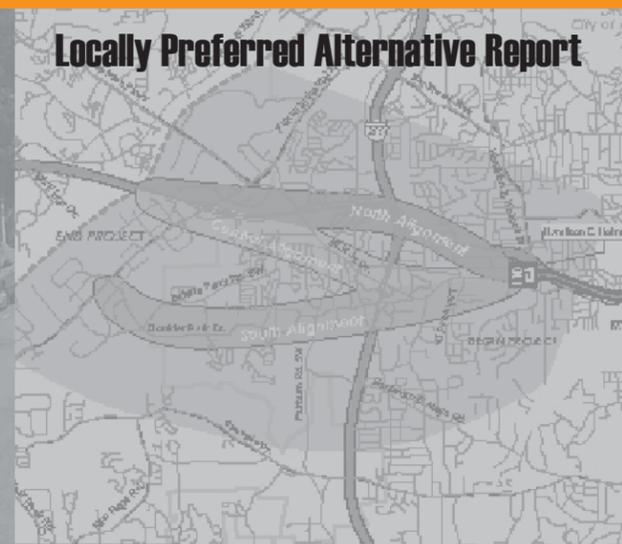




CHAPTER NINE: ALTERNATIVES ANALYSIS RESULTS AND RECOMMENDATIONS



CHAPTER NINE: ALTERNATIVES ANALYSIS RESULTS AND RECOMMENDATIONS



During the course of the MARTA West Line Alternatives Analysis, an additional alternative was identified based on public input concerning the results of the evaluation of the original alternative set developed for consideration. The public was unable to develop consensus around the original alternative set, because alternatives with the most benefits to the business community and highest ridership tended to have environmental and community impacts that were unacceptable to neighborhoods. This was due largely to the geography of the study area, which would require any transit extension to the Fulton Industrial Boulevard Business District (FIBBD), on the western edge of the study area, to traverse a large band of established residential neighborhoods. Furthermore, the residential neighborhoods, transit riders and the FIBBD did not have a shared identity that would have promoted major concessions on either side of the debate. Based on this input and the results of the evaluation, an additional alternative was developed that balanced the concerns of the business community and existing riders with those of the residential neighborhoods. The combined alternative brought together elements of the 2 alternatives that performed best from the original alternative set: BRT 1a and HRT 3. The resulting alternative, known as the Combined Alternative in the evaluation, is a dual mode alternative that would extend transit in 2 separate alignments within the study area combining aspects of the 2 highest rated alternatives from the technical evaluation, which were BRT 1a and HRT 3:

BRT 1a – includes a bus rapid transit system that uses the I-20 HOV lanes between the Hamilton E. Holmes station and Fulton Industrial Boulevard. Bus-only access ramps are assumed at Hamilton E. Holmes Drive as a part of the project. The BRT would also use HOV access ramps (constructed by GDOT) just west of Fulton Industrial Boulevard. The alternative also includes an additional bus-only interchange and proposed BRT station at I-20 and MLK Jr. Drive.

HRT 3 –includes a heavy rail extension with an alignment between the CSX railroad and MLK Jr. Drive to I-285, and then generally along the north side of MLK Jr. Dr. to I-20. The alignment then turns west and follows along the south side of I-20 to the end-of-line station west of Fulton Industrial Boulevard. This alternative includes a intermediate station proposed at MLK Jr. Drive/I-285. Note: As outlined in the next section, the Combined Alternative only includes the portion of HRT 3 east of I-285.

In short, the Combined Alternative was developed to address the study need and purpose in a manner that closely reflected public input into the evaluation process. Its performance in the evaluation process led to the Combined Alternative's selection by the MARTA Board as the LPA.

9.1 Identification of Combined Alternative

As described above during the evaluation process the Combined Alternative was defined, incorporating many of the features of the best performing BRT and HRT alternatives. An extension of heavy rail is proposed from the Hamilton E. Holmes Station along the alignment of HRT Alternative 3, but only as far as I-285, where the facility would terminate. The Fulton Industrial Boulevard Business District (FIBBD) would be served by implementing BRT service in the planned I-20 HOV system, similar to BRT 1a. Both elements are depicted in Figure 9.1.

9.1.1 BRT Elements

As in BRT Alternative 1a, the Combination Alternative would have BRT service using the proposed HOV lanes along I-20. An end-of-line station would be located just west of the I-20/Fulton Industrial Boulevard interchange, in conjunction with HOV access ramps, as depicted previously in Figure 9.1. An intermediate station would be located at proposed new HOV access ramps at MLK Jr. Drive and I-20. HOV access ramps would also be constructed at Hamilton E. Holmes Drive, for access to/from the Hamilton E. Holmes Station (see Figure 3.4 in Section 3).

Bus routes would be modified to take advantage of the faster speeds and higher reliability of the HOV lanes. Bus routes serving the FIBBD and portions of Cobb and Douglas counties would utilize the BRT facility, thus avoiding an extra transfer between local and line haul service. Some, but not all, routes would make an intermediate stop at the I-20/MLK Jr. Drive Station. Most bus routes would terminate at the Hamilton E. Holmes Station, but there are some routes proposed to continue to downtown Atlanta. Signal priority improvements for enhanced bus service along Fulton Industrial Boulevard is also included in this alternative. Table 9.1 lists routes that would use the BRT/HOV facilities and more details are available in the Transit Operations Plan Report. Table 9.2 lists routes that would service rail stations.

9.1.2 HRT Elements

The rail line extension originates from the existing tail track west of Hamilton E. Holmes Station, with the proposed alignment running between the CSX freight tracks and MLK Jr. Drive. It ascends to cross over Linkwood Drive, and continues on retained fill within a right-of-way between the CSX and MLK Jr. Drive. It then crosses over the CSX near where the railroad crosses over MLK Jr. Drive. An elevated station would be sited on the north side of MLK Jr. Drive just east of I-285. The station would be located just south of the new Adamsville Recreation Center. Parking would likely be located in the triangular area south of MLK Jr. Drive and north of the CSX tracks, with easy access from the I-285 interchange. West of the station, the elevated line continues over I-285 to provide adequate tail tracks. The line is designed to allow for possible future extension along the alignment described above for HRT 3.

