considered, however, I think using busses would be a big mistake. Part of the charm of the Beltline has always been the fact that trains would be used. Everybody loves to ride on a train. We also need a multi-use path to promote cycling, running, walking, and roller blading. If the Beltline is to function as a park, we definitely need that path. In addition, to give the entire project a park-like atmosphere, we need some green space to separate the trail/path from surrounding roads and if all of these components are implemented, the Beltline will really be a project that Atlantans will be proud of!

  Thanks,

- My family is opposed to busses on the Beltline. Living in Chicago and New Orleans, the Beltline is a fixed path, and trolley / light rail is the safest, less polluting, and most cost effective (in my opinion) for the Beltline. Busses are designed to travel down any surface street. Also, pedestrians walking the beltline would also encroach or even use

the paved path for busses, hence creating many safety issues. The pedestrian paths and the vehicle paths need to be separate and very different. Paving for busses is also less desirable than pervious or even greenscape between rails.

Thanks for listening,

- As a prospective user of the Beltline I would be much more likely to use a rail based transit than a bus or a bus that looks like a train.

  Thank you,

- Dear MARTA, **(Received 302 Submittals of the Following Letter)**

  I am excited about BeltLine transit in Atlanta. Atlanta needs expanded transit options to help reduce vehicle emissions in an area now ranked with some of the nation's worst air pollution. Along with a rapidly growing population, Atlanta also has one of the longest and most expensive commutes in the country. These problems will only intensify if left unchecked. The BeltLine is a practical solution to this pressing problem and will expand transit options while creating sustainable development within Atlanta's urban core.

  I strongly support rail-based streetcars or light rail as the best mode of transit for the BeltLine. Rail-based electrically powered transit could come from clean, renewable resources and makes more sense from both and environmental and final standpoint. Bus rapid transit would be gasoline powered and emit more pollution into Atlanta's already problematic air, and with the rising cost of oil, it would be counterintuitive financial investment. Additionally, paved bus routes are impermeable and more problematic for runoff and water pollution. A rail system such as street car or light-rail could be the TRUE greenway Atlanta has envisioned with grass running up to and in between the tracks. An environmentally sound greenway is in the best interest of public health for joggers, bikers, and community residents around the BeltLine.

  The BeltLine has energized and captured Atlanta's imagination and it will impact millions of residents and visitors for a long time to come. While bus rapid transit might cost less to build in the short term, rail-based transit is more appropriate for a project which will redefine the way people live, work and play in Atlanta. Our city deserves a world class transit system. Let's keep the BeltLine on track as it was originally envisioned.

  Thanks!

- Dear MARTA,

  We are an international city. We need to think on a global scale. We don't need more emissions! We need more rail transit to more areas of the metro area to ease our traffic and pollution problem.

It is amazing that we have a world class baseball team yet we don't have easy transit to the stadium! This keeps many fans away due to awkward train/bus travel to stadium or the heavy traffic and parking from driving.

Having a rail system would ease travel and bring commerce to other areas of the metro area. Not to mention reducing the stress on the commuter and avoiding high gas prices. IT ONLY MAKES SENSE.

PLEASE VOTE FOR RAIL-BASED TRANSIT!

- Dear MARTA,

Chicago, Washington, D.C. and Toronto have excellent systems, let's have Atlanta now lead the way with rail-based streetcars or light rail as the best mode of transit for the BeltLine. We now have to consider not only the environment, but rising cost of fossil fuels.

I am excited about BeltLine transit in Atlanta. Atlanta needs expanded transit options to help reduce vehicle emissions in an area now ranked with some of the nation's worst air pollution. Along with a rapidly growing population, Atlanta also has one of the longest and most expensive commutes in the country. These problems will only intensify if left unchecked. The BeltLine is a practical solution to these pressing problems and will expand transit options while creating sustainable development within Atlanta's urban core.

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Thanks!

- Dear MARTA,

  I am excited about BeltLine transit in Atlanta. Atlanta needs expanded transit options to help reduce vehicle emissions in an area now ranked with some of the nation's worst air pollution. Along with a rapidly growing population, Atlanta also has one of the longest and most expensive commutes in the country. These problems will only intensify if left unchecked. The BeltLine is a practical solution to these pressing problems and will expand transit options while creating sustainable development within Atlanta's urban core.

  Please allow me a couple points in favor of steel and not rubber:

  Rail adjusts to increased ridership more easily than buses. If ridership increases on a train system, cars can be added to a train without hiring a new operator. If a bus fills up, you need a new bus and pay a new operator to keep up with new ridership.

