

BALTIMORE METROPOLITAN PLANNING ORGANIZATION

**BALTIMORE REGIONAL TRANSPORTATION BOARD
RESOLUTION #09-01**

**RESOLUTION TO ENDORSE ALTERNATES RETAINED FOR DETAILED STUDY
FOR THE RED LINE TRANSIT PROJECT**

WHEREAS, the Baltimore Regional Transportation Board (BRTB) is the designated Metropolitan Planning Organization for the Baltimore region, consisting of the cities of Annapolis and Baltimore, the counties of Anne Arundel, Baltimore, Carroll, Harford, and Howard, and the Maryland Department of Transportation, the Maryland Department of the Environment, and the Maryland Department of Planning; and

WHEREAS, Section 450.318 of the Final Metropolitan Transportation Planning Rules issued by the Federal Highway Administration and Federal Transit Administration on October 28, 1993 identifies the requirements of a major metropolitan transportation study in identifying all promising mobility solutions; and

WHEREAS, in October of 1997, the Baltimore Regional Transportation Board approved Resolution # 98-7, adopting a work program for the Congestion Management System (CMS) corridor implementation; and

WHEREAS, one of the primary purposes of the Congestion Management Process is to identify promising mobility improvement and congestion management strategies, rather than select specific transportation improvement projects for implementation. These improvements will be considered for the next steps of the planning and project development process and, where appropriate, studied further in more detail; and

WHEREAS, the Baltimore Region Rail System Plan, developed in 2001-2002, included the Red Line Transit project. The Red Line project is a step in the ongoing development of a system of interconnected rapid transit lines, which will improve the quality of transit in the Baltimore region and the study corridor in a cost effective and efficient manner. The Red Line Corridor Transit project includes the general area of Woodlawn in Baltimore County on the west, through downtown Baltimore, to the Patterson Park/Canton area to the east, a distance of approximately 14 miles; and

WHEREAS, the stated Purpose of the Red Line Corridor Transit project is to improve transportation choices for those persons living and working in the region, support ongoing and planned economic development initiatives and community revitalization, and help the region address congestion and traffic-related air quality issues ; and

WHEREAS, the stated Need of the Red Line Corridor Transit project is to address a number of transportation problems in the region and corridor. The problems to be addressed include: transit efficiency; transportation choices for East-West commuting; transit system connectivity; mobility; community revitalization and economic development; and air quality goals and environmental stewardship; and

WHEREAS, the Maryland Transit Administration has provided Alternates Retained for Detailed Study (ARDS); and

NOW, THEREFORE, BE IT RESOLVED, that the Baltimore Regional Transportation Board, as a commenting agency, endorses the Red Line Alternates Retained for Detailed Study as described in Attachment A.

I HEREBY CERTIFY that the Baltimore Regional Transportation Board, as the Metropolitan Planning Organization for the Baltimore region, approved the aforementioned resolution at its July 22, 2008 meeting.

Date

Carl Balser, Chairman
Baltimore Regional Transportation Board

Red Line Corridor Transit Study Alternatives Retained for Detailed Study Summary

The purpose of the Red Line Corridor Transit Study is to examine and evaluate alternative levels of investment in transportation improvements in a 14-mile corridor of the Baltimore region, from the Woodlawn area of Baltimore County on the west to the Johns Hopkins Bayview Medical Campus on the east. The objectives of this transit project are to improve transportation choices for people in the Baltimore region, improve efficiency of the current transit system, and help address the region's air quality issues. The Red Line Study is also intended to encourage economic development and transit-oriented development at planned locations along the corridor. The Alternatives Analysis/Draft Environmental Impact Statement for the Red Line will examine potential solutions for addressing mobility issues within the east-west transit corridor.

The Baltimore region faces a number of challenges that support the need for addressing transportation improvements in the corridor, including:

- Current and future congestion and travel time,
- Mobility and access to major activity centers,
- Transportation choices for east-west commuting,
- Connectivity between transit modes,
- Community revitalization and economic development, and
- Air quality concerns.

Preliminary Screening of Conceptual Options

The scoping process for the Red Line Corridor Transit Study was held in spring 2003. During the scoping process, a very wide range of alignment concepts was presented to the general public and regulatory agencies for input. After receiving public and agency feedback, the study team screened the alignments to reduce the number for detailed analyses. The various preliminary alignments were evaluated and compared to determine the advantages and disadvantages of each, based on the following general factors:

- Ability to address Project Purpose & Need
- FTA New Starts Criteria
- Engineering & Cost (such as meets engineering design requirements and avoids higher capital cost)
- Extent of Environmental Impacts (to parklands, air quality, noise, historic properties, and other resources)
- Mobility & Operational Factors (such as travel time, traffic, transit connections)
- Accessibility for Population & Jobs
- Public Input

Methodology

Evaluation measures were selected to compare the various advantages and disadvantages of each option and used for the preliminary screening for the entire Red Line corridor. The measures are also consistent with criteria prescribed in the FTA Project