The estimated run time from Hamilton E. Holmes Station to the I-285 Station is less than 3 minutes (approximately 1.5 mile distance). This extension will require 1 additional train set over the TSM Alternative.

Many bus routes would be modified in order to feed into the closest rail station. Detailed maps and tables are included in the Transit Operations Plan Report. The following table shows these routes and the proposed station termini. The service areas covered by most routes would be consistent with the TSM Alternative and changes in feeder bus operating cost resulting from these routing changes are reflected in the estimated cost for the Combined Alternative.



FIGURE 9.1
COMBINED ALTERNATIVE
 (PAGE 1 OF 2)





FIGURE 9.1
COMBINED ALTERNATIVE
 (PAGE 2 OF 2)



- · — MARTA BRT Operating in HOV Lanes
- · — MARTA HRT Project Limits
- GDOT Project Limit
- Potential BRT Station Platforms
- Potential HRT Station Platforms



Table 9.1 : Bus Service on BRT Facilities - Combined Alternative

Station	Bus Route	Peak Headway	Notes
Routes Serving Fulton Industrial Blvd. BRT Station			
M-73A	Holmes-FIB/Patton via MLK	7.5	via MLK Dr. to Holmes Sta.
M-73B	FIB to Great SW	15	via I-20 HOV to Holmes Sta.
M-73C	FIB to Boat Rock	30	via I-20 HOV to Holmes Sta.
M-73D	FIB to Westgate	30	via I-20 HOV to Holmes Sta.
M-162	Wendell Drive	30	End-of-Line
CO-216	West Cobb	30	via I-20 HOV to Holmes Sta.
CO-217	W. Cobb Parkway/Floyd Rd.	30	via I-20 HOV to Holmes Sta.
DO-150	Douglasville local	20	End-of-Line
GR 462	Douglasville express	60	via I-20 HOV to Holmes Sta.
GR 470B	Douglasville express	60	via I-20 HOV to Holmes Sta.
Other Routes Using I-20 HOV lanes:			
M-201	Six Flags	seasonal	Holmes Sta.
CO-70	Holmes - Cumberland	60	Holmes Sta.
GR 460	Douglasville MMC express	30	downtown
GR 461	Douglasville/Hwy 5 express	30	downtown
GR 470A	Paulding/Hwy. 6 express	30	downtown
Routes Serving I-20/MLK Drive BRT Station			
M-57	Collier Heights	15	via MLK Dr., Bolton Rd.
M-73A	Holmes-FIB/Patton via MLK	7.5	via MLK Dr.
M-162	Wendell Drive	30	via MLK Dr., Bolton Rd.
M-73B,C,D	Fulton Industrial	7.5	via I-20 HOV
CO209	Cumberland/Fulton Ind.	20	via I-20 HOV to Holmes Sta.

M = MARTA CO = Cobb Community Transit (CCT) DO = Douglas County GR = Georgia Regional Transportation Authority

Table 9.2 : Bus Service at Rail Stations - Combined Alternative

Station	Bus Route	Peak Headway
MLK Drive/I-285 Station		
M-56	Adamsville	15/30
M-66	Lynhurst-Greenbriar	30
M-73A	Holmes-FIB/Patton via MLK	7.5
M-160	Boulder Park	30
M-161	Bakers Ferry Road	30
M-164	Kimberly - Country Squire	30
M-165	SW Community Hospital	20
M-170	Brownlee - Ben Hill	30
Hamilton E. Holmes Station (see also BRT routes; excludes routes from east of study area)		
M-56	Adamsville	30
M-57	Collier Heights	15
M-73A	Holmes-FIB/Patton via MLK	7.5
M-162	Wendell Drive	30
M-170	Brownlee - Ben Hill	30

9.2 Results of Technical Evaluation

Once the Combined Alternative was established as a new alternative, it was introduced into the Detailed Evaluation with the other alternatives. To simplify the presentation of evaluation results and

subsequent discussions on the alternatives, the information presented in this section is limited to the Combined Alternative and the highest scoring BRT and HRT only alternatives in each corridor. Alternatives in the Northern Corridor are represented by BRT 1a, which includes an intermediate station at MLK Jr. Drive/I-20 and HRT 1, which includes the same intermediate station site and aerial heavy rail structure through the Delmar-Westhaven neighborhood. Central Corridor alternatives were represented by BRT 3a, which includes median bus lane operations with stations at MLK Jr. Drive/I-285, Fairburn Rd., MLK Jr. Drive/I-20 and Fulton Industrial Boulevard/I-20 and HRT 3, a heavy rail alignment along the north side of MLK Jr. Drive with an intermediate station at MLK Jr. Drive/I-285.

Fully detailed matrices showing all of the alternatives evaluated are included in Chapters 4-7. The rating method for the Detailed Screening was a 6-step process designed to weight each goal equally in the evaluation as summarized below:

- **Step 1** – For each goal a series of evaluation criteria were developed that reflected the objectives associated with that goal.
- **Step 2** – A set of performance measures was established for each evaluation criterion that would provide a good basis for assessing the alternatives. The number of performance measures per evaluation criterion varied from 2 to 6.
- **Step 3** – Performance measure values were calculated for each alternative and then rated (Very Desirable = 3, Desirable = 1, Less Desirable = -1) based on a quantitative and qualitative comparison of the range of values calculated across the alternatives. The process for assigning a performance measure ratings is described in more detail in the Chapters 4-7, which describes the detailed evaluations comprehensively.
- **Step 4** – The ratings generated across performance measures were summed to create a single composite score for each alternative for each Evaluation Criterion. The composite scores were then rated (Very Desirable = 3, Desirable = 1, Less Desirable = -1) based on range of scores across the alternatives.
- **Step 5** – An overall score for each goal was then calculated by summing the composite scores for the evaluation criteria. Each goal was then rated again based on the range of the overall scores across alternatives.
- **Step 6** – Finally, the ratings for overall score for each goal were summed into an alternative final score for each alternative. The alternative final score was the basis for comparing alternatives holistically, to assess their ability to address the project need and purpose. This method removes any bias across goals and evaluation criteria, meaning that each goal and criterion will affect the alternative final score equally.

