

ATLANTA BELTLINE/
ATLANTA STREETCAR
SYSTEM PLAN

Technical Memorandum 5

Operations and Maintenance Analysis

February 2014



ATLANTA STREETCAR



Atlanta BeltLine/Atlanta Streetcar System Plan Technical Memorandums

Technical Memorandum 1: Planning Process and Phasing Methodology and Results

Technical Memorandum 2a: Market Impact of the Connect Atlanta Plan Transit Projects on the Atlanta BeltLine and Central City

Technical Memorandum 2b: Projection of Tax Increment in the Atlanta BeltLine, Eastside, Westside, and Stadium Neighborhoods Tax Allocation Districts

Technical Memorandum 3: Ridership Modeling Analysis and Results

Technical Memorandum 4: Environmental Justice Analysis

Technical Memorandum 5: Operations and Maintenance Analysis

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1 Introduction

The Atlanta BeltLine/Atlanta Streetcar System Plan (SSP¹) was initiated in February 2011 to develop coordinated approach and action plan for implementing the City of Atlanta's vision for a streetcar network to provide mobility, increase transportation options and support economic development activities as defined by the *Connect Atlanta Plan*, the City's comprehensive transportation plan.

The SSP seeks to accomplish the following objectives:

- 1) Refine and update the streetcar transit element of the City's comprehensive transportation plan;
- 2) Evaluate and integrate the implementation of the streetcar projects defined in the *Connect Atlanta Plan*, the *Concept 3 Regional Transit Plan*, and the *Atlanta BeltLine Corridor Environmental Study Tier 1 Final Environmental Impact Statement (Tier 1 FEIS)*; and
- 3) Develop funding and implementation strategies for priority streetcar projects in the City.

The culmination of this effort is the *Atlanta BeltLine/Atlanta Streetcar System Plan Final Report*, which prioritizes streetcar projects into four implementation phases and details the City's strategy for implementing the streetcar system to achieve the goals of increased transportation options, economic development and mobility throughout the City over the next 20 years.

All future phasing is based upon expansion from the Downtown Streetcar project, the initial segment of the Atlanta Streetcar system. The Downtown Streetcar project will provide an east-west modern streetcar route through Downtown Atlanta to provide circulation and connectivity to existing and planned transit services. This initial phase includes a 2.6-mile alignment currently under construction with revenue service beginning in 2014.

This technical memorandum presents the operations and maintenance of the Atlanta Streetcar near-term expansion corridors as an integrated system and documents opportunities and issues based on segment prioritization and phasing analysis. Section 2 provides proposed streetcar operating plans and associated operations and maintenance (O&M) costs. Section 3 describes an analysis conducted to identify potential maintenance facility areas for near-term priority segments. Finally, Section 4 documents potential bus modification strategies to support integration and implementation of the Atlanta Streetcar system.

¹ The name of the project was changed during the planning process when the study was expanded from the Atlanta BeltLine corridor to include the transit corridors from the Connect Atlanta plan. The original name of the project was Atlanta BeltLine Transit Implementation Strategy (TIS)

2 Streetcar Operating Plans

This section provides details of streetcar operating plans. Section 2.1 provides some general operating assumptions, Section 2.2 describes the near-term priority phasing of streetcar segments, Section 2.3 provides operating plan scenarios for each priority phase and Section 2.4 details the operating characteristics and estimated O&M costs for the Atlanta Streetcar system.

2.1 General Operating Assumptions

General operating assumptions assume a high level of service required to serve the inner core of the Atlanta region. This section outlines operating assumptions including: span of service, service frequency, vehicle capacity/loading standards, vehicle performance, and station dwell times. More detailed operating service plans will eventually need to be developed in future planning efforts for the Atlanta Streetcar system, factoring in ridership potential.

2.1.1 Span of Service & Service Frequency

The span of service for the proposed Atlanta Streetcar system will be comparable to the weekday, Saturday and Sunday and holiday schedules for current MARTA heavy rail service. Service would ideally operate 18 hours a day on weekdays, Saturdays, Sundays and Holidays. Table 1 below, summarizes the assumed span of service.

Streetcars vehicles are planned to run every 10 minutes during peak period, every 15 minutes during midday and weekends, and every 30 minutes during evening hours. Table 1 below, summarizes the streetcar frequency assumptions.

Table 1: Streetcar Span of Service & Service Frequency

DAY OF WEEK	TIME PERIOD	FREQUENCY	HOURS
Weekdays	AM/PM Peak Periods	10 minutes	6:00 a.m. - 9:00 a.m., 3:00 a.m. – 6:00 p.m.
	Midday	15 minutes	9:00 a.m. - 3:00 p.m.
	Evening	30 minutes	6:00 p.m. - 12:00 p.m.
Saturdays, Sundays & Holidays	Base	15 minutes	7:00 a.m.– 7:00 p.m.
	Evening	30 minutes	7:00 p.m. - 1:00 a.m.

2.1.2 Vehicle Capacity and Passenger Load Standards

Four Siemens S70 articulated modern streetcars will be utilized for operations of the Downtown Streetcar project, the first project of the planned system. Compatible vehicles are desirable for future expansion to ensure efficiency of operations and maintenance of the entire Downtown Streetcar system. Based on Siemens S70 technical documentation, the vehicle has a seated capacity of 60

passengers and can accommodate 99 standing passengers comfortably (AW2) and a maximum of 149 standing passengers during crush loads (AW3):

- AW2 is defined as a fully seated load plus a standing passenger load at 4 per square meter of suitable standing space.
- AW3 is defined as a fully seated load plus a standing passenger load at 6 per square meter of suitable standing space.

These vehicle capacities will be used to balance vehicle availability against service demand during peak periods and special events.

2.1.3 Vehicle Performance Characteristics

According to manufacturer specifications for the Siemens S70 modern streetcar, currently in use in Charlotte, North Carolina; Houston, Texas; Salt Lake City, Utah; and San Diego, California, the streetcar is designed to accelerate or decelerate at a maximum rate of 3.0 miles per hour per second (mphps). A normal acceleration/deceleration rate of 2.5 mphps, commonly used by other streetcar operators because it is more comfortable for passengers, has been assumed for regular service.

The streetcar vehicles are designed with capability to achieve a maximum design speed of 66 miles per hour in exclusive right-of-way (105.6 kilometers per hour) and a normal operating speed of 25 miles per hour (40 kilometers per hour) in mixed traffic lanes. Maximum speeds would be limited along sections of the alignment due to horizontal curve restrictions, signalized intersection spacing, interaction with automobiles and civil speed limits for in-street and greenway adjacent operations imposed by the City of Atlanta. Typical average speeds for streetcars in these operating environments are between 7-12 miles per hour. For planning purposes, an average vehicle speed of 8.5 miles per hour (mph) is assumed along mixed traffic street running alignments and 10 miles per hour (mph) for exclusive alignments along the Atlanta BeltLine corridor. These average vehicle speeds are based on similar streetcar applications in urban settings, factoring in streetcar stations proposed to be spaced 1/4 to 1/2 mile apart.

2.2 Streetcar Segment Phasing

The results of *Technical Memorandum 1: Planning Process and Technical Evaluation Methodology and Results* provided the starting point for the detailed analysis and project prioritization phases of the SSP project. Table 2 and

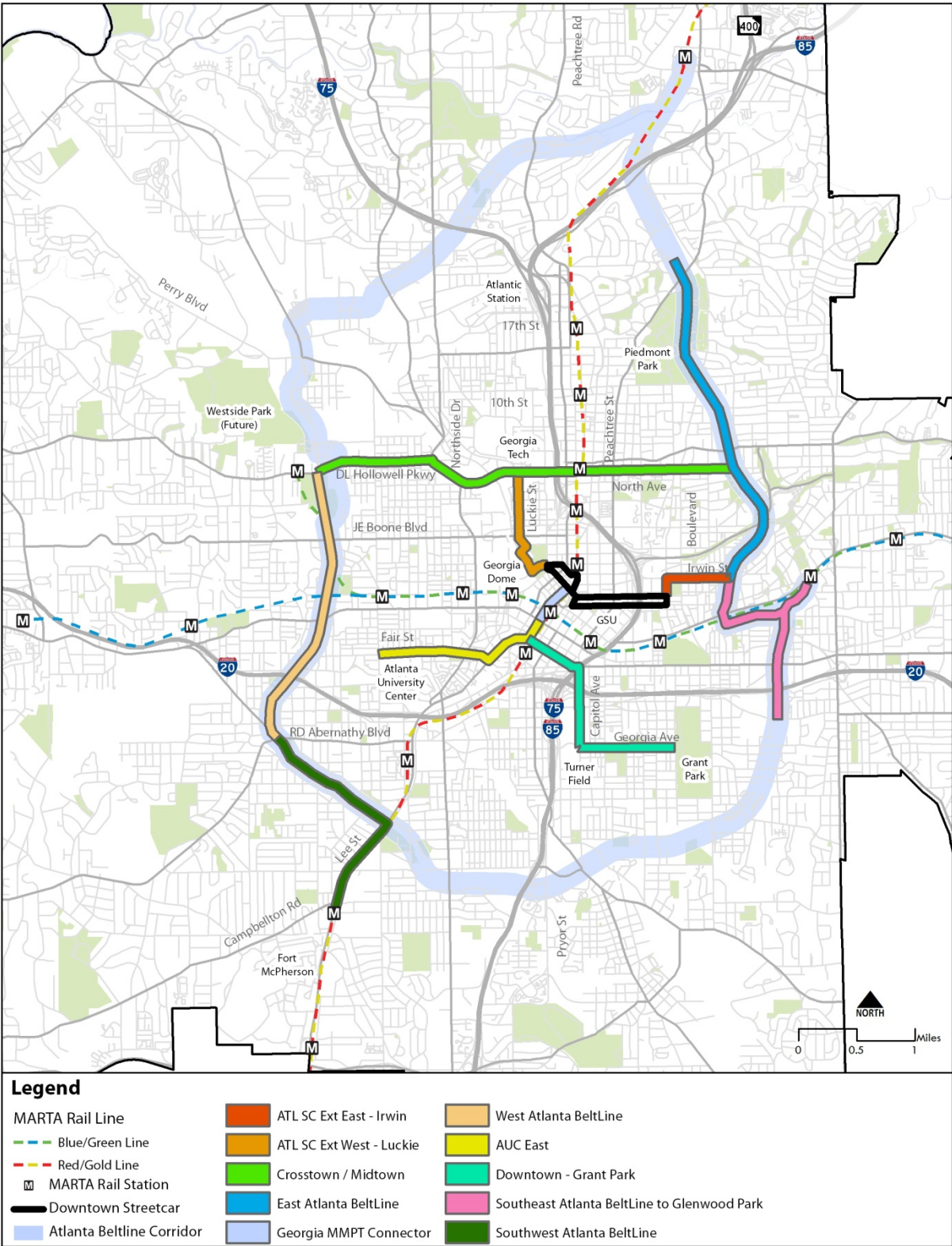
Figure 1 below presents the nine segments identified in the evaluation process as being strong candidates for Phase 1 and Phase 2 near term development. Operating plans were developed in order to identify O&M needs and opportunities as the streetcar segments are developed.