Justification Rating and Evaluation categories (i.e., New Starts) and the Red Line Corridor project goals stated in the Purpose and Need. Various options in the study area were evaluated and compared for how they relate to the evaluation criteria. For certain evaluation measures, some options were determined to have appreciable benefit or advantage when compared to other options over the same geographical area. Those options with less benefit were eliminated from further study and the remaining ones were retained for developing detailed alternatives. The alignments eliminated are as follows:

1. US 40 Between I-695 and Ingleside Drive (BRT & LRT)
2. Rolling Road between Rolling Bend Road and US 40 (BRT only)
3. Crosby Road between Rolling Rd and Johnnycake Rd (BRT & LRT)
4. I-695 between Security Boulevard and US 40 (BRT & LRT)
5. Old Frederick Road Alternative (BRT & LRT)
6. Quarry Alternative (BRT & LRT)
7. Baltimore Street-Fayette Street One-way Pair between AMTRAK/MARC and Martin Luther King, Jr. Blvd. (BRT & LRT)
8. Lombard Street-Pratt Street One-way Pair between AMTRAK/MARC and Martin Luther King, Jr. Boulevard (BRT only)
9. Lombard Street-Pratt Street One-way Pair between Martin Luther King, Jr. Boulevard and Central Avenue (BRT & LRT)
10. West Franklin and West Mulberry Streets east of Martin Luther King, Jr. Boulevard (BRT & LRT)
11. Saratoga Street Surface (BRT & LRT)
12. Saratoga Street Tunnel (BRT & LRT)
13. Pratt Street Tunnel (BRT & LRT)
14. Lancaster Street (BRT & LRT)

Options Considered and Eliminated For Detailed Study

Following the preliminary screening of alternatives, further analysis was done on the remaining option alignments in order to develop them in more detail. The analysis performed varied in intensity depending on the alignment's location and the strengths and weaknesses of alternative alignments. If the analysis concluded an alignment should be eliminated from the study, and Baltimore City and Baltimore County partners concurred, it was then presented to the public at workshops for public reaction before being formally eliminated from further study. The following list the Red Line options that were eliminated for further study based on additional analysis and public comments received after the November 2005 Public Workshops.

1. Oldstone Road Option
2. Option: I-70 West of I-695 Beltway and Associated Park-&-Ride Commuter Station
3. Dedicated Surface Option on south side of Security Boulevard from CMS to Rolling Road
4. Dedicated Surface option from south side of Mall to south side of Security Boulevard
5. Two Central Social Security Administration Options
6. Stamford Road Option
7. Tunnel Options for the Brookwood Road Option
8. US 40/Franklin Street option along Franklinton Road and Calverton Road

9. US 40/Edmondson Avenue or Franklin Street Tunnel option from Walnut Avenue to N. Calverton Road
 - A. Edmondson Avenue Tunnel – Bridge Option
 - B. Edmondson Avenue Tunnel - Under The Park Option
 - C. North Franklin Street Tunnel - Bridge Option
10. Edmondson Ave. Option From Longwood Street to Pulaski Street
11. Schroeder Street to Fayette Street Tunnel
12. Fremont Avenue from Mulberry Street to Martin Luther King Boulevard (Surface)
13. Paca Street/Eutaw Street Transit Couplet
14. Baltimore Street/Fayette Street Transit Couplet Option
15. Shorter Downtown Tunnel
16. Pier 5/Pier 6 to Fleet/Aliceanna Transit Couplet to Central Ave.
17. President Street Option
18. Eastern Avenue Two-Way Transit Option
19. Canton Loop Option
 - A. Eastern Avenue/Conkling Street/Boston Street/Fleet Street
 - B. Fleet Street/Conkling Street/Boston Street/Aliceanna Street Couplet or Boston Street.
20. Conkling Street (LRT)

Final Alternatives and Options Retained For Detailed Study

There are four overall alternatives and 12 specific alternatives carried forward in the AA/DEIS.

1. No-Build – consists of the existing highway and transit network as well as planned and programmed (committed) improvements for year 2030.
2. TSM – Buses would operate in the corridor with minimal dedicated lanes or exclusive rights-of-way. TSM represents the best that can be done for mobility in the corridor without constructing a new transit guideway, but still includes investment in new buses, TSM stations, and some infrastructure improvements such as queue jump lanes and operational improvements using advanced technology.
3. BRT – consists of medium investment options, including shared and dedicated lanes operating in the corridor within some dedicated and exclusive rights-of-way, and high investment options including mostly dedicated bus lanes and exclusive rights-of-way. The high investment options include above ground structures and/or tunnels for faster operations.
4. LRT – consists of medium investment options, including shared and dedicated lanes operating in the corridor within some dedicated and exclusive rights-of-way, and high investment options including mostly dedicated light rail lanes and exclusive rights-of-way. The high investment options include above ground structures and/or tunnels for faster operation.