9.2.1 Mobility and Accessibility

The evaluation criteria associated with the goal of improving mobility and accessibility test an alternative's ability to improve the transportation system's effectiveness and efficiency. They ask the

questions - Is the transportation system serving more people? Are trips faster or more convenient? Is congestion reduced? Some of the answers are transit specific, but the over-arching goal is to improve all trip making in the system regardless of mode. The mobility and accessibility evaluation matrix shown as Table 9.3 indicates how the alternatives compared to one another using the mobility criteria.

The HRT only alternatives and the Combined Alternative outperformed all the BRT only alternatives and were given Very Desirable ratings across the mobility and accessibility evaluation criteria. The Combined Alternative rated highest among the alternatives, since it had higher accessibility ratings than HRT only alternatives while scoring well in terms of new ridership and travel time improvements. The Combined Alternative and BRT 3a were the only alternatives in the final evaluation with 3 stations, thus walk access from residential areas (including low income) and employment was naturally higher. The HRT only alternatives had high ratings in all mobility evaluations. The HRT alternatives generally travel at higher speeds than some of the BRT alternatives and require fewer transfers. For these reasons, the HRT alternatives improve mobility and accessibility more than the BRT alternatives. The HRT alternatives provided results that showed a reduction in travel time, an increase in new riders, and an increase in the number of jobs accessible by transit when compared to the BRT alternatives.

BRT 1a had the highest mobility evaluation rating of any of the BRT only alternatives and received a Desirable rating. This alternative operates on the I-20 HOV lanes with an intermediate station at I-20/MLK Jr. Drive. Operating on the HOV lanes allows for faster travel times than the Central Corridor alternatives and also results in more new transit riders. The intermediate stop at MLK Jr. Drive provides the necessary transit access to maintain the higher overall rating among the BRT alternatives. The BRT 1a alternative also received high ratings for improving travel efficiency and reducing congestion within the study area.

BRT 3a was designated a rating of Less Desirable. The Central Corridor BRT alternatives actually scored higher in the access to transit measures due to the increased number of stations along MLK Jr. Drive. However, the increased number of

Table 9.3 : Goal 1 - Improving Mobility and Accessibility Evaluation Results

Evaluation Criteria	Performance Measure	BRT in I-20 HOV	BRT along MLK	HRT along I-20	HRT along MLK	HRT along MLK / BRT in I-20 HOV	
Travel Time Savings	Annual Travel Time Savings Per Passenger Mile (minutes)	Value	4.640	1.240	1.683	2.067	4.33
		Rating	3	1	1	3	3
	Average travel time for SOV trips to and from the study area (minutes)	Value	18.6	18.6	18.7	18.7	18.7
		Rating	1	1	1	1	1
	Average travel time for transit trips to and from the study area (minutes)	Value	36.2	36.4	34.6	34.9	35.1
		Rating	1	1	3	3	3
	Average travel time to study area for reverse commute transit trips (minutes)	Value	49.4	50.1	44.7	46.7	47.4
		Rating	1	1	3	3	3
	Composite Score	Value	6	4	8	10	10
		Rating	1	-1	3	3	3
Travel Efficiency/ Congestion	Vehicle miles of travel within the study area	Value	3762543	3765336	3760922	3773403	3773877
		Rating	1	1	1	1	1
	Number of auto vehicle trips to, from and within the study area	Value	269262	270284	268192	269451	265338
		Rating	1	1	1	1	3
	Person hours of travel to, from and within the study area	Value	148978	149023	148044	147871	137550
		Rating	1	1	1	1	3
	Percent of vehicle miles traveled in congested conditions within the study area	Value	49.6	49.7	51	50.3	49.6
		Rating	1	1	-1	-1	1
	Composite Score	Value	4	4	2	2	8
		Rating	1	1	-1	-1	3
Access to Transit	Year 2025 total population within ½ mile of rail or BRT stations	Value	4258	5564	4258	5601	8253
		Rating	1	1	1	1	3
	Year 2000 low income population within ½ mile of rail or BRT stations	Value	738	2296	734	1718	2322
		Rating	1	3	1	3	3
Composite Score	Value	2	4	2	4	6	
	Rating	1	3	1	3	3	
Access to Employment	Year 2000 employment within ½ mile of rail or BRT stations	Value	9088	6464	9088	9167	9449
		Rating	3	1	3	3	3
	Year 2025 employment in the study area accessible by transit within 40 minutes and 60 minutes travel time from the rest of the region	Value	51,805	50,590	67,474	65,032	59,076
		Rating	114,491	117,223	125,407	122,753	112,624
Composite Score	Value	4	2	6	6	4	
	Rating	1	-1	3	3	1	
Transit Ridership	2025 study area transit mode split	Value	7.73%	7.83%	8.34%	8.11%	8.70%
		Rating	1	1	3	1	3
	2025 total transit ridership within the study area (daily boardings)	Value	47,254	46,062	43,683	46,192	48,223
		Rating	3	3	1	3	3
	Year 2025 number of new transit riders on the regional transit system (linked trips)	Value	1,687	1,513	4,987	4,520	3,993
		Rating	1	1	3	3	3
	Year 2025 local bus ridership on the regional transit system	Value	267,888	258,225	263,096	266,936	264,330
		Rating					
	Year 2025 express bus ridership on the regional transit system	Value	25,528	25,811	26,957	27,297	27,940
		Rating					
Year 2025 BRT and fixed guideway transit ridership on the regional transit system	Value	507,087	513,405	510,875	508,031	507,668	
	Rating						
Composite Score	Value	5	5	7	7	9	
	Rating	1	1	3	3	3	
Overall Score	Value	5	3	9	11	13	
	Rating	1	-1	3	3	3	

stations leads to slower travel times and does not produce as many new transit riders as some of the other alternatives. The Central Corridor alternatives also show a smaller impact on providing improved travel efficiency and reduced congestion within the study area.