Table 2: Atlanta Streetcar System Segment Phasing

PRIORITY PHASE	SEGMENTS
Phase 1	Downtown Streetcar East Extension - Irwin
	Downtown Streetcar West Extension - Luckie
	Crosstown / Midtown
	East Atlanta BeltLine
	West Atlanta BeltLine
Phase 2	Southeast Atlanta BeltLine to Glenwood Park
	Southwest Atlanta BeltLine
	AUC East
	Downtown / Grant Park



Figure 1: Atlanta Streetcar System Phasing Map (Phase 1 and 2)



2.3 Operating Plan Scenarios

The goal in developing these operating scenarios was to design streetcar lines that offer greater opportunities for a “one-seat ride” to attract riders to use the streetcar system, provide cross-town connectivity between major destinations, and offer seamless transfers between the MARTA bus and rail systems and other planned high-capacity transit projects. An operating level of service of 10-minute peak service, 15-minute off peak and 30-minute evening is recommended at minimum to serve riders boarding the streetcar at any point of the system. For Phase 1 streetcar segments, each operating line is proposed at a service frequency of 10 minute peak and 15 minute base service. As the Atlanta Streetcar system grows into development of Phase 2 streetcar segments, all corridors will need to continue to provide a premium service frequency of 10 minute peak and 15 minute base. This can be achieved by providing a service frequency for individual operating lines of 20 minute peak and 30 minute base and combining two operating lines, resulting in premium service frequency of 10 minute peak and 15 minute base throughout the system. Table 3 provides a summary of operating lines by phase and streetcar segments utilized.

Table 3: Atlanta Streetcar System Operating Lines

PHASING PRIORITIES	STREETCAR LINE	END OF LINE	STREETCAR SEGMENTS
Phase 1	A	RD Abernathy Blvd to MMPT	Downtown Streetcar and Extensions, Crosstown/Midtown, West Atlanta BeltLine
	B	Ansley Mall to MMPT	Downtown Streetcar and Extensions, Crosstown/Midtown, East Atlanta BeltLine
Phase 2	A	Oakland City MARTA Station to Glenwood Park	Crosstown/Midtown; East, Southeast, West and Southwest Atlanta BeltLine
	B	Ansley Mall to Grant Park	Downtown Streetcar and East Extension, Atlanta BeltLine East, Downtown/Grant Park
	C	Oakland City MARTA Station to Grant Park	Downtown Streetcar and West Extension, Crosstown/Midtown, West and Southwest Atlanta BeltLine, Downtown/Grant Park
	D	Atlanta University Center to Ansley Mall	Downtown Streetcar and West Extension, Crosstown/Midtown, Atlanta BeltLine East, AUC East
	E	Atlanta University Center to Glenwood Park	Downtown Streetcar and East Extension, Atlanta BeltLine Southeast, AUC East

Schematics of each operating scenario for the Atlanta Streetcar system were developed for Phase 1 and Phase 2 and are presented in Figure 2 through Figure 3.

Figure 2: Phase 1 Operating Scenario

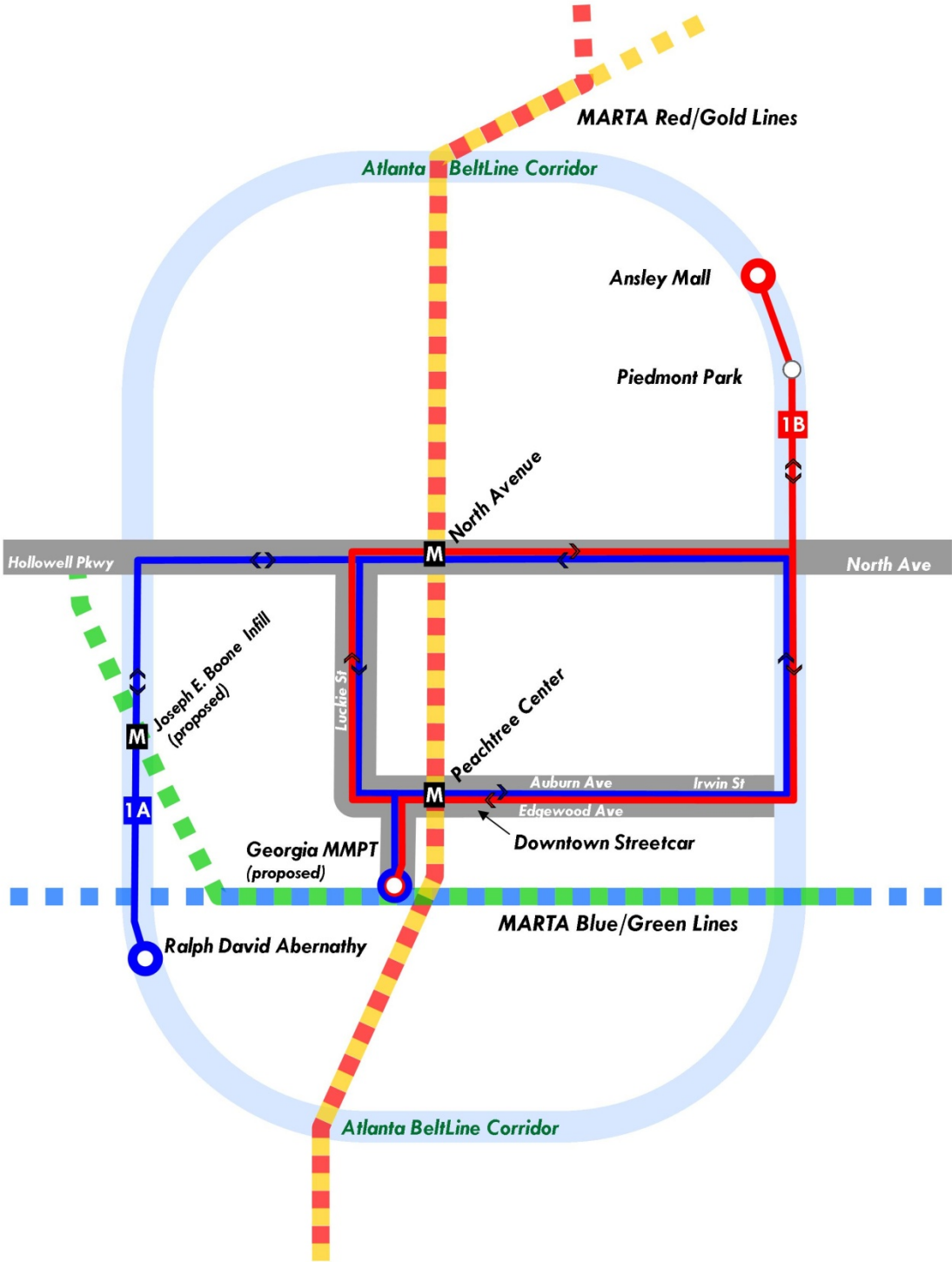
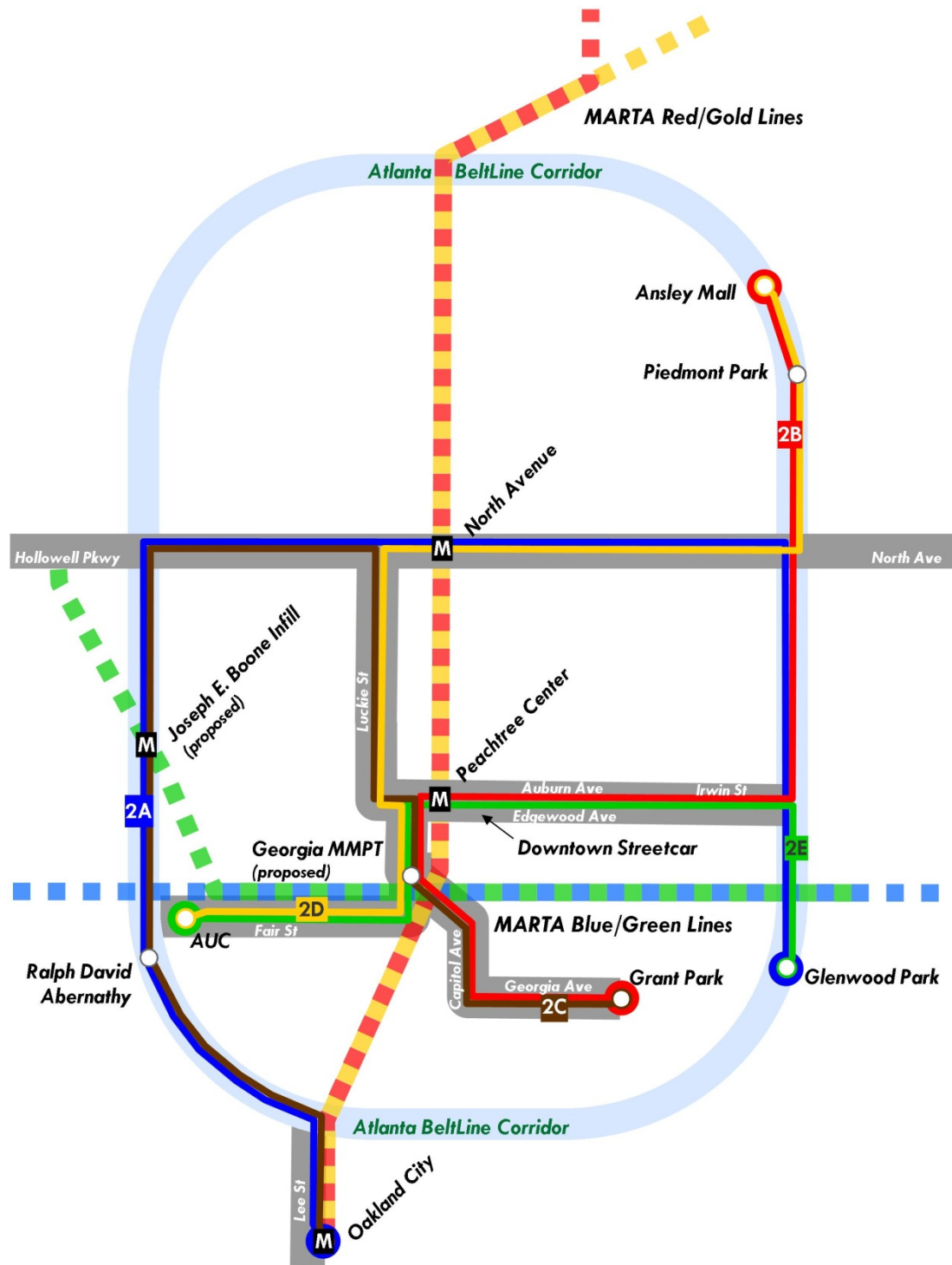


Figure 3: Phase 2 Operating Scenario



2.4 Operating Requirements and Cost Estimates

Operating requirements were determined incorporating general operating assumptions from Section 2.1 and operating scenarios presented in Section 2.3. Annual operating requirements were calculated assuming annual days of operations consisting of 254 weekdays, 52 Saturdays and 59 Sundays/holiday service. Operating plans include time for end-of-line layovers to provide sufficient time for drivers to take breaks, typically required by union agreement, as well as provide for schedule recovery (i.e., a late train can “catch up” to its schedule). Operations plans will include layovers of approximately 15% of estimated one-way run time at each end-of-line station.