  At high ridership levels (higher than were used in MARTA's technical study), rail is cheaper to operate per person than bus rapid transit. MARTA's technical staff used low ridership projections to comply with federal and ARC requirements.

  Rail creates a more permanent, tangible, and visible transit route than bus rapid transit. Rail routes are less subject to route changes than bus routes. Therefore developers are more likely to invest money along a rail route than a bus route. The more development, the more riders to help pay operating costs.

  Rail will run on electricity, which will come either from coal, hydro, or nuclear power produced here in the U.S. The buses used in MARTA's projections will run on fossil fuels largely imported from politically unstable portions of the world. Even without political instability, oil is nearing peak production while demand for oil continues to rise. Technology dependent on an increasingly unstable oil supply is not a wise investment.

  The transit line will run alongside multiuse exercise paths. Exhaust fumes from the buses would make the recreation/exercise less pleasant.

  Using a bus means building a road. Although there may be legal constraints on opening Bus Rapid Transit routes to car traffic, nothing prevents car traffic better than not building a road.

  Pavement on the Beltline would create more of a heat island than rails. It would be an impermeable surface with more water runoff than rails.

  Rail is quieter and less polluting than buses. This will be better for people who live and work near the Beltline.

  Rail simply catches people's imagination and inspires better than buses on roads. It sends a message to visitors that the people in our community are willing to invest in the highest quality public transportation. It is a point of pride for the city.

  Thanks!

- Such a phenomenally bad idea that it's boggling that's it's being considered. Will literally kill interest in transit on the Beltline and make the project a laughingstock. A bunch of buses is the future of Atlanta's great initiative???!!!! Show me a poll where people don't say they HATE BUSES.

- Just wanted to my opinion on the Belt Line Project. I live in Grant Park and I think this would be a fantastic addition to transportation potions in Atlanta!

- I am strongly opposed to having the Belt Line use busses and hope the city doesn't go that way because it may be cheapest option initially. As a long-time city resident, I've seen the legacy of always doing things the cheapest way possible – crumbling infrastructure (water and sewer), over head power lines that topple during storms (instead of putting them underground), gridlock traffic (because roads are cheaper to build than rail), and on and on.

  I hope the city does it right this time_ invests in light rail and biking trails for the Belt Line.

- There needs to be a public comment for Beltline/Inner Core Study on the website.

- I am an Atlantic Station resident and wanted to give my comments on the MARTA Beltline meeting. I would much rather prefer the rail transit being implemented for Atlantic Station residents. Matter of fact I am strongly against any other transit system implemented by Marta. This is because the rail is a much smoother and efficient ride compared to any other (e.g., bus, street-car). It would make commute so much easier if the rail system was able to accommodate more people within and outside the perimeter. The traffic would be much less and as a result would cause less accidents and /or pollution. The bus or street-car sort of defeat the purpose of having public transportation system because these methods would have to use the same roads as any other vehicles and will have to go through major traffic during rush hour, or when there's an accident, or for no reason at all when there's just too many cars on the road. Not to mention a bus or street-car would be a slower method of transportation than driving in one's vehicle. Whereas, the rail would be used only for the people commuting on the rail, and for no other reason, making faster, user-friendly, efficient, streamlined, clean, environmentally-friendly, and preferable method for a public transit system. The rail system should be optimized by making it more accessible to the people of Atlanta.

- Please carefully consider all the options for the transit system on the Beltline. Atlanta is a great city, but it is a great city with a very outdated transit system because it has not been able to keep up with the population, nor has the existing transit been able to convince many people to actually use the system. The Beltline is considering using a bus system because it is the least expensive. Please be cautious about trading a cheap short-term solution for a long-term solution that actually uses the rail system that exists and goes away from depending on gas-powered, exhaust-spewing,

pavement dwelling buses. We have too much of all of that in Atlanta and we really need a light rail or trolley system to make the Beltline attractive enough to be a core aspect of improving our great city.

Thank you.

- Please do NOT use buses for the beltline. You must use rail or light rail so people will use it. There are other operational benefits to using rail (cost to operate, number of drivers needed etc.). Please don't make a short-sighted decision or you may doom this promising transit opportunity. Thank you,

- I live in Midtown and am 3 blocks from the proposed beltline. I am looking forward to its positive impact on the City of Atlanta.

  I have been following with great interest the status of the "Locally Preferred Alternative" study and it appears that most Atlanta residents (Myself and all my neighbors that I have discussed this with) desire a rail-based mode of transit.