9.2.2 Environment

The effect of different alternatives on the environment and community resources was the critical concern for residents of the study area and public input concerning the impacts and benefits addressed in this portion of the evaluation was a key factor in the development of the Combined Alternative. Table 9.4 shows the results of this evaluation.

Historically, the project study area has already been developed to a considerable extent. Therefore, impacts to the natural environment from any alternative were minimal, while impacts to communities may be substantial. The largest obstacle for the implementation of the project would be the potential impact to existing land uses adjacent to the project alignment corridors. The project alternatives vary in the number of displacements from none up to a maximum of 29 residents, 30 businesses and/or 3 community facilities. Similarly, the proximity of the alternative alignments to developed residential areas has the potential to result in a significant number of noise and vibration impacts.

The project study area is comprised of almost entirely minority communities, some of which are low or fixed income. While the assessment of environmental justice includes impacts to low income and minority communities, very little disproportionate impact would occur with the implementation of the MARTA West Line Extension project.

Overall, BRT 1a performs the best on the environmental evaluation. This corridor would utilize a planned high-occupancy vehicle (HOV) lane, and therefore result in the least impact to the natural and built environments. Preliminary HOV design at Georgia DOT indicates that the implementation of HOV lanes will not require any additional right of way for I-20. The HRT alternatives perform moderately well due to the small number of proposed stations and significant mobility benefits to low income and minority populations. BRT 3a performed poorly due to high numbers of potential displacements.

9.2.3 Economic Development and Land Use

One of the major comments received regarding the West Line Baseline Conditions Report questioned the logic of a transit investment in an area with a long-term trend of economic decline. It is exactly the long-term trend of decline that helped formulate the project's purpose and

Table 9.4 : Goal 2 - Preserve & Enhance the Environment Evaluation Results

Evaluation Criteria	Performance Measure		BRT in I-20 HOV Lanes	BRT along MLK	HRT along I-20	HRT along MLK	HRT along MLK / BRT in I-20 HOV	
Community Impacts/Disruption	Number of residential displacements within the test alignment right-of-way	Value	0	12	29	19	8	
		Rating	3	1	-1	-1	1	
	Number of business displacements within the test alignment right-of-way	Value	0	30	2	23	11	
		Rating	3	-1	3	-1	1	
	Number of community facilities/churches within test alignment right-of-way	Value	0	3	0	1	0	
		Rating	3	-1	3	1	3	
Composite Score		Value	9	-1	5	-1	5	
		Rating	3	-1	1	-1	1	
Environmental Justice Benefits	Increase in the distance that can be traveled within a 30 minute transit trip from EJ block groups within the study area	Value	7.02	6.04	9.06	8.3	8.23	
		Rating						
	Increase in the distance that can be traveled within a 45 minute transit trip from EJ block groups within the study area	Value	8.83	8.77	9.38	9.33	9.32	
		Rating	1	1	3	3	3	
	Number of low income households accessible to Fulton Industrial Boulevard Business District within 40 minute transit trips	Value	61376	37045	75811	73461	62289	
		Rating						
	Number of low income households accessible to Fulton Industrial Boulevard Business District within 60 minute transit trips	Value	135177	106575	152484	141199	134417	
		Rating	1	-1	3	3	1	
	Number of persons in block groups that meet EJ thresholds within 1/2 mile of rail or BRT stations	Value	2,715	6,619	2,715	4,576	6,706	
		Rating	1	3	1	1	3	
Existing employment within 1/2 mile of rail or BRT stations	Value	9,088	6,464	9,088	9,167	9,449		
	Rating	3	1	3	3	3		
Number of persons in block groups that meet EJ thresholds within 200 feet on either side of alignment centerline	Value	1243	1882	896	1459	2005		
	Rating	1	-1	3	1	-1		
EJ Composite Score		Value	7	3	13	11	9	
		Rating	1	-1	3	3	3	
Transit Dependent	Number of persons in block groups that meet potentially transit dependent thresholds within 1/2 mile of rail or BRT stations	Value	2715	6619	2715	4576	6,706	
		Rating	1	3	1	3	3	
	Composite Score		Value	7	3	7	3	3
		Rating	1	3	1	3	3	
Noise and Vibration	Noise sensitive land uses within 700 feet of the Heavy Rail Transit alternatives and 500 feet of the Bus Rapid Transit alts.	Value	427	428	339	745	684	
		Rating	1	1	3	-1	-1	
	Vibration Sensitive land uses within 200 feet of the Heavy Rail Transit alternatives and 50 feet of the Bus Rapid Transit alts.	Value	5	0	65	132	121	
		Rating	3	3	1	-1	-1	
Composite Score		Value	4	4	4	-2	-2	
		Rating	3	3	3	-1	-1	
Parkland Resources	Number of public parklands and recreational facilities within test alignment right-of-way and 1/2 mile of rail or BRT stations	Value	3	5	3	4	6	
		Rating	1	-1	1	1	-1	
	Composite Score		Value	1	-1	1	1	-1
		Rating	1	-1	1	1	1	
Cultural and Historic Resources	Number of cemeteries within test alignment right-of-way and 1/2 mile of rail or BRT stations	Value	3	4	3	1	3	
		Rating	1	-1	1	3	1	
	Number of National Register of Historic Places (NRHP) listed or eligible sites within test alignment right-of-way and 1/2 mile of rail or BRT stations	Value	9	22	10	7	9	
		Rating	1	-1	1	1	1	
Composite Score		Value	2	-2	2	4	2	
		Rating	1	-1	1	3	1	
Natural Resources	Acres of wetlands within test alignment right-of-way and 1/2 mile of rail or BRT stations	Value	0	2.3	2.55	2.2	0	
		Rating	3	1	-1	1	3	
	Number of stream crossings by facility centerline and within 1/2 mile of rail or BRT stations	Value	0	4	7	3	3	
		Rating	3	1	-1	1	1	
Composite Score		Value	6	2	-2	2	4	
		Rating	3	1	-1	1	3	
Hazardous Materials	Number of known sources of contamination within 1000 feet of alignment centerline and 1/2 mile of rail or BRT stations	Value	15	22	13	22	23	
		Rating	1	-1	1	-1	-1	
	Number of potential sources of contamination within 1000 feet of alignment centerline and 1/2 mile of rail or BRT stations	Value	11	31	17	31	13	
		Rating	1	-1	1	-1	1	
Composite Score		Value	2	-2	2	-2	0	
		Rating	3	-1	3	-1	1	
Air Quality	Tons of NOx emitted within the region	Value	129.5482	129.6694	129.6498	129.5944	129.5954	
		Rating	1	1	1	1	1	
	Tons of VOCs emitted within the region	Value	73.3254	73.4608	73.502	73.4483	73.3595	
		Rating	1	1	1	1	1	
	Composite Score		Value	2	2	2	2	2
			Rating	1	1	1	1	1
Overall Score		Value	17	3	13	9	13	
		Rating	3	-1	1	1	1	