Cycle times are an important component used to determine operating requirements for each rail line. The cycle time consists of running time and layover time which must be divisible by the proposed headway, to determine vehicle requirements for each service period. An average streetcar unit cost per hour of \$233.48 (source: Georgia Regional Transportation Authority, 2012) was applied to the estimated annual revenue vehicle-hours, in order to calculate operating and maintenance (O&M) costs in current year 2012. This unit cost reflects average O&M costs for a combination of streetcar and light rail transit (LRT) systems throughout the U.S. Generally, streetcar systems are operated and maintained at a lower cost compared to LRT systems, due to the following differences that drive O&M costs:

- Streetcars operate with a shorter train sets (number of cars per train) to provide for local circulation rather than longer commute trips
- Streetcar stations are designed with a smaller footprint with shorter platforms
- Streetcar maintenance of way (MOW) facilities are smaller due to smaller fleet requirements
- Streetcars average operating speeds are slower with mixed traffic operations and shorter station spacing
- Streetcars require less traction power consumption with shorter trains and slower speeds

A more detailed O&M cost model will need to be developed in future planning efforts for the Atlanta Streetcar system, based on actual operations and cost data from existing streetcar systems. Table 4 through Table 5 provides a summary of detailed operating characteristics with annual revenue vehicle-hours and current year O&M costs.

Table 4: Summary of Operating Requirement (Phase 1)

ROUTE	ROUND-TRIP ROUTE-MILES	ROUND-TRIP RUN TIME (MINUTES)	LAYOVER	CYCLE TIME	VEHICLE REQUIREMENT			ANNUAL REVENUE VEHICLE HOURS	ANNUAL O&M COST (\$2012)
					PEAK	OFF-PEAK	EVENING		
A	14.93	89.6	10.4	100.0	10	7	3	41,800	\$9,759,464
B	8.82	52.9	7.0	60.0	6	4	2	24,950	\$5,825,326
Total	23.75				16	11	5	66,750	\$15,584,790

Table 5: Summary of Operating Requirement (Phase 2)

ROUTE	ROUND-TRIP ROUTE- MILES	ROUND-TRIP RUN TIME (MINUTES)	LAYOVER	CYCLE TIME	VEHICLE REQUIREMENT			ANNUAL REVENUE VEHICLE HOURS	ANNUAL O&M COST (\$2012)
					PEAK	OFF- PEAK	EVENING		
A	22.4	146.3	13.7	160.0	8	5	3	33,040	\$7,714,179
B	14.32	94.8	25.2	120.0	6	4	2	24,950	\$5,825,326
C	20.32	135.7	24.3	160.0	8	5	3	33,040	\$7,714,179
D	14.52	98.6	21.4	120.0	6	4	2	24,950	\$5,825,326
E	11.4	78.7	21.3	100.0	5	3	2	20,570	\$4,802,684
Total	82.96				33	21	12	136,550	\$31,881,694

3 Maintenance Facility Site Locations

This section provides the methodology for determining general site locations of maintenance facilities for the Atlanta Streetcar system. Planning the location and design of operations and maintenance facilities is an integral component of ensuring optimal system operations and efficiency. The facility is required to support planned streetcar operations to be used for midday/overnight storage and vehicle maintenance that would include preventive (scheduled) maintenance, corrective (unscheduled) maintenance, routine cleaning and servicing, and major campaigns to correct component failures.

Many factors of current conditions and future planning efforts have concluded the requirements for identifying a separate streetcar maintenance facility:

- Because the streetcar system is envisioned to operate independently and will use a different rail technology compared to the existing MARTA heavy rail system, opportunities to utilize existing MARTA maintenance facilities are limited.
- The *Atlanta BeltLine Corridor Environmental Study Tier 1 Final Environmental Impact Statement* (Tier 1 FEIS) assumed a single maintenance facility, serving the entire Atlanta BeltLine fleet. The potential location of this facility was identified in the area immediately to the south of the existing MARTA Armour Yard facility near the northern end of the northeast section of the Atlanta BeltLine alignment. This site is approximately 10 to 12 acres, and would have the capacity for approximately 50 vehicles. However, SSP does not follow the plans in the Tier 1 FEIS, and the Atlanta Streetcar system will not connect to the Armour Yard site during Phase 1 or 2.
- The Downtown Streetcar starter line has a maintenance facility location currently being implemented underneath the Interstate 75/85 (Downtown Connector) overpass, between Edgewood Avenue and Auburn Avenue, with a planned capacity for four (4) streetcar vehicles required for this starter line. This facility does not provide an opportunity for future expansion due to site limitations.

For preliminary planning purposes, candidate areas to locate one or more streetcar maintenance facilities were examined with reference to the following site requirements:

- **System Connectivity & Proximity**
The maintenance facilities should be in close proximity (less than 1 mile) of the streetcar alignment, to minimize construction of additional track for non-revenue deadhead operations. A location close to an endpoint of the alignment can help minimize the operational costs associated with deadhead movements. Additionally, the site should be located and support initial phases of service.
- **Sufficient Facility Size**
Operational requirements identified in Section 2.4 include a potential fleet size of 20 streetcar vehicles for the Phase 1 and 40 vehicles for Phase 2 of the Atlanta Streetcar system. This estimate assumes a 20% spare ratio added to the estimated peak vehicle requirement to account for streetcar vehicle spares for service interruptions and maintenance of vehicles.

Using a general industry “rule of thumb” for sizing requirements of 0.2 – 0.3 acres per vehicle, a site and/or combination of sites at a total size ranging from 8 to 12 acres is needed to support the expansion of the Atlanta Streetcar system through Phase 2.

- **Land Use Compatibility**

Typical activities performed at streetcar maintenance facilities include vehicle repairs and maintenance during the day, late night and early morning hours, which is generally incompatible with residential areas. Industrial areas are generally preferred and more suited for this type of facility. Land use compatibility was determined based on current and future land use plans of the City of Atlanta, as well as the Atlanta BeltLine Subarea Master Plans.

Streetcar maintenance facilities are often traditionally sited in areas with industrial land uses. However, streetcar maintenance facilities are being planned and located in non-traditional areas due to reduced availability of industrial properties in redeveloping urbanized areas and the development of maintenance facilities that are smaller in scale and less intrusive on surrounding land uses. Non-traditional approaches to siting streetcar maintenance facilities include locating under transportation infrastructures, such as highway overpasses and bridges. Joint development opportunities are also being considered to help fund the construction of these facilities, which may include placing the streetcar maintenance facility on the ground floor of a parking garage, as well as adjacent to public schools, parks and athletic fields. These facilities can support job creation requiring skilled labor in professional services, engineering, design, construction administration, architecture, and public art, as well as fostering other economic development opportunities. Figure 4 and Figure 5 provide current examples of streetcar maintenance facilities in Seattle and Portland.

Figure 4: Seattle Streetcar Maintenance Facility Adjacent to Residential Neighborhood