  The cities that have shifted to this mode, e.g. Portland and San Diego, have become models of what the nation's cities can and should become. (The big Bus cities, such as LA, are the ones that have been looked down on.) I walk the 10 or so blocks to get to the MARTA train station, and I have NEVER walked the 1/2 block from my home to take a MARTA bus. With metro Atlanta topping the list of longest commutes, anything close to tires on pavement should be avoided like the plague. Rail is definitely SMARTA regardless of the cost. As I near retirement, the city I live in will have convenient rail transportation - hopefully it will be Atlanta, but if BRT is adopted, I will be looking at forward looking cities such as Portland and San Diego. Please, let Atlanta become a model city we can be proud of for decades to come, and choose RAIL!

- I have recently heard about he new proposed plans for the beltline. I am a future resident on the home park area and would be interested to see the beltline become a reality. Since it is in the planning stages I wanted to let you know that I support the B4 plan. I feel that it would bring people to the area of home park and be the most convenient plan for getting around town. I just wanted to let you know my thoughts when it comes time for you to make a decision on this project.

- I attended the presentation this evening at North Avenue Presbyterian. Thank you all for the work that has gone into this process. I am writing with my recommendations for the locally preferred alternative, and my reasons for these recommendations:

  Route: B4 (Lindbergh to Arts Center via Inman Park)
  My reasons for this recommendation include:
  - Alignment via Inman Park
    - Alignment via Inman Park will, as described, provide two additional stations (Morningside/Hardee and Kirkwood) as opposed to the alignment via King Memorial (Memorial Drive/Blvd). (I am ignoring the connections to existing MARTA stations, as each alternative includes one.)

- The Morningside/Hardee station would serve the increasingly busy and important Edgewood Retail District (Target, Kroger, Lowe's, Barnes & Noble, etc.).
- Other plans that are likely to be developed serve the same areas targeted by the branch via King Memorial: The east-west line of the Atlanta Streetcar is planned to run down Auburn and/or Edgewood, very near the King Memorial Beltline station; the I-20/Memorial Drive BRT corridor could be configured to have one or more local stops near the planned Memorial Drive/Blvd station. By contrast, no planned development could be modified to serve the Morningside/Hardee and Kirkwood stations if they are not part of the Beltline development.
- The alignment via Inman Park lends itself to expansion into Little Five Points and East Atlanta.

- Alignment via Arts Center
  - The alignment to the Arts Center serves Atlantic Station and the burgeoning restaurant environment along Howell Mill.
  - The only people for whom this alignment would be less convenient would be those who entered the Beltline on the southwest side and whose final destination was Lindbergh. If they entered in the northwest quadrant, they could take the bus to Lindbergh. If the were going to a different station, they could wait for the train as easily at Arts Center as at Lindbergh. I offer that this is a very small portion of the ridership, and that alignment via Arts Center, through Atlantic Station, will be a tremendously more advantageous routing.

  - **Vehicle:** Streetcar
    My reasons for this recommendation include: From a wheelchair access standpoint, trains are friendlier than buses because the wheelchair can roll directly on and the distance from the vehicle to the platform is uniform. My sense of bus rapid transit is that this distance is not necessarily uniform because the driver must gauge the distance visually, and that a ramp would therefore be necessary to bridge the distance. This creates a longer load time and makes the person with a disability an object of attention. From this standpoint, I think **streetcar** or light rail are preferable.

- The Beltline will also be used as parkland, so a technology must be chosen that melds well with a park environment. Light rail is completely unsuitable for this purpose. Bus rapid transit or **streetcar**, however, will suit the park environment.
  I am, by the way, the person who spoke in the meeting about disability access. I understand there are pictures of access to bus rapid transit; I would be very interested in seeing those.

  Thank you again for your time.

- Sirs and Madams:

  I commute daily by MARTA.I favor light rail or trolley rather than bus service for the proposed BeltLine transit system.

  Thank you for your consideration of this matter.

- Dear MARTA,

  I am excited about BeltLine transit in Atlanta. For the importance and impact on public health and economic investment, your decision is critical... and should, by all means, be a unanimous vote for rail transit. Every focus group, NPU, community meeting, AIA meeting, and academic gathering of which I have been a part, voices a desire for rails not more pollution emitting bus routes in our city. The petroleum products used to pave the route alone should be a mitigating factor to BRT line if the buses themselves are not.

  PLEASE:
  Atlanta needs expanded transit options to help reduce vehicle emissions in an area now ranked with some of the nation's worst air pollution. Along with a rapidly growing population, Atlanta also has one of the longest and most expensive commutes in the country. These problems will only intensify if left unchecked. The BeltLine is a practical solution to these pressing problems and will expand transit options while creating sustainable development within Atlanta's urban core.

  I strongly support rail-based streetcars or light rail as the best mode of transit for the BeltLine. Rail-based electrically powered transit could come from clean, renewable resources and makes more sense from both and environmental and financial standpoint.

  Purchasing green blocks of energy from GA Power would set a precedent for residents in the city of Atlanta to follow and would push Atlanta into the forward thinking city that it can become. You are a key part in this. Think beyond instant investment and think of the TRUE INVESTMENT IN OUR FUTURE. We have the TAD and other federal sources for funding available. Let's go for the most sustainable and environmentally friendly option we possibly can... for our children and all future generations. Primarily...bus rapid transit would be gasoline powered most likely and emit more pollution into Atlanta's already problematic air, and with the rising cost of oil, it would be counterintuitive financial investment.

  Additionally, paved bus routes are impermeable and more problematic for runoff and water pollution. A rail system such as street car or light-rail could be the TRUE greenway Atlanta has envisioned with grass running up to and in between the tracks. An environmentally sound greenway is in the best interest of public health for joggers, bikers, and community residents around the BeltLine.

  The BeltLine has energized and captured Atlanta's imagination and it will impact millions of residents and visitors for a long time to come. While bus rapid transit might cost less to build in the short term, rail-based transit is more appropriate for a project which will redefine the way people live, work and play in Atlanta. Our city deserves a world class transit system. Let's keep the BeltLine on track as it was originally envisioned.

- Dear MARTA,

  Finally a plan to help solve part of the unbelievably bad air in Atlanta: The belt line is a wonderful way of starting that process.

  I am a public school teacher and have seen a giant increase in severe asthma attacks by my students. Did you have to do your physical education class outside when the official air index states "unhealthy" and "moderate" for at least six months out of the year? What a crime to sit by idly and not help improve the disgustingly polluted air in Atlanta!

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  Thanks!

- Dear MARTA,

  Thank you so much for your work to establish the Beltline in the Atlanta metropolitan area. It is a very important step in the right direction, and a great coup for our fine city's reputation. Please stick to the original idea for the Beltline, using rail-based streetcars or light rail. Electrically powered transit could come from clean, renewable

resources and makes more sense from both and environmental and financial standpoint. Buses add emissions and roads cause more runoff. Not to mention the increasing cost of fuel! A rail system such as street car or light-rail could make a lovely greenway. That's in the best interest of the entire affected community.

Thanks for considering my input, and again thanks for making this possible!

- Dear MARTA Planners,

  Please consider NOT paving the new Beltline Transit loop. Light rail would be a more attractive and cost-effective option. Plus, studies show more people are likely to ride rail public transit than buses. This is our opportunity to have something totally unique and very cosmopolitan. Please don't ruin the concept with paved streets and fuel-guzzling, polluting buses. You may save a little money at first, but in the long run buses will cost our city much much more.
  Thanks!

- Dear MARTA,

  I support light rail for the Beltway, not buses. Buses contribute to the existing urban blight. Give us something to be proud of, like the San Francisco street cars. And one more thing; think "simple." Don't over engineer it. Create a plan that can come to fruition in much less time than a more complicated plan, and will allow you to adjust if you learn that the initiate plan wasn't perfect.

  Read "The Innovator's Dilemma" if you want to understand why it is CRITICAL that you do it simple and provide room in your budget and in your timeline to go down some paths that don't work out. Plan the first part of this project; don't plan the entire thing, take 10 years to build it, and find out it didn't make sense after all.

  Thanks for listening!

- I don't know if it is true, but I heard that MARTA had decided bus transit was the way to go for the Beltline. I OPPOSE. Please rethink the streetcar or electric trolley. I would personally much rather ride a nice open streetcar than in a bus. Don't do busses!!! currently live in East Atlanta Village, and am about a 3 year total public transit commuter.

- The bus rapid transit (BRT) mistake in Honolulu was costly in terms of time and money. They fell for the same hokey claims put out by BRT promoters, and now, 3 years later, they are planning a belated light rail to correct the error. BRT did not pique the interest of the public, so ridership was low. I, for one, will not give up my vehicle to ride a bus, and I am anxious to see Atlanta get a system as good as the public transport system in poorer eastern European countries. If they can do, we can.

- Dear MARTA,

  Train transit is fundamental to the plan and success of the Beltline! Atlanta already has bus routes running these areas; the city needs a new train transit service!

  I am excited about BeltLine transit in Atlanta. Atlanta needs expanded transit options to help reduce vehicle emissions in an area now ranked with some of the nation's worst air pollution. Along with a rapidly growing population, Atlanta also has one of the longest and most expensive commutes in the country. These problems will only intensify if left unchecked. The BeltLine is a practical solution to these pressing problems and will expand transit options while creating sustainable development within Atlanta's urban core.

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  Thanks!

- To Whom It May Concern,

  I am a 21 year old student at Georgia State and support rail-based transit on the Beltline. I take MARTA trains to/from class everyday of the week and from my experience as a train commuter, I have learned that it is a faster and easier mode of transportation as opposed to a bus.

  Trains operate on their own system whereas buses rely on our road system which can be very congested thus causing delays. I believe that rail-based transit is more modern, convenient, and environmentally friendly than bus-based transit. My family and I are Atlanta natives and I am incredibly enthused about the creation of the Beltline. Through rail-based transit, it is exactly what Atlanta needs to connect our inner city communities and make us the metropolitan capitol of the New South.

- As an Atlanta resident for the past 24 years I am thrilled at the opportunity to have another transit option to relieve our city's severe traffic problems. Although as I understand it the MARTA is leaning towards a BRT system for the proposed Beltline transit system. Please don't let this happen for a plethora of reasons.

  Buses may be cheaper, but have far worse of an environmental impact than rail-based transit. A gas powered bus emits more pollution into the air than electric street cars or light rail systems. The last thing this city needs is another paved road. The environmental impact of paving over the Beltline right-of-way to run a fleet of buses that could spew exhaust is a big concern.

  In addition to trying to address our poor air quality due to an increase in health related problems such as Asthma; we need to reduce our dependence on oil. This dependence is fueling many of our and the worlds problems. Therefore anything we can do to move away from this, such as choosing light rail or streetcars vs. BRT will help people everywhere.

  Take MARTA's own system. Your buses are twice as expensive as trains to operate per rider, and operating costs are what riders and taxpayers will be footing the bill on.

  As for strong ridership, all you need to do is compare ridership on MARTA trains with that of their bus routes. Which they cut back on. Because of poor ridership, a bus-based system is a short-sighted solution that could backfire. People prefer trains over buses. While the cost of fuel could skyrocket by the time the Beltline is built.

  "This emphasis of taking the cheapest short term route to get there is not the way to go for something that's going to define this city for the next 100 years,"not to mention the higher costs (environmental, health, & financial) over the long term.

  The Federal Transit Administration's review process favors projects that promise a cost-effective means of addressing severe traffic problems. Cost efficacy will be realized in the long term by not using a BRT system.

  Rail vehicles last about 25 years, twice as long as buses. MARTA officials said their analysis factored in maintenance costs, though they used current gasoline prices. We all know that it will steadily rise and probably never fall again.

  Modern streetcar: Uses smaller vehicles and has more frequent stops than light rail. More stops will make it more rider friendly thus increasing patronage and funding. This option in my opinion is the way to go. Hopefully I've echoed the sentiment of fellow Atlantans. Thanks for your time and consideration.

September 07, 2006

To The Board of MARTA,

As the co-chair of the Midtown Neighbors' Association Traffic Committee, I've talked traffic with an array of Midtown residents for years. When the Beltline first surfaced as a viable project, I lobbied to have Beltline-associated organizations come speak at our Annual member meeting. Residents have been thrilled with the possibilities of having a PATH with green space come near their homes, and with the dream of a light rail system to help with ever-worsening congestion encircling the neighborhood.

The option of buses elicits an immediate and very strong NEGATIVE REACTION. Residents do not ride the bus as it is, as the existing bus routes do not go where they want to go in a timely fashion, and that the buses are noisy, uncomfortable and do not provide a satisfying commuter ride.

If MARTA's goal is to get folks out of their cars, buses (BRT) will be a financial disaster. More affluent, better traveled in-town residents have ridden rail rapid transit in other cities, have loved the experience, and are expecting to finally have the same high level of service in Atlanta. The possibility of buses is to them a cheap way out, and one they have no interest in patronizing.

If one of the critical problems with the Beltline is the lack of long-term funding for operating the transit component, offering the potential ridership a transportation mode they will not ride will only serve to doom the transit service, and become a self-fulfilling prophesy for the nay-sayers.

September 11, 2006

In my opinion, Atlanta has demonstrated over the last 30 years they will not and do not ride a bus, not even The Loop. Buses are lumbering, lunging, smelly, and bulky. MARTA needs to make the ride attractive, glamorous, an event in and of itself. For example, Michael Robison is not putting rapid buses down Peachtree. He is putting the STREET CAR. MARTA, please wake up, slowdown, and smell the roses for goodness sake. I believe the neighborhoods along the Beltline want the old fashioned streetcar, and that is what will guarantee success.

September 13, 2006

Atlanta's transportation needs more rail and non-gasoline based vehicles.
Don't destroy a great idea for parks and walkable land with buses.

Thanks!