need, because it is believed that the right transit investment along with the increased re-investment by developers and the City of Atlanta will trigger a reversal in the trend. Market analysis indicates that multi-family residential has a good prognosis in the study area without encroachment on the single-family neighborhoods. Further, a transit investment could precipitate some commercial redevelopment which combined with increased residential development will create a healthy mix of uses and stimulate the local economy.

This evaluation assesses which alternative has the right location and number of station sites to stimulate maximum redevelopment activity based on current development trends, local business conditions and physical constraints. BRT 3a and the Combined Alternative were the highest rated alternatives. These alternatives had the same three station sites at the following locations:

- Fulton Industrial Boulevard and I-20;
- MLK Jr. Drive and I-20; and
- MLK Jr. Drive and I-285.

Without question, the station sites at Fulton Industrial Boulevard and on MLK Jr. Dr. at I-285 showed the greatest potential for transit oriented development of all station sites. The MLK Jr. Drive and I-285 station site has already seen significant re-investment by the City and developers, in terms of refurbishment of apartments and the construction of the Adamsville Recreation Center. The results of the evaluation are shown as Table 9.5.

9.2.4 Costs and Cost Effectiveness

Overall cost and cost effectiveness of the alternatives are a very important aspect of the project. The performance measures under this category speak to both the affordability and the practicality of the new transit investment in the region.

An examination of the cost and cost-effectiveness evaluation criteria shown in Table 9.6, reveals that the BRT only alternatives outperformed all the HRT only alternatives and the Combined Alternative. The HRT only alternatives have high capital and O&M costs. This resulted in lower ratings for most of the performance measures for all of the HRT only alternatives. Therefore the rating for all of the HRT alternatives is Less Desirable.

Table 9.5 : Goal 3 - Economic Development & Transit Supportive Land Use Evaluation Results

Evaluation Criteria	Performance Measure		BRT in I-20 HOV Lanes	BRT along MLK	HRT along I-20	HRT along MLK	HRT along MLK / BRT in I-20 HOV	
Developable Land	Square feet of vacant parcels within ½ mile of rail or BRT stations	Value	16,684,114	23,078,571	16,684,114	19,827,413	30,946,679	
		Rating	1	3	1	3	3	
	Square feet of underdeveloped parcels within ½ mile of rail or BRT stations	Value	8,752,851	12,729,590	8,752,851	10,477,702	14,084,081	
		Rating	1	3	1	3	3	
	Composite Score		Value	2	6	2	6	6
			Rating	7	3	7	3	3
Development Constraints	Number of parcels with less than 25% slopes and not located in a 100-year floodplain within ½ mile of rail or BRT stations	Value	136	199	136	142	195	
		Rating	1	3	1	1	3	
	Number of parcels with shapes conducive to development within ½ mile of rail or BRT stations	Value	162	264	162	178	243	
		Rating	1	3	1	1	3	
	Composite Score		Value	2	6	2	2	6
			Rating	7	3	7	7	3
Existing Economic Activity	Number of new business opened within the last five years within ½ mile of rail or BRT stations	Value	52	75	52	50	54	
		Rating	1	3	1	1	1	
	Business stability rating within ½ mile of rail or BRT stations	Value	0.45	0.43	0.45	0.47	0.46	
		Rating	1	1	1	3	1	
	Number of businesses complemented by transit oriented development/transit access within 1/2 mile of rail or BRT stations	Value	98	166	98	105	124	
		Rating	1	3	1	1	1	
	Sales volume of businesses within ½ mile of rail or BRT stations	Value	\$ 513,810,000	\$ 587,624,000	\$ 513,810,000	\$ 504,577,000	\$537,790,000	
		Rating	1	3	1	1	3	
	Existing number of employees within ½ mile of rail or BRT stations	Value	9088	6464	9088	9167	9,449	
		Rating	3	1	3	3	3	
	Composite Score		Value	7	11	7	9	9
			Rating	7	3	7	3	3
Transit Supportive Land Use	Year 2010 residential units within ½ mile of rail or BRT stations	Value	578	867	578	578	867	
		Rating	1	3	1	1	3	
	Year 2010 population density within ½ mile of rail or BRT stations	Value	4.19	5.1	4.19	4.4	4.4	
		Rating	1	3	1	1	1	
	Year 2010 tax revenues (sales and property) within ½ mile of rail or BRT stations	Value	\$ 1,422,912	\$2,134,368	\$ 1,422,912	\$ 1,422,912	\$2,134,368	
		Rating	1	1	1	1	3	
	Year 2025 commercial/retail build out potential within ½ mile of rail or BRT stations (square feet)	Value	2,944,938	6,903,577	2,944,938	4,836,110	5,727,616	
		Rating						
	Year 2025 residential build out potential within ½ mile of rail or BRT stations (units)	Value	3,191	8,082	3,191	6,223	4,409	
		Rating	-1	3	-1	3	3	
	Land area zoned for transit supportive land uses within ½ mile of rail or BRT stations (square feet)	Value	17,552,037	32,299,832	17,552,037	22,159,006	39,594,619	
		Rating	1	3	1	1	3	
	Existing employment density within ½ mile of rail or BRT stations	Value	9.1	4.3	9.1	9.2	6.1	
		Rating	1	-1	1	1	-1	
	Existing population density within ½ mile of rail or BRT stations	Value	2.6	3.5	2.6	2.7	2.9	
		Rating	1	3	1	1	3	
	Transit supportive character rating within ½ mile of rail or BRT station							
	-Roadway System Connectivity	Value	0.33	0.45	0.33	0.27	0.33	
		Rating	1	3	1	3	1	
-Sidewalk System Connectivity	Value							
	Rating	1	3	1	1	1		
Composite Score		Value	6	18	6	10	16	
		Rating	7	3	7	7	3	
Overall Score	Value	4	12	4	8	12		
	Rating	1	3	1	3	3		