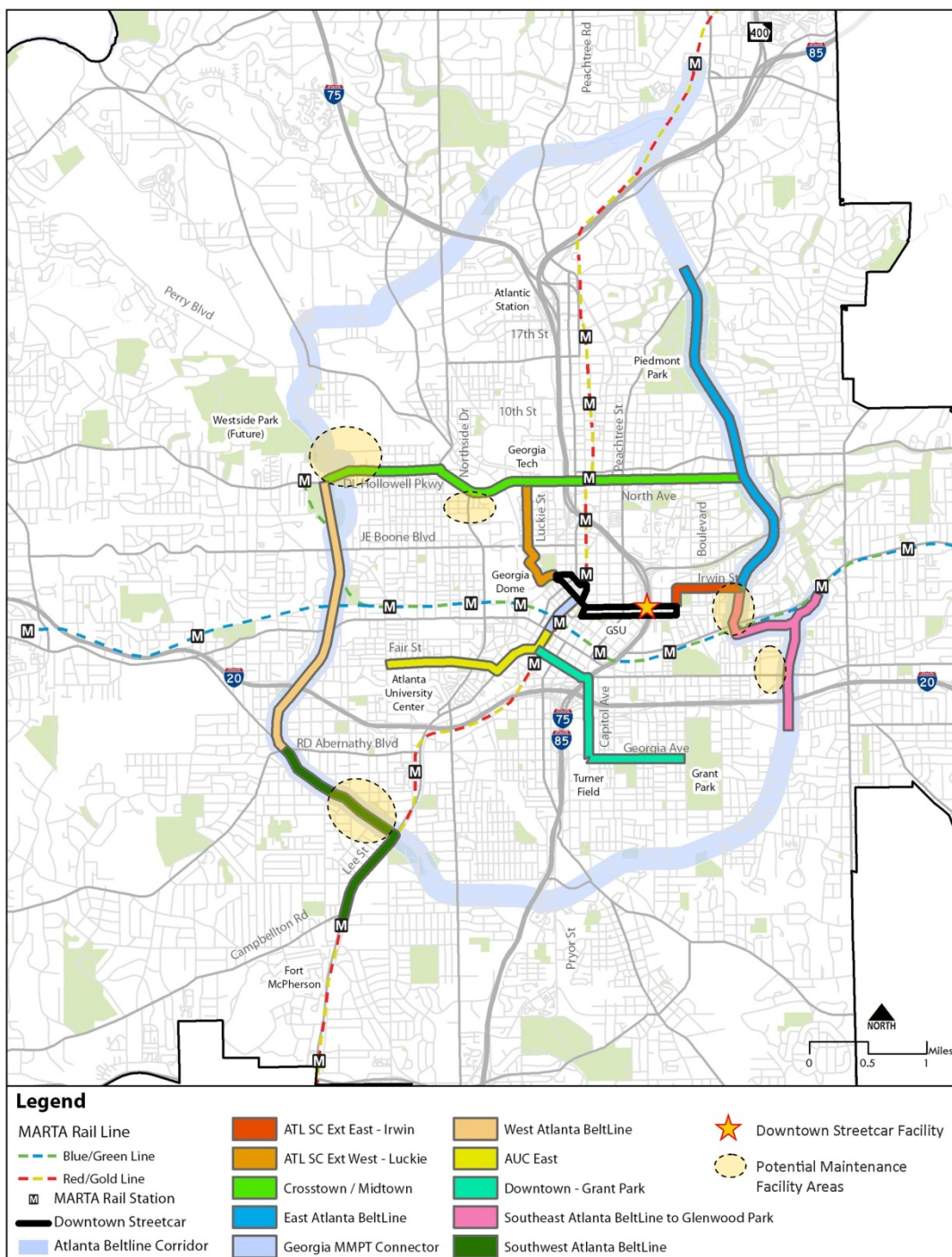


Figure 5: Portland Streetcar Maintenance Facility Underneath Freeway Bridge



Figure 6 displays potential maintenance facility locations considered the most suitable based on these site requirements. More detailed site selection and location analysis in future study efforts should include the consideration of functional layouts and topography for candidate sites, capital cost estimates for site development, property acquisition and environmental impacts.

Figure 6: Potential Areas for Maintenance and Storage Facilities



3.1 Detailed Maintenance Facility Site Sheets

Each of these sites were documented and mapped irrespective of its vacancy, availability, occupancy or identification in an Atlanta BeltLine Subarea Master Plan as another use. More detailed maintenance facility site sheets were developed for each property and presented in the remainder of this document to provide supplemental information for each site.

The following pages provide information for each potential maintenance facility site, including a detailed description, performance based on site selection criteria, map of the site's location, the site's significance within its respective subarea, and advantages and disadvantages of the site.

Table 6: Potential Sites for Maintenance and Storage Facility Inventory

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
1	North Ave. NW & Northside Dr. NW	Adjacent Excellent	4.44 Fair	Commercial/Office Good
2	North Ave. NW & Walnut St. NW	0.15 miles Fair	4.16 Fair	Industrial Good
3	Donald Lee Hollowell Pkwy. NW opposite Finley Ave. NW	Adjacent Excellent	6.70 Good	Industrial Excellent
4	Donald Lee Hollowell Pkwy. NW and Finley Ave. NW	Adjacent Excellent	3.45 Fair	Residential and Industrial Fair
5	Donald Lee Hollowell Pkwy. NW and Marietta Blvd. NW	Adjacent Excellent	6.10 Good	Industrial Good
6	Marietta Blvd. NW and Jefferson St. NW	0.22 miles Fair	16.30 Excellent	Industrial Good
7	Donald Lee Hollowell Pkwy. NW and Gary Ave. NW	0.20 miles Fair	4.18 Fair	Industrial Good
8	876 Joseph E. Lowery Boulevard NW	0.34 miles Fair	8.73 Excellent	Industrial Excellent
9	Mason Turner Rd. NW and Chappell Rd. NW	0.11 miles Good	21.30 Excellent	Industrial Fair
10	Pierce Ave. NW near Donald Lee Hollowell Pkwy NW	0.32 miles Fair	4.83 Good	Residential Fair
11	Irwin St. NE and Krog St. NE	Adjacent Excellent	5.90 Good	Commercial Fair
12	Lake Ave. NE and Krog St. NE	0.04 miles Good	4.32 Fair	Commercial/RLC Fair
13	Krog St. NE and Dekalb Ave. NE	0.23 miles Fair	4.20 Fair	Industrial Fair
14	Memorial Dr. SE and Chester Ave. SE	0.06 miles Good	3.68 Fair	Industrial Good
15	Memorial Dr. SE and Pearl St. SE	0.06 miles Good	10.40 Excellent	Industrial Excellent
16	Old Flat Shoals Rd. SE and Chester Ave. SE	Adjacent Excellent	9.74 Excellent	Industrial Good
17	Glenwood Ave. SE at Bill Kennedy Way	Adjacent Excellent	3.17 Fair	Industrial Fair
18	Sylvan Rd. opposite Warner St. SW	0.03 miles Good	5.49 Good	Industrial Excellent
19	Donnelly Ave. SW and Lawton St. SW	Adjacent Excellent	8.17 Excellent	Industrial Good
20	Lee St. SW and South Ashby St.	Adjacent Excellent	20.60 Excellent	Industrial Excellent

* ACREAGE approximate

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
1	North Ave. NW & Northside Dr. NW	Adjacent Excellent	4.44 Good	Commercial/Office Good



OWNERSHIP/DESCRIPTION: VLP 4 LLC. This site consists of one parcel in a commercial/industrial area along Northside Drive NW. The site is currently available and advertised for office use.

SUBAREA CONTEXT: Site 1 is not located in any of the Atlanta BeltLine Subareas.

ADVANTAGES: The two major advantages of this site are its location adjacent to the Crosstown/Midtown segment and could be utilized to support Phase 1 segments. Also, the property is located in a predominantly industrial/commercial area. In addition, this site is situated near the mid-point of the Crosstown/Midtown segment making it advantageous for access to either end of the alignment.

DISADVANTAGES: This site including the area between North Avenue, Northside Drive, and Ivan Allen Boulevard has been identified for potential development of either a new football stadium for the Atlanta Falcons or a high tech, research and development, life science business park.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
2	North Ave. NW & Walnut St. NW	0.15 miles Fair	4.16 Fair	Industrial Good




OWNERSHIP/DESCRIPTION: Multiple private owners. This site contains 8 parcels all zoned industrial. This site also includes land that appears to be a rail right-of-way.

SUBAREA CONTEXT: Site 2 is not located in any of the Atlanta BeltLine Subareas.

ADVANTAGES: The current zoning of this property is consistent with a maintenance and storage facility and the site is in close proximity of the Crosstown/Midtown segment.

DISADVANTAGES: There are residential properties located on three sides of this site. Also, a rail right-of-way bisects the site, although is inactive.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
3	Donald Lee Hollowell Pkwy. NW opposite Finley Ave. NW	Adjacent Excellent	6.70 Good	Industrial Excellent
				
<p>OWNERSHIP/DESCRIPTION: Multiple private owners. This site consists of one parcel zoned industrial. The property is adjacent to the Crosstown/Midtown segment with the northern border along a rail line.</p>				
<p>SUBAREA CONTEXT: This site is located in the Atlanta BeltLine Subarea 9 – Upper Marietta/Westside Reservoir Park. The Master Plan for this Subarea identifies the property this property low density mixed use.</p>				
<p>ADVANTAGES: The obvious advantage to this site is the proximity to the Crosstown/Midtown and West Atlanta BeltLine streetcar segments.</p>				
<p>DISADVANTAGES: This property is proposed for low density mixed use in the Subarea Master Plan which is not consistent with a maintenance and storage facility. This site would also only support Phase 1 streetcar segments based on size and therefore would require an additional site to accommodate Phase 2 streetcar segments.</p>				

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
4	Donald Lee Hollowell Pkwy. NW and Finley Ave. NW	Adjacent Excellent	3.45 Fair	Residential and Industrial Fair

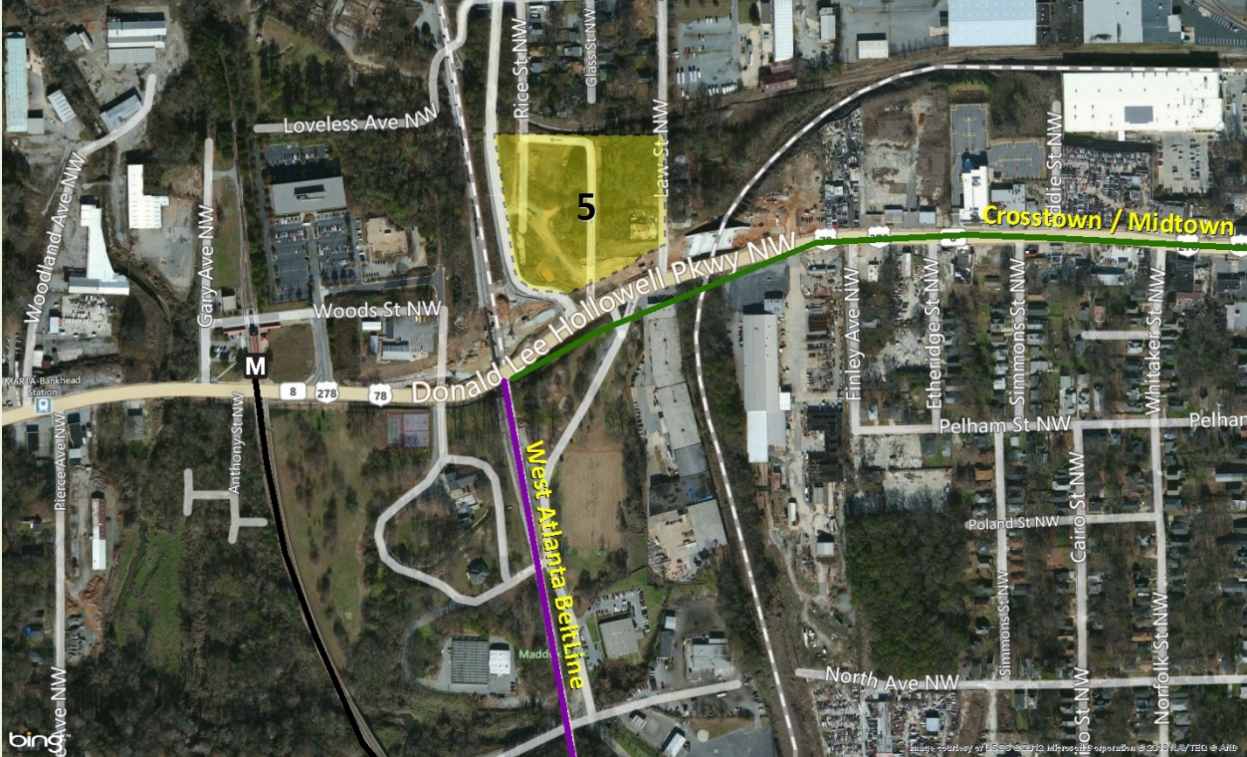


OWNERSHIP/DESCRIPTION: Multiple private owners. This site is comprised on 13 separate parcels in two zoning categories, single family residential and industrial. Some of the properties appeared to be vacant. Adjacent properties to the east and south are residential.

SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 10 – Boone-Hollowell. The master plan identifies the parcels comprising site 4 as residential.

ADVANTAGES: This site has the advantage of being adjacent to the Crosstown/Midtown segment and near the West Atlanta BeltLine segment. In addition, several of the properties that comprise this site are vacant.

DISADVANTAGES: A disadvantage of this site is that it is on the edge of a currently residential area and is proposed for more residential in the Subarea Master Plan. In addition, this site is at the smaller end of the preferred size (at least 4.0 acres) to support Phase 1 streetcar segments and would not accommodate future growth to support Phase 2.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
5	Donald Lee Hollowell Pkwy. NW and Marietta Blvd. NW	Adjacent Excellent	6.10 Good	Industrial Good
 <p>OWNERSHIP/DESCRIPTION: Fulton County/GDOT. This site consists of nine parcels at the intersection of Marietta Boulevard and Hollowell Parkway where the Crosstown/Midtown and West Atlanta Beltline segments meet. Most of the parcels are zoned industrial. The property is vacant.</p> <p>SUBAREA CONTEXT: Site 5 is located in the Atlanta BeltLine Subarea 9 and the properties are recommended to be low density mixed use development.</p> <p>ADVANTAGES: This site has a distinct advantage of being located near the intersection of two streetcar segments. Another advantage is that the property is vacant.</p> <p>DISADVANTAGES: One disadvantage is that this site is proposed to be low density mixed use development in the Atlanta BeltLine Subarea Master Plan which is not a use traditionally conducive to a rail car maintenance and storage facility.</p>				

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
6	Marietta Blvd. NW and Jefferson St. NW	0.22 miles Fair	16.30 Excellent	Industrial Good



OWNERSHIP/DESCRIPTION: Private owner. This site consists of one parcel across a rail right-of-way from the intersection of Jefferson Street NW and Marietta Boulevard NW near the convergence of the Crosstown/Midtown and West Atlanta BeltLine. The properties on this site are zoned industrial.

SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 9 – Upper Marietta Westside Reservoir Park. The master plan identifies the parcels comprising site 6 as medium density mixed use with a band of park space running through the northern portion of the site.

ADVANTAGES: An advantage of this site is its proximity to two Atlanta Streetcar segments. Also, the properties comprising this site are currently zoned industrial which is consistent with a maintenance and storage facility use.

DISADVANTAGES: The planned use of this property is not consistent with a rail maintenance and storage facility.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
7	Donald Lee Hollowell Pkwy. NW and Gary Ave. NW	0.20 miles Fair	4.18 Fair	Industrial Good



OWNERSHIP/DESCRIPTION: Private Owner. This site consists of five parcels at the intersection of Gary Avenue and Hollowell Parkway west of the MARTA Bankhead Rail Station near the location where the Crosstown/Midtown and West Atlanta BeltLine segments meet. Zoning for these parcels is industrial.

SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 9 – Upper Marietta Westside Reservoir Park. The master plan identifies the parcels comprising site 7 as medium density mixed use and park space connecting this site to the Bankhead MARTA Station.

ADVANTAGES: This site is currently zoned industrial which is consistent for a maintenance and storage facility. It is also advantageous that the buildings on this site appear to be vacant. Also, this site is located next to the Bankhead MARTA Station, a property with similar land use.

DISADVANTAGES: The property is bisected by Proctor Creek with about half of it is in the 100 year floodplain and the stream has a 75 foot stream buffer. Site 2-7 is also located across railroad tracks from the Atlanta BeltLine right-of-way and therefore access would be a challenge.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
8	876 Joseph E. Lowery Boulevard NW	0.34 miles Fair	8.73 Excellent	Industrial Excellent



OWNERSHIP/DESCRIPTION: Multiple private owners. This site is located along Joseph Lowery Boulevard near the Crosstown/Midtown segment. This site is comprised of six parcels zoned for industrial use. The majority of the property is vacant. There is a building advertised for lease on the smaller parcel. The streetcar would need to access the site via Joseph E. Lowery Boulevard as the rail right-of-way located on the western-most parcel is utilized by active freight.

SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 9 – Upper Marietta Westside Reservoir Park. The master plan identifies the parcels comprising site 8 as medium density mixed use. Proposed land use for the adjacent properties to the east and west of this site are identified as residential.

ADVANTAGES: One advantage of this site is that the property is primarily vacant and at least one parcel is available. In addition, the current zoning is compatible with a maintenance and storage facility.

DISADVANTAGES: A disadvantage of this site is that the planned use is not conducive to a maintenance and storage facility.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
9	Mason Turner Rd. NW and Chappell Rd. NW	0.11 miles Good	21.30 Excellent	Industrial Fair



OWNERSHIP/DESCRIPTION: Multiple private owners. This site is a conglomeration of parcels bound on two sides by rail right-of-way. One parcel has approximately 100 yards of frontage on North Avenue NW and is zoned for industrial use. Two parcels with a combined 175 yards fronting Mason Turner Road NW are zoned industrial as well. Other parcels or partial parcels making up this site are land-locked by the rail right-of-way and the parcels with street frontage. One of these parcels is zoned industrial and the others appear to be zoned similarly.

SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 10 – Boone-Hollowell. The master plan identifies the parcels comprising site 9 as park space serving as the southern expansion of Maddox Park.

ADVANTAGES: This site has several advantages including being close to the West Atlanta BeltLine segment and being large enough to store and maintain approximately 70 to 105. Another advantage perhaps is that the majority of the property boundaries are adjacent to rail lines and right-of-ways making the site somewhat less desirable for other types of uses and development.

DISADVANTAGES: A disadvantage of this site is that it is slated for park area in the Atlanta BeltLine Subarea Master Plan. Another potential problem is that the adjacent rail lines preclude easy access from the east and south boundaries. This site is located in the Procter Creek flood plain and stream buffer. The site grades are steep, which would affect access.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
10	Pierce Ave. NW near Donald Lee Hollowell Pkwy NW	0.32 miles Fair	4.83 Good	Residential Fair




OWNERSHIP/DESCRIPTION: Private owner. This site consists of two parcels zoned residential. The east boundary of this site abuts property that is also zoned residential and is vacant. The site is close to the MARTA Bankhead Station and rail right-of-way.

SUBAREA CONTEXT: This property is located in Atlanta BeltLine Subarea 10 – Boone-Hollowell. The master plan identifies the parcels comprising site 10 as park space serving as the western expansion of Maddox Park and the Maddox Park North Trail Spur.

ADVANTAGES: This site appears to be vacant and is in reasonable proximity to the West Atlanta BeltLine segment.

DISADVANTAGES: The primary disadvantage to Site 4-2 is that the current residential zoning and the proposed park zoning are not consistent with a maintenance and storage facility. In addition, many of the adjacent properties are residential as well. This site is located in the Procter Creek flood plain and stream buffer.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
11	Irwin St. NE and Krog St. NE	Adjacent Excellent	5.90 Good	Commercial Fair
 <p>OWNERSHIP/DESCRIPTION: Multiple private owners. This site is situated adjacent to the East Atlanta BeltLine segment. It consists of four parcels zoned for commercial use. The largest parcel has a renovated building containing “office lofts” and a restaurant. The northern-most parcel is vacant.</p> <p>SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 5 – Freedom Parkway. The master plan for this subarea identifies this location as mixed use. There are two planned Atlanta BeltLine stops adjacent to this site one located just south of Edgewood Avenue and the other near the intersection of Krog and Irwin.</p> <p>ADVANTAGES: The advantage of this site is the proximity to the intersection of streetcar segments (East Atlanta BeltLine, Downtown Streetcar Extension East – Irwin (or Alternative) and Southeast Atlanta BeltLine).</p> <p>DISADVANTAGES: One disadvantage of this site is that the current and proposed zoning are not consistent with a maintenance and storage facility. Another issue is that it appears to have had some recent development activity and is currently in use. This site located within an historic district.</p>				

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
12	Lake Ave. NE and Krog St. NE	0.04 miles Good	4.32 Fair	Commercial/RLC Fair



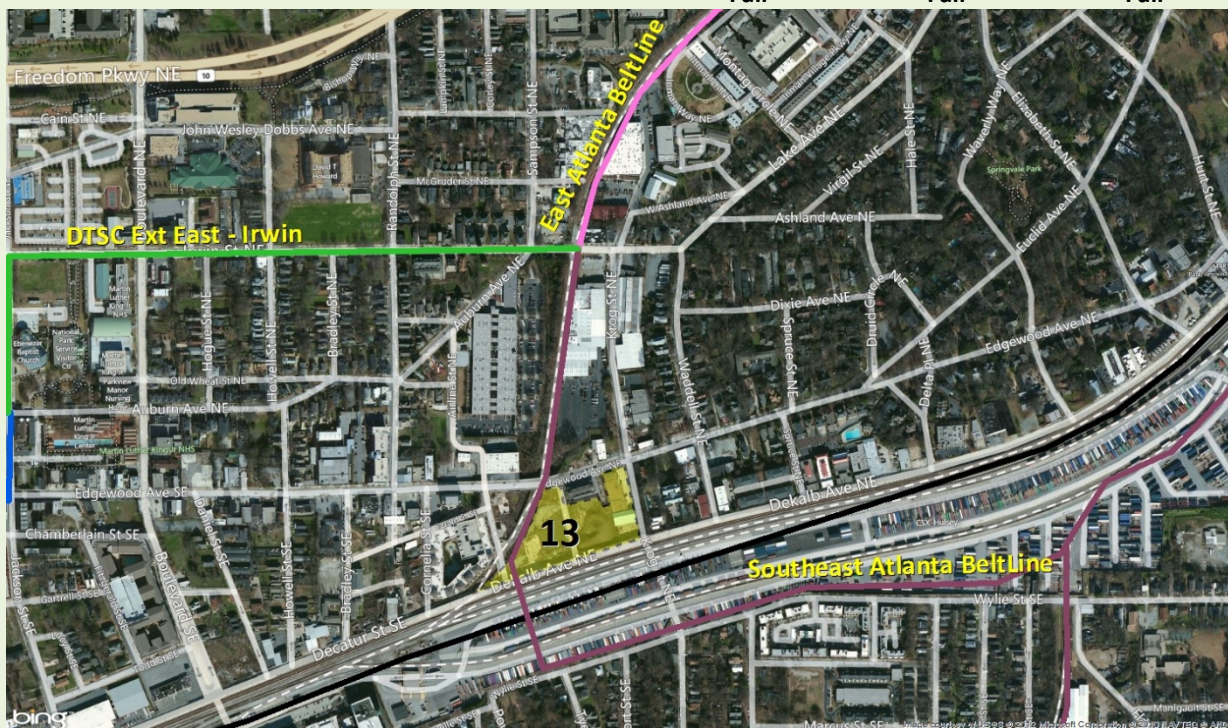
OWNERSHIP/DESCRIPTION: Multiple private owners. This site is bounded by Krog Street NE, Lake Avenue NE, Waddell Street NE and Edgewood Avenue NE, just east of Site 11. It consists of nine parcels with a mix of commercial and residential zoning. The largest parcel contains the Atlanta Stageworks, what appears to be an active business. The northern parcels are vacant parking lots and two of the five parcels along Edgewood Avenue are classified as school use; however historical data back to 1993 shows these two parcels as being vacant.

SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 5 – Freedom Parkway. The master plan for this subarea identifies this location as mixed use. The properties to the west of site 12 are designated as residential.

ADVANTAGES: The advantage of this site is its proximity to the intersection of three streetcar segments (East Atlanta BeltLine, Downtown Streetcar Extension East – Irwin (or Alternative) and Southeast Atlanta BeltLine).

DISADVANTAGES: Two disadvantages of this site are that it is not currently, nor is it planned, to be zoned consistent with a maintenance and storage facility and there is an existing commercial use on the largest parcel. This site currently has an active redevelopment application under review. This site located within an historic district, as well as adjacent to a single-family residential neighborhood and located on a steep slope.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
13	Krog St. NE and Dekalb Ave. NE	0.23 miles Fair	4.20 Fair	Industrial Fair



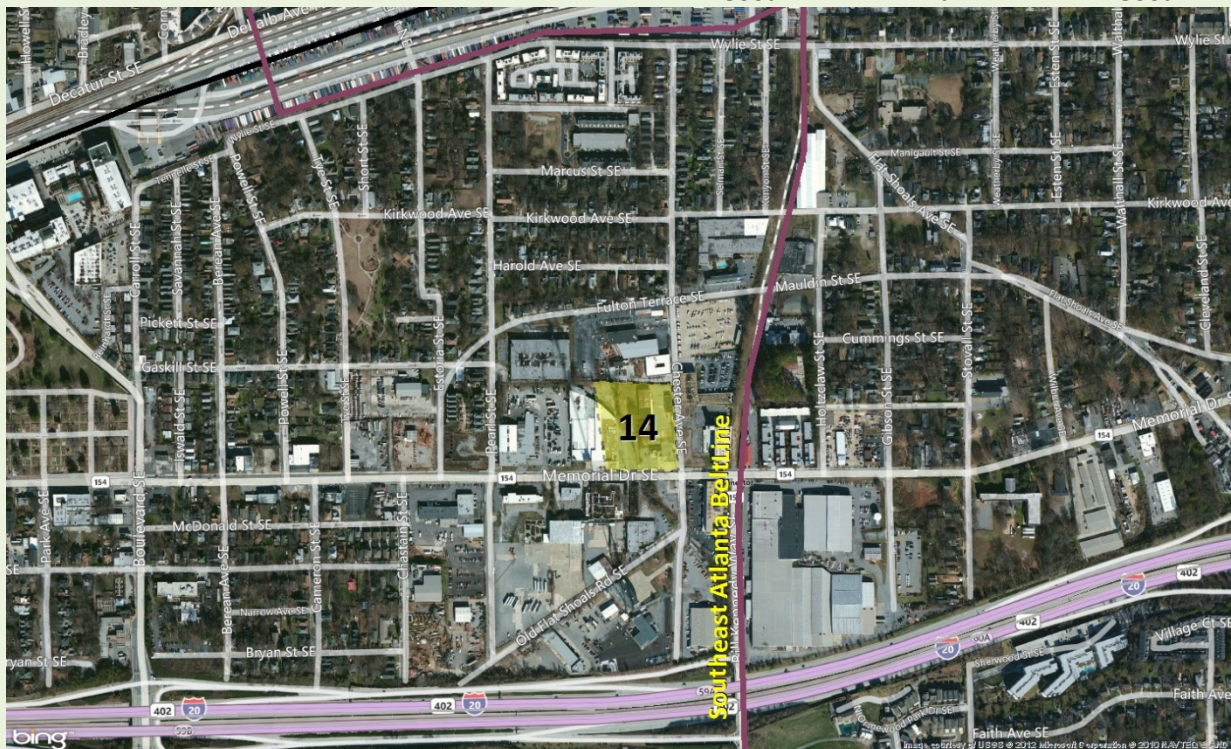
OWNERSHIP/DESCRIPTION: Multiple private owners. This site is bounded by Krog Street NE, Dekalb Avenue, Edgewood Avenue NE and the Southeast Atlanta BeltLine segment is located just south of Site 13. It consists of four parcels and the Gunby Street ROW. Zoning on the site is industrial. The parcel along Krog Street NE contains what appears to be vacant warehouse type buildings. The remaining parcels are vacant and adjacent to a newer commercial building fronting Edgewood Avenue NE.

SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 5 – Freedom Parkway. The master plan for this subarea identifies this location as mixed use and residential. There is a planned Atlanta BeltLine stop along the Southeast Atlanta BeltLine just south of Edgewood Avenue.

ADVANTAGES: The advantages of this site are its proximity to several streetcar segments and the current zoning is consistent with a maintenance and storage facility.

DISADVANTAGES: The disadvantages of site 13 are that it is proposed to be a mixed use and residential area in the Atlanta BeltLine Subarea Master Plan and it is currently adjacent to a residential area to the east. This site located within an historic district.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
14	Memorial Dr. SE and Chester Ave. SE	0.06 miles Good	3.68 Fair	Industrial Good



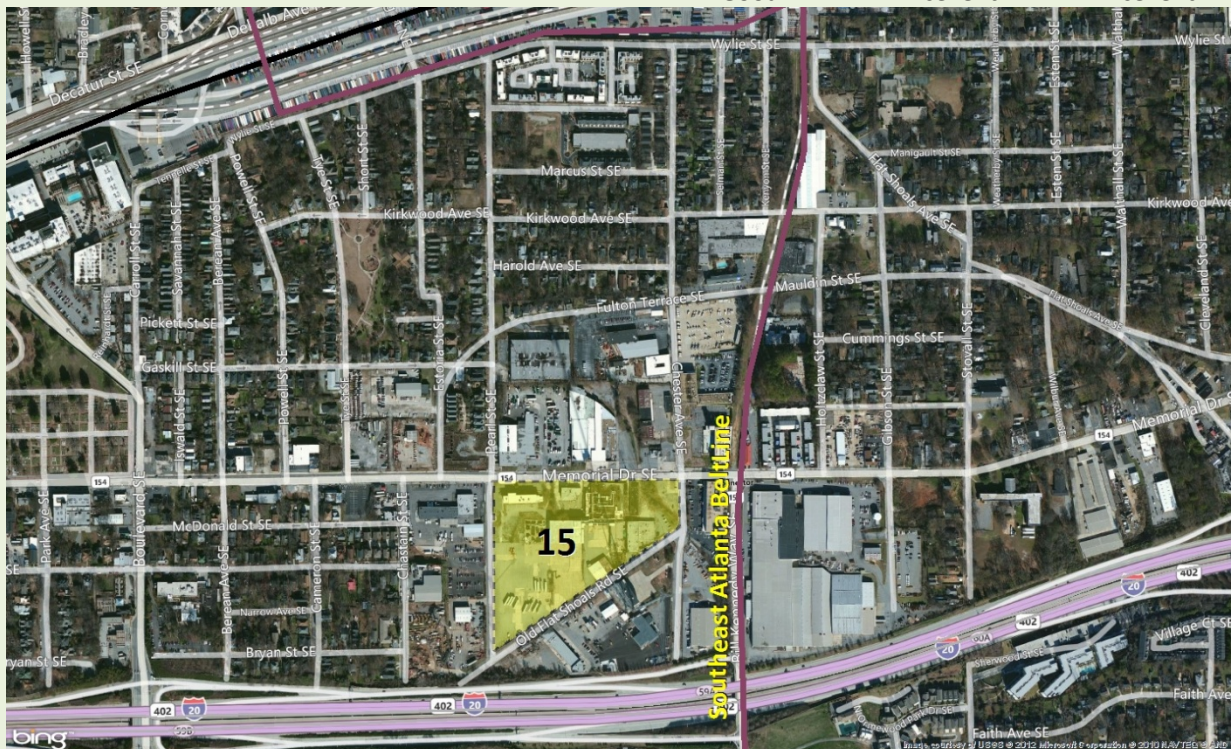
OWNERSHIP/DESCRIPTION: 824 Memorial Drive LLC. There are four parcels that make up this site. The properties are zoned industrial. All buildings on this site are vacant and one is advertised as available. One building appears to have been a service station and another used for vehicle service.

SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 4 – Memorial Glenwood. The master plan for this subarea identifies this site as mixed use. The plan calls for identifying priority storefront space along Memorial Drive between Pearl Street and Chester Avenue to make this area pedestrian oriented. There are planned streetcar stops on Memorial Drive at Pearl Street and Bill Kennedy Way.

ADVANTAGES: This site offers the advantages of being vacant, available and being in very close proximity to the Southeast Atlanta BeltLine segment.