The following are the detailed descriptions of the alternatives. The No-Build alternative (Alternative 1) is required as an alternative to assess the impacts if no transit improvements are made in the corridor, beyond what are already programmed for

improvement. The TSM/ Enhanced Bus Alternative (Alternative 2) represents the lower investment bus alternative. The BRT and LRT alternatives represent the higher investment bus and rail alternatives. For the No-Build and TSM, there is effectively one option for each alternative. For the BRT and LRT alternatives, there are a wide range of options.

Alternative 1: No-Build

The No-Build alternative examines what conditions will be like in the year 2030 if the Red Line is not built. Therefore, this alternative provides a baseline for comparison to determine how much of an impact the other alternatives may have. The No-Build alternative consists of the transit service levels, highway networks and traffic volumes, and forecasted demographics for year 2030 that are assumed in the Baltimore Regional Transportation Board's Constrained Long Range Plan (CLRP). The CLRP consists of the existing highway and transit network, as well as planned and programmed (committed) improvements.

Alternative 2: Transportation System Management (TSM)

TSM represents the best that can be done for mobility in the corridor without constructing a new transit guideway. This alternative emphasizes upgrades to existing transit service through operational and minor physical improvements. It could also include selected street upgrades such as intersection improvements, minor widenings and other focused traffic engineering. TSM falls between the No-Build Alternative and the build alternatives in terms of both costs and impacts. Examples of features that could be included in the TSM Alternative are:

- Expanded routing and availability of MTA buses.
- Improved quality of transit service with increased frequency and traffic signal priority.
- Better transit coordination, support facilities and marketing.
- New MTA buses.
- Improved accessibility with complimentary modes such as bicycles and walking.
- More parking and bus lanes.
- New bus stops that would have shelters and amenities comparable to those proposed for the build alternatives, plus some improvements to adjacent sidewalks for access and compliance with the Americans with Disabilities Act (ADA).
- Signal priority and/or queue jump lanes at major intersections, where practical, if the analysis demonstrates that such priority provides substantial time savings.

For the Red Line Corridor Transit Study, TSM is identified as Alternative 2. Alternative 2 would generally provide bus operations along existing roadways in dedicated curb lanes marked for buses and right-turning traffic only. In some places where right-of-way is constrained, the buses would operate in shared lanes with vehicular traffic.

Alternative 2: TSM bus service is defined as follows:

- Shared lanes on Security Boulevard to Woodlawn Drive,
- Two dedicated curb lanes on Security Boulevard,
- I-70 Park-and-Ride lot,
- Shared transit/traffic lanes on Cooks Lane,
- Curb lanes of US 40 to the West Baltimore MARC station,
- Shared transit/traffic lanes with bus service on Franklin St., US 40 lower level, and Mulberry Street,
- Shared transit/traffic lanes on Martin Luther King, Jr. Boulevard,
- Dedicated lanes in a Baltimore Street/Lombard Street Couplet,

- Dedicated transit on Central Avenue,
- Dedicated transit curbside on Eastern Avenue/ Fleet Street Couplet, shared transit in the off-peak period, to Chester Street,
- Bus service on both Eastern Avenue/Fleet St. and Boston Street with dedicated transit curbside on Eastern Avenue/Fleet St Couplet and shared transit/traffic lanes on Boston St.,
- Shared lanes on Conkling Street from Boston Street to Eastern Avenue,
- Lombard Street to the proposed Bayview MARC Station, and
- Shared lanes on Bayview Boulevard to the Bayview station.

Due to the wide range of options (both horizontal and vertical alignments) for BRT and LRT, it is not possible to evaluate all possible combinations of options. It is therefore necessary to combine different BRT or LRT options from geographic areas to form complete end-to-end BRT or LRT alternatives, in order to allow a reasonable assessment of alternatives and create the preferred end-to-end alternative. For the analysis of Alternatives 3 and 4, representative options have been combined to create ten end-to-end alternatives to represent a full range of BRT and LRT alternatives for comparison. Other combinations of options may be combined but due to the number of options under consideration, representative options had to be identified to manage the number analyzed. The comparisons and evaluations of all the representative options that make up the end-to-end alternatives will be fully documented in the AA/DEIS. The following end-to-end build alternatives for Alternative 3 and Alternative 4 are presented below.

Alternative 3: Bus Rapid Transit

Three components define Alternative 3: the mode, alignments and options. The mode for Alternative 3 is bus. There are different routes under consideration that the BRT could operate along horizontally and vertically. The horizontal alignments extend west to east from CMS and Security Square Mall to Bayview. The vertical alignments include surface, varying lengths of tunnel, and aerial structures.

Alternative 3A: BRT, Dedicated Surface

- Shared lanes on Security Boulevard,
- Shared lanes on Rolling Road,
- North side of the Security Square Mall,