Table 9.6 : Goal 4 - Cost and Cost Effectiveness Evaluation Results

Evaluation Criteria	Performance Measure		BRT in I-20 HOV Lanes	BRT along MLK	HRT along I-20	HRT along MLK	HRT along MLK / BRT in I-20 HOV
Absolute Costs	Capital costs for construction including right-of-way (Millions \$)	Value	\$ 64	\$ 88	\$ 468	\$ 504	\$ 251
		Rating	3	3	-1	-1	1
	Annual incremental operating and maintenance costs over Baseline (Millions \$)	Value	\$ 1.68	\$ 1.73	\$ 6.55	\$ 6.38	\$ 3.96
		Rating	3	3	-1	-1	1
	<i>Composite Score</i>	Value	6	6	-2	-2	2
		Rating	3	3	-1	-1	1
Cost Effectiveness	<i>Incremental cost per transportation system user benefit</i>	Value	\$ 25.85	\$ 48.64	\$ 76.69	\$ 74.60	\$ 39.17
		Rating	3	1	-1	-1	1
	<i>Operating cost per passenger mile</i>	Value	\$ 0.499	\$ 0.499	\$ 0.495	\$ 0.495	\$ 0.460
		Rating	1	1	3	3	3
	<i>Incremental cost per incremental passenger</i>	Value	\$ 12.89	\$ 17.64	\$ 29.58	\$ 34.46	\$ 19.99
		Rating					
	Farebox recovery ratio	Value	30.08%	30.01%	29.67%	29.74%	29.77%
		Rating	1	1	-1	-1	-1
	<i>Composite Score</i>	Value	5	3	1	1	3
		Rating	3	1	-1	-1	1
Overall Score	Value	6	4	-2	-2	2	
	Rating	3	3	-1	-1	1	

BRT 1a generally performed the best overall. BRT 3a also scored well, due to higher ridership, which made it more cost effective. These 3 alternatives have a rating of Very Desirable. The Combined Alternative has mostly Desirable ratings, so the overall rating is also Desirable.

9.2.5 Final Ratings

As shown in Table 9.7, the BRT 1a and the Combined Alternative have the same Final Alternative Score of 8, which is the product of having the highest score in two of the categories and the second highest score in the other two categories. BRT 1a offers the lowest cost, relatively high cost effectiveness and very few impacts to the community and environment. The Combined Alternative offers moderate overall cost, excellent mobility and access ratings, and the strongest potential for economic development with no impact to single family homes.

Table 9.7 : Final Alternative Scores Evaluation Results

Evaluation Area	Overall Score	BRT/I-20	BRT/MLK	HRT/I-20	HRT/MLK	BRT/HRT
Mobility/Accessibility	Value	7	3	11	11	13
	Rating	1	-1	3	3	3
Environment	Value	17	3	13	9	13
	Rating	3	-1	1	1	1
Economic Development	Value	4	12	4	8	12
	Rating	1	3	1	3	3
Cost/Cost Effectiveness	Value	6	4	-2	-2	2
	Rating	3	3	-1	-1	1
Total Score	Final Alternative Score	8	4	4	6	8

9.3 Performance of Combined Alternative

In the detailed evaluation, the performance of the Combined Alternative was among the best of the alternatives resulting in a tie with BRT 1a for the highest alternative final score (8). The aggregate composite values across all the goals indicate that the Combined Alternative (Aggregate Value = 40) received scores generally higher across the board than the BRT alternative (Aggregate Value = 34). Even though it is not included in the scoring methodology, this information when considered along with the input from the majority of the public suggests that the Combined Alternative should be the LPA.

The strength of performance of the Combined Alternative is rooted in the complementary nature of the 2 alternatives that were used as the basis for the alternative. BRT 1a and HRT 3 were both ranked highly in the evaluation, however; their strong points in the evaluation were in different evaluation categories. BRT 1a rated the best among the cost and the environmental/community impacts criteria while the HRT alternatives performed well across the mobility and economic development criteria.