DISADVANTAGES: A disadvantage of this site is that the size is near the minimum threshold of at least 4.0 acres to support the Phase 1 streetcar segments. In addition, the Atlanta BeltLine Subarea Master Plan calls for this site to be mixed use, mid-rise buildings to promote street level retail/commercial development and enhance the pedestrian experience along the Atlanta BeltLine corridor. This site has been identified for use by the Atlanta Habitat for Humanity.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
15	Memorial Dr. SE and Pearl St. SE	0.06 miles Good	10.40 Excellent	Industrial Excellent



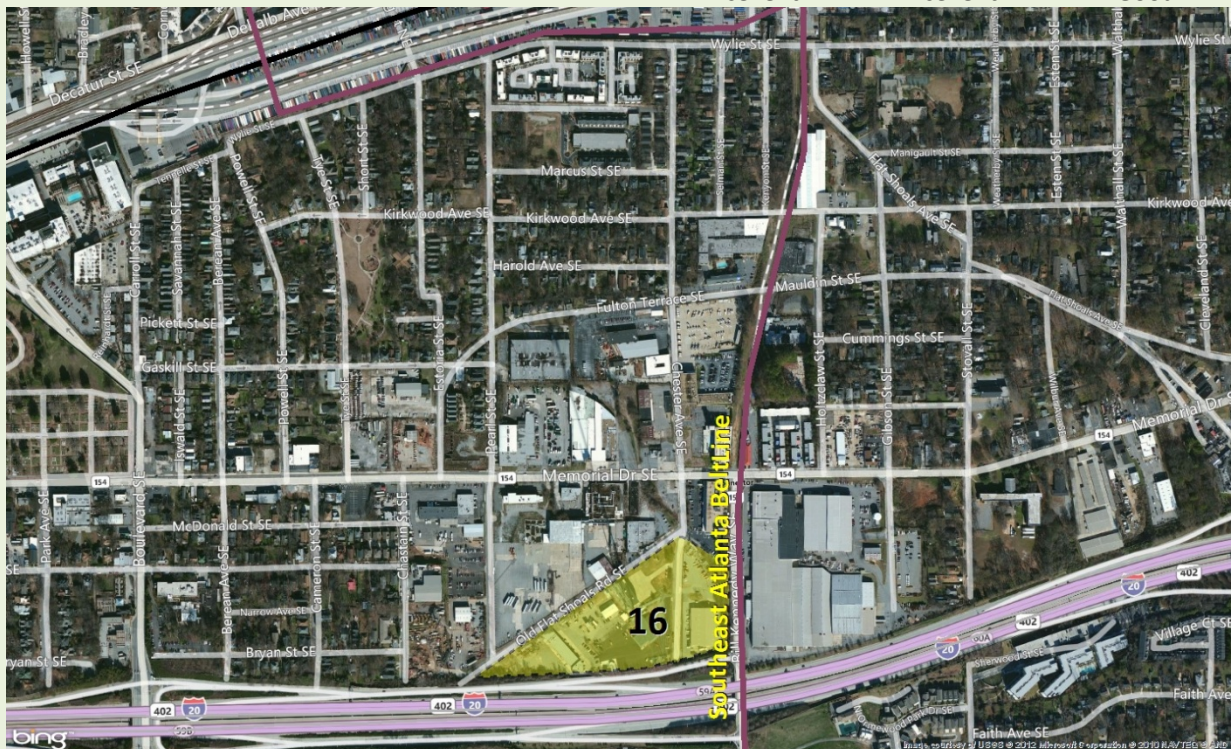
OWNERSHIP/DESCRIPTION: Multiple private owners. There are eight parcels that make up this site. Available zoning information indicates that these properties are zoned industrial. Some of the land is vacant and advertised as available. All buildings on this site appear to be vacant.

SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 4 – Memorial Glenwood. The master plan for this subarea identifies this location as mid to high-rise mixed use and office/institution. The plan calls for identifying priority storefront space along Memorial Drive between Pearl Street and Chester Avenue to make this area pedestrian oriented. There are planned streetcar stops on Memorial Drive at Pearl Street and Bill Kennedy Way.

ADVANTAGES: This site offers the advantages of being vacant, having at least one parcel available, and being in close proximity to the Southeast Atlanta BeltLine segment.

DISADVANTAGES: A disadvantage of this site is that the Subarea Master Plan calls for it to be mixed use, mid and high-rise buildings to promote street level retail/commercial development and enhance the pedestrian experience along the Atlanta BeltLine corridor.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
16	Old Flat Shoals Rd. SE and Chester Ave. SE	Adjacent Excellent	9.74 Excellent	Industrial Good

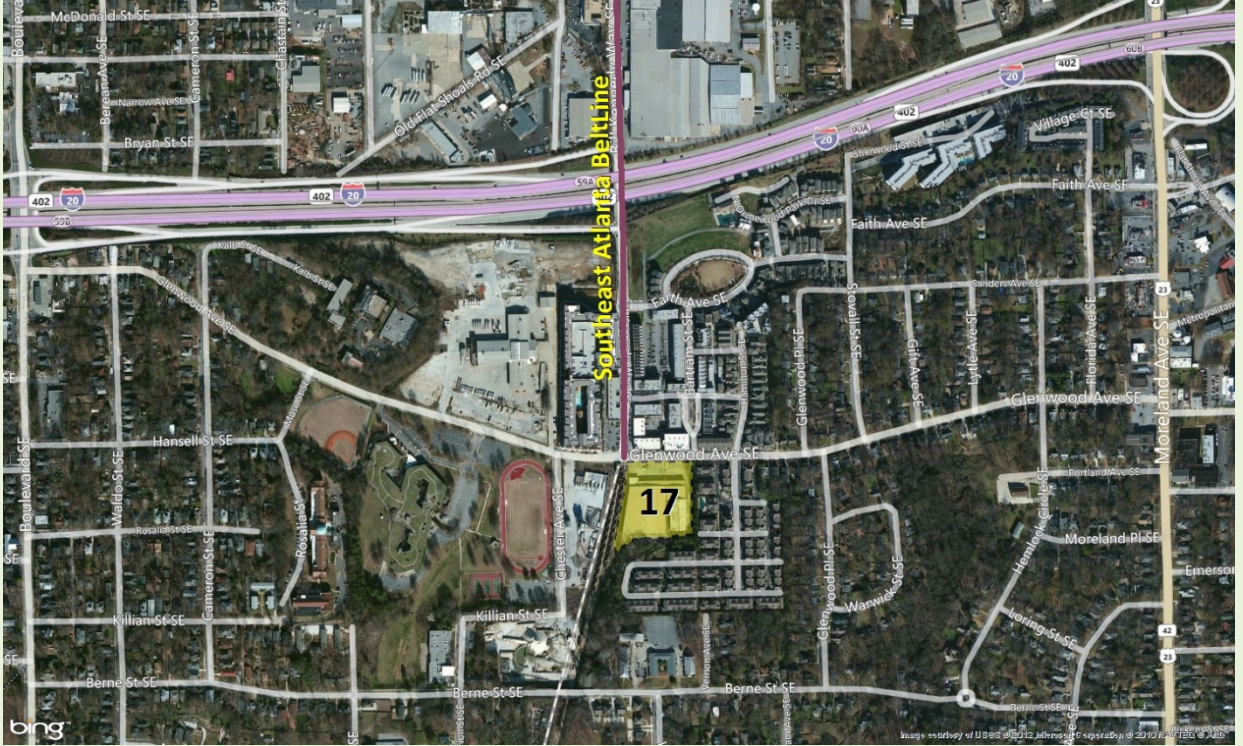


OWNERSHIP/DESCRIPTION: City of Atlanta and Georgia Department of Transportation. There are two parcels that make up this site, both are zoned industrial. The Atlanta Department of Sanitation occupies one parcel and the other parcel houses a few smaller commercial businesses. This site is adjacent to Interstate 20 to the south and Bill Kennedy Way SE.

SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 4 – Memorial Glenwood. The master plan for this subarea identifies these parcels as industrial use which would be appropriate for a maintenance and storage facility.

ADVANTAGES: This site offers the advantages of being consistent with the planned use in the Atlanta BeltLine Subarea Master Plan along with being adjacent to the Southeast Atlanta BeltLine. It is bounded on its longest border by Interstate 20 which would seem to make it a less desirable location for residential or commercial use.

DISADVANTAGES: One disadvantage to this site is that it is currently occupied as an important City of Atlanta services facility used by the Department of Public Works and Parks Department and is very unlikely to move. The Georgia Department of Transportation property east of Chester Avenue is planned for future Bus Rapid Transit service along I-20.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
17	Glenwood Ave. SE at Bill Kennedy Way	Adjacent Excellent	3.17 Fair	Industrial Fair
				
<p>OWNERSHIP/DESCRIPTION: Private owner. This site consists of one parcel zoned industrial. The parcel is adjacent to the Atlanta BeltLine right-of-way at the southern terminus of the Southeast Atlanta BeltLine Segment.</p>				
<p>SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 4 – Memorial Glenwood. The master plan for this subarea identifies this parcel as mixed use low rise development. There is a proposed streetcar stop on the Southeast Atlanta BeltLine at Glenwood and Bill Kennedy, the northwest corner of this property.</p>				
<p>ADVANTAGES: This site has the advantage of being adjacent to the Southeast Atlanta BeltLine segment.</p>				
<p>DISADVANTAGES: One disadvantage of this site is that it is adjacent to a residential development. This site is also at the low end of the size requirements. Using the site for a railcar maintenance and storage facility would be inconsistent with the proposed uses in the Atlanta BeltLine Subarea Master Plan.</p>				

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
18	Sylvan Rd. opposite Warner St. SW	0.03 miles Good	5.49 Good	Industrial Excellent




OWNERSHIP/DESCRIPTION: Multiple private owners. This site consists of two parcels zoned industrial with frontage on Murphy Avenue SW. This parcel is adjacent to a rail right-of-way between Sylvan Road and Murphy Avenue.

SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 2 – Heritage Communities of South Atlanta. The master plan identifies this area as mixed use. The Atlanta BeltLine Subarea plan identifies a few buildings within this site as potentially historic. The plan calls for two stops on the Southwest Atlanta BeltLine segment at or near this site; one near Murphy Avenue and the other at Avon Avenue at Allene Street.

ADVANTAGES: The advantage of this site is that the current zoning would allow for a maintenance and storage facility.

DISADVANTAGES: The disadvantage of this site is the planned use for the property is mixed use development.