The BRT alternative along I-20 HOV lanes with an intermediate station at MLK Jr. Drive scored well primarily because it was a low cost option with good cost effectiveness ratings and it had relatively few impacts on the community and environment. The proposed BRT station at MLK Jr. Drive/I-20 provides good transit access to the northern portion of the study area, specifically the Collier Heights neighborhood and the new area of redevelopment by the Atlanta Neighborhood Development Partnership (ANDP). The improvement in travel time to the Fulton Industrial Boulevard Business District enhances bus service to a population of the riding public that currently uses the system at a high rate and will allow MARTA the flexibility to improve bus service to major employment sites south from I-20 along FIB. Shorter running times mean providing greater levels of service with the same or even reduced amount of equipment. The alternative does not encourage the same level of economic development around key station sites nor the generation of new ridership of the heavy rail alternatives.

Accessibility/mobility and the economic development evaluation criteria favored the heavy rail options. The travel demand model estimated significant numbers of boardings at the proposed station site at the MLK Jr. Dr. and I-285 interchange. That area shows the most promise among the different station sites studied for economic development and growth. The City of Atlanta just completed a new recreation center that would be adjacent to this proposed station site and major renovation programs are currently underway to 2 nearby apartment complexes. Select link analysis (conducted with travel demand model results) indicated a large number of boardings generated from the residential areas in the southern portion of the study area, including Adamsville and Boulder Park, and even other neighborhoods just south of the study area near Cascade Rd and Greenbriar Mall.

HRT 3, however, performed very poorly across the criteria measuring cost effectiveness and impacts to the community and the environment. Alternatives that involved tunneling the heavy rail line were even tested to alleviate some of these impacts, but that only drove cost effectiveness numbers further below acceptable levels. The large majority of impacts associated with the proposed alignment of HRT 3 occur along the north side of MLK Jr. Dr. west of I-285, where there are several churches, a small shopping center and numerous single-family homes that could be affected as a result of the rail construction.

9.3.1 Opportunities

This combination of technologies and alignments presents several opportunities for MARTA while avoiding many of the impacts associated with other alternatives.

- Travel demand modeling estimates that this alternative will yield 80 to 90% of the ridership expected of the highest performing alternative (Heavy Rail along MLK Jr. Drive from Hamilton E. Holmes Station to Fulton Industrial Boulevard) with approximately 40% of the cost.
- The new alternative avoids potential impacts to community resources and neighborhoods along MLK Jr. Drive around Fairburn Road and south of I-20.
- The alternative does not preclude further extensions of fixed guideway transit or BRT some time in the future.
- The BRT portion of the alternative will reduce travel time for passengers accessing employment along Fulton Industrial Boulevard.
- The BRT will further enhance recently expanded service to the Fulton Industrial Boulevard area.
- The project is likely to be more competitive for federal funding due to better cost effectiveness than other alternatives.
- The potential station sites at MLK Jr. Drive/I-285 and Fulton Industrial Boulevard/I-20 provide the best development and redevelopment opportunities within the study area.
- Local and express bus service from the new terminus station will allow MARTA to improve travel times to Greenbriar Mall, Southwest Medical Center, the Adamsville Recreation Center (located within walking distance of the potential station sites) and new developments along Cascade Road.
- The new terminal station will enhance MARTA's presence along I-285 and encourage auto mobile users in that corridor to switch to transit.
- Travel times to the MARTA Rail System for residents in South Fulton County will be reduced, including some who may commute to South Line access points at College Park and Lakewood-Fort McPherson Stations.
- The BRT service in this alternative takes advantage of already programmed HOV lanes and access points on I-20 that will be built by the Georgia Department of Transportation.
- A new station site at I-20 and Fulton Industrial Boulevard will be established for the BRT service and will serve as a placeholder for a heavy rail station should future expansion be warranted.

9.3.2 Drawbacks

- The alternative does not reduce travel time to Fulton Industrial Boulevard as effectively as full heavy rail extensions.
- There will be less flexibility for parking lot redevelopment at the Hamilton E. Holmes Station since the station will still be a primary park and ride for commutes along I-20.

9.4 Public Input and the Public Involvement Process

From the outset of the West Line study process, planners had a difficult time explaining to the general public the differences between expansion alternatives. The discussion bogged down on distinguishing aspects of the alternatives such as the different station sites or whether rail was at grade, tunneled or aerial structure. Before entering the basic screening of alternatives there were 27 different alternatives that were really sub variations of nine basic alternatives (3 corridors, 3 technologies). Another complication to keeping the public informed with a full understanding of process and alternatives, was the lack of a local example of BRT. People were more comfortable talking about heavy rail than considering a new technology that really sounded like a fancy new term for the same bus service currently provided by MARTA.

Another recurring theme during the public involvement process was a level of distrust of MARTA, in general. Aside from some public meetings held in the study area in 1999, MARTA had not been out to the study area to discuss transit expansion since the mid-1980's, and as a result, attendees to the initial public meetings were rarely satisfied with the level of details about the project being presented. As the AA process continued, the public involvement team developed strategies that concentrated interaction with the public into 2 main objectives, continual education on the process and the project; and constant and consistent communication with study area leadership. Oftentimes, it was of little comfort to meeting attendees, but time at every meeting was dedicated to educating the public of the process – when would there be new opportunities to provide input, responses as to why certain information was not yet available and estimates on when it would be available, and what are the next steps. Additional resources were devoted to ensure that this group understood everything about the alternatives; procedures and what assistance from the group could be used to keep the public informed and involved. CAC meetings were the primary conduit for these exchanges, but two study area tours and three leadership briefings were conducted as well.

Upon selection of the LPA, the public generally indicated that their concerns were adequately addressed and incorporated into the process. Some of the distrust had been dispelled and though there were still issues regarding the Combined Alternative, consensus was reached that MARTA Staff should recommend the Combined Alternative to the MARTA Board as the LPA.

9.5 Recommendation on the West Line Locally Preferred Alternative

On August 4th, 2003 MARTA Staff submitted a resolution to the MARTA recommending that the Combined HRT/BRT Alternative be selected as the Locally Preferred Alternative with the following supporting rationale:

- The Bus Rapid Transit portion of the alternative further improves travel time for passengers

accessing employment along Fulton Industrial Boulevard and improves the reliability and cost effectiveness of MARTA's distribution of passengers to/from and along the Fulton Industrial Boulevard corridor, which currently has well over 30,000 employees.

- The new terminal station will also enhance MARTA's presence along I-285 and make it easier for residents of South Fulton County to access MARTA system.
- The Combined Alternative has little or no impact on single-family homes.
- The end-of-line station at MLK Jr. Drive and I-285 has good economic development potential (TOD) and provides walkable access to several apartment complexes, including one that is currently undergoing renovation. It also provides walking access to a major new recreation center.
- A heavy rail extension to I-285 means that MARTA will have extended to the Perimeter high way in 4 of 6 endpoints (all except Airport and Bankhead)
- The cost effectiveness of the Combined Alternative is more in line with FTA guidance than a full heavy rail extension.
- Capital cost for the LPA is estimated to be \$250 million with additional operating costs of \$1.68 million annually.

With an 11-4 vote, the MARTA Board accepted the Combined BRT/HRT alternative as the LPA to be submitted to the Atlanta Regional Commission for inclusion in the Regional Transportation Plan.

9.6 Next Steps

Three activities will now be conducted on behalf of the West Line LPA:

1. The LPA will be introduced into the regional planning process and incorporated into the Regional Transportation Plan.
2. A New Starts Application will be developed for submittal to FTA.
3. A Draft Environmental Impact Statement will be developed and potential impacts attributable to the LPA will be quantified, avoided and/or mitigated.

9.7 Issues

The following issues with the Combined BRT/HRT Alternative that arose out of the Alternatives Analysis process will be addressed as part of the Draft Environmental Impact Statement.

Minimization / Elimination of Alignment for Heavy Rail Extension West of I-285 – Conceptual engineering drawings indicated the need for the tail tracks at the proposed MLK Jr. Dr. station to

extend over I-285. This remains one of the critical concerns of NPU-H, which would like to avoid any potential impacts to the skating rink and other land uses across I-285 from the proposed station site. It also makes sense to minimize and possibly eliminate the need for the tail track extension from a capital cost standpoint, since of the cost of bridging I-285. Efforts to redesign the station concept will take place during the DEIS to reduce the construction cost, eliminate the need to bridge across I-285 while maintaining the operational safety requirements of the MARTA rail system.

Pedestrian Facilities near Stations – To maximize walk access to all of the station sites, station area planning activities will include coordination with the City of Atlanta and Fulton County. This includes pedestrian improvements around the existing Hamilton E. Holmes Station as a part of a recommendation from the city's Livable Centers Initiative and to improve the connection between the Station and Frederick Douglas High School. This also includes planning to ensure safe access at the new stations along MLK Jr. Drive and coordination with the MLK Jr. Drive Corridor Study to be conducted by the city.

Finalize Alignments to Further Reduce Impacts – Current conceptual engineering indicates potential impacts to several different community resources, which may be avoidable.

- BRT bridge connecting Hamilton E. Holmes Station to I-20 HOV Lanes currently impacts a small cemetery on Holmes Drive.
- Heavy Rail alignment impacts the apartment complex at the turn on MLK Jr. Dr. just east of the proposed I-285 station.
- Final Station Concepts need to be finalized.

Refine Bus Service Improvements along FIB – A traffic analysis of potential signal priority enhancements along Fulton Industrial Boulevard may improve future ridership forecasts and could create appreciable operational cost savings and will be included as part of the DEIS.

Coordination with CSX – To date CSX has not been approached about the proposed heavy alignment of the Combined BRT/HRT Alternative. During the DEIS, coordination with CSX will take place to resolve potential conflicts with right-of-way, operations and construction issues. MARTA already owns some of the vacant parcels between MLK Jr. Drive and the CSX right-of-way, but will potentially need additional width in some areas. The grade separation of the CSX at-grade crossing of Linkwood Road was included in conceptual costs for the Combined Alternative, given the requirements the HRT extension.

Coordinate with GDOT on I-20 HOV Implementation – GDOT plans for HOV construction are critical to the development of the BRT portion of the Combined Alternative. Coordination between GDOT and MARTA has already been initiated but must continue on an ongoing basis until the West Line project is completed. Among the issues related to GDOT plans, of particular concern are HOV ramp and access points, design of the I-20 overpass above MLK Jr. Drive and the overall implementation schedule for the I-20 HOV lanes and I-20/I-285 interchange improvements. There are also aspects of the HOV system that have yet to be finalized like the actual project limits of the first

phase of HOV implementation. Potentially, the HOV lane eastbound from the Cobb County line could end at I-285, which may require a reconsideration from which station the BRT portion of the Combined Alternative shall originate. The timing between the GDOT work and the West Line DEIS seem well coordinated at this time.

Continue to Improve Cost Effectiveness of Project

Cost effectiveness continues to be a major concern of MARTA and its planning partners, in particular the Federal Transit Administration (FTA). In the DEIS, refinements will be made to the performance measures and cost estimates as the project becomes better defined, so that the cost effectiveness of the project can be confirmed and potentially improved. This includes application of the FTA Summit model to calculate travel time savings as required for a New Starts application. One area of concern in finalizing the project's Summit model results, will be the future demographics of the study area. Efforts will be made to analyze the most current regional forecasts for the study area population and employment to ensure that they accurately portray future conditions.