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
19	Donnelly Ave. SW and Lawton St. SW	Adjacent Excellent	8.17 Excellent	Industrial Good
				
<p>OWNERSHIP/DESCRIPTION: Multiple private owners. This site consists of three parcels along Donnelly Avenue SW adjacent to the Southwest Atlanta BeltLine segment. All three parcels are zoned industrial.</p> <p>SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 1 – Abernathy-Cascade. The master plan identifies this location as mixed use property. The plan calls for adding several new streets to increase pedestrian access to the Atlanta BeltLine. There is a planned streetcar station at Lawton Street SW.</p> <p>ADVANTAGES: The key advantage of this site is its proximity to the Southwest Atlanta BeltLine segment. Also, the current zoning is consistent with a maintenance and storage facility.</p> <p>DISADVANTAGES: A disadvantage of this site is that the planned use would not accommodate a rail maintenance and storage facility. Also, the plan to build additional cross streets through this site is incompatible with building a facility here.</p>				

SITE #	LOCATION	SYSTEM CONNECTIVITY & PROXIMITY (distance)	SUFFICIENT FACILITY SIZE (acres)*	LAND USE COMPATIBILITY (zoning/use)
20	Lee St. SW and South Ashby St.	Adjacent Excellent	20.60 Excellent	Industrial Excellent



OWNERSHIP/DESCRIPTION: Multiple private owners. This site is comprised of four parcels bounded by Lee Street SW, South Ashby Street, Lawton Street SW and the Southwest Atlanta BeltLine. All four parcels are zoned industrial and there are vacant buildings along White Street/South Ashby across from Rose Circle Park.

SUBAREA CONTEXT: This property is located in the Atlanta BeltLine Subarea 1 – Abernathy-Cascade. The master plan identifies this location as mixed use property. The plan calls for adding several new streets to increase pedestrian access to the Atlanta BeltLine. There is a planned streetcar station at Lawton Street SW.

ADVANTAGES: The advantage of this site is its proximity to the Southwest BeltLine segment. Also, the current zoning is consistent with a maintenance and storage facility.

DISADVANTAGES: The disadvantage of this site is that the planned use would not accommodate a rail maintenance and storage facility and the plan to build additional cross streets through this site is incompatible with building a facility here.

4 Operational Coordination Analysis

In order to continually build transit ridership, minimize service gaps and ensure modal connectivity, Atlanta Streetcar system (Phase 1 and 2) streetcar service should be operationally coordinated with MARTA bus and rail operations. Section 4.1 provides an inventory of existing MARTA rail lines and bus routes that interface with the Atlanta Streetcar system. Section 4.2 offers potential MARTA bus integration strategies that aim to achieve efficiencies with the Atlanta Streetcar system.

4.1 MARTA Bus and Rail Services Inventory

MARTA operates an extensive network of bus and commuter rail transit service throughout the City of Atlanta, Fulton and DeKalb Counties with potential connections to streetcar segments. Table 7 (see below) contains an inventory of intersecting and overlapping MARTA bus and rail service with the initial two phases of the Atlanta Streetcar system. This information is summarized by streetcar segment and includes MARTA bus and rail route information, weekday and weekend service, spans of service during peak and off-peak hours, and the locations where services intersect. Since MARTA service within downtown core is extensive and provides a high level of connectivity to the streetcar system, Table 7 is focused on the Atlanta Streetcar system segments outside of Downtown Atlanta.

Below are a set of observations relative to local transit service connectivity with the planned Atlanta Streetcar Segments in Phase 1 and 2.

- While all segments interface with MARTA at varying levels, the Eastside Streetcar – Piedmont Park segment does not connect with any MARTA heavy rail lines.
- Each Atlanta Streetcar system segment has multiple MARTA bus routes operating along and/or crossing the segment. This ranges from three (3) to seven (7) MARTA bus routes per Atlanta Streetcar system segment.
- The East Atlanta BeltLine segment has the fewest number of interfacing bus routes with three (3) connecting routes on weekdays and two on weekends.
- In general, Atlanta Streetcar system segments that are primarily along the Atlanta BeltLine Corridor right-of-way and not the on-street network are intersected by bus routes that cross the alignment at several points.
- In contrast, Atlanta Streetcar system segments operating on-street have routes that not only intersect bus lines, but parallel or duplicate current MARTA bus routes in certain locations. Examples where bus service is duplicating the streetcar alignment occur on the AUC Streetcar and Downtown/Grant Park Streetcar segments. The West Atlanta BeltLine and Southwest Atlanta BeltLine segments have portions of their alignments adjacent to MARTA rail lines.
- The West Atlanta BeltLine segment could connect to the MARTA Green line if the potential infill station near Joseph E. Boone Boulevard is chosen as the preferred MARTA heavy rail connectivity alternative.
- The Southwest Atlanta BeltLine segment runs along Lee Street from Donnelly Avenue to the MARTA Oakland City Station along the Red/Gold lines.

Table 7: MARTA BUS & Rail Service Inventory

ROUTE #	ROUTE NAME	WEEKDAY SERVICE				SATURDAY SERVICE			SUNDAY SERVICE		
		SERVICE SPAN	SERVICE FREQUENCY			SERVICE SPAN	SERVICE FREQUENCY		SERVICE SPAN	SERVICE FREQUENCY	
			PEAK	OFF-PEAK	EVENING		DAY	EVENING		DAY	EVENING
1	Centennial Olympic Park/Coronet Way	510A-1210A	20 min	35 min	45 min	600A-1215A	45 min	45 min	600A-1215A	45 min	45 min
2	Ponce de Leon Ave/Moreland Ave	505A-1225A	15 min	25 min	30 min	620A-1220A	30 min	30 min	620A-1220A	30 min	35 min
3	Martin Luther King Jr./Auburn Ave.	630A-830P	60 min	60 min	60 min	N/A			N/A		
12	Howell Mill Rd/ Cumberland	520A-1230A	30 min	30 min	30 min	600A-1230A	30 min	30 min	600A-1230A	30 min	30 min
13	Fair St/Mozley Park	500A-1245A	30 min	30 min	60 min	600A-1200A	40 min	40 min	600A-1200A	40 min	40 min
16	Noble	530A-1200A	20 min	30 min	45 min	600A-1200A	50 min	50 min	630A-1115P	50 min	50 min
21	Memorial Drive SE	615A-1230A	20 min	30 min	40 min	635A-1145P	35 min	35 min	635A-1100P	35 min	35 min
26	Perry Blvd/North Ave	510A-1215A	25 min	25 min	40 min	615A-1145A	45 min	45 min	615A-1030P	45 min	45 min
27	Cheshire Bridge Rd/Ansley Mall	520A-1145P	20 min	40 min	40 min	600A-1140P	40 min	40 min	600A-1100P	40 min	40 min
32	Bouldercrest/ Georgia Aquarium	515A-100A	15 min	30 min	30 min	540A-1210A	30 min	30 min	600A-1200A	40 min	40 min
36	North Decatur Road/Virginia Highland	540A-930P	30 min	40 min	40 min	630A-830P	50 min	50 min	630A-830P	50 min	50 min
49	McDonough Blvd	520A-1145P	15 min	25 min	40 min	630A-1130P	40 min	40 min	630A-1130P	40 min	40 min
51	Joseph E. Boone Blvd/Dixie Hills	515A-1215A	20 min	30 min	30 min	615A-1200A	30 min	30 min	615A-1200A	30 min	30 min
55	Jonesboro Rd/ Hutchens Rd	500A-1230A	20 min	30 min	30 min	600A-1220A	45 min	45 min	600A-1210A	45 min	45 min
67	West End	530A-1140P	30 min	50 min	50 min	600A-1120P	50 min	50 min	600A-1120P	50 min	50 min
68	Donnelly/Beecher	600A-1200A	30 min	30 min	60 min	600A-1130P	40 min	60 min	630A-1130P	40 min	60 min
71	Cascade Road	445A-1250A	12 min	20 min	20 min	530A-1230A	20 min	20 min	545A-1230A	30 min	30 min
74	Flat Shoals	530A-1215A	20 min	40 min	40 min	630A-1145P	50 min	50 min	615A-1145P	50 min	50 min
81	Venetian Dr/Adams Park	530A-1145P	30 min	30 min	60 min	600A-1200A	30 min	60 min	600A-1100P	30 min	60 min
99	Boulevard/Monroe Drive	600A-1100P	40 min	40 min	40 min	N/A			N/A		
110	Peachtree St/"The Peach"	550A-1230A	30 min	30 min	30 min	540A-1245A	20 min	20 min	600A-1240A	20 min	20 min
155	Windsor St/Lakewood Ave	520A-1230A	30 min	30 min	30 min	615A-1200A	30 min	30 min	615A-1130P	30 min	30 min
Rail Line	Red	515A-715P	15 min	15 min	15 min	610A-730P	20 min	20 min	610A-730P	20 min	20 min
Rail Line	Gold	500A-130A	15 min	15 min	20 min	615A-130A	20 min	20 min	615A-130A	20 min	20 min
Rail Line	Green	500A-100A	15 min	15 min	20 min	600A-100A	20 min	20 min	600A-100A	20 min	20 min
Rail Line	Blue	500A-140A	15 min	15 min	20 min	615A-140A	20 min	20 min	615A-140A	20 min	20 min

4.2 MARTA Bus Integration Strategies

Upon implementation and build-out of the Atlanta Streetcar system with on-street alignments, there may be opportunities to collaborate with MARTA service planners and modify existing MARTA bus service to optimize transit mobility across the bus and streetcar transit network. By making service adjustments to optimize efficiency and coverage, the changes could potentially reduce network operating costs, increase transit ridership, and provide service improvements for transit users.

Streetcar segments identified with duplicate MARTA bus service on the street include Crosstown/Midtown along North Avenue, AUC East on Peters Street SW and Fair Street, Downtown/Grant Park on Georgia Avenue and Capital Avenue. Potential bus route integration strategies should be identified in more detail for future planning efforts, by achieving the following goals:

- **Promote Operational Efficiencies**

The Atlanta Streetcar system and MARTA bus service should be coordinated to provide transit service that is reliable, on-schedule and delivered in the most efficient manner. By coordinating services, any bus routes and streetcar lines that overlap should be designed to complement each other and not result in competitive, redundant service.

- **Achieve Cost Effective Service**

Coordination with MARTA can reduce redundant services to better maximize available operating resources and respond to financial constraints. Opportunities may become available to reallocate resources from any repetitive MARTA bus service identified along proposed Atlanta Streetcar lines to other underserved areas in the transit system.

- **Optimize Ridership Potential**

The coordination of services should provide a level of transit service that responds to ridership demand. Strategies could include designing bus feeder routes to the Atlanta Streetcar system or designing limited stop bus service that overlaps Atlanta Streetcar service on the same corridor. New riders can be attracted if the two transit modes are seamlessly connected between desired origins and destinations throughout the region.

- **Ensure Customer Focused Service**

Atlanta Streetcar and MARTA bus services will meet existing and future travel needs by retaining existing MARTA customers and attracting new customers to the coordinated transit systems. The combination of local bus with expanded fixed road transit service will provide greater opportunities to serve transit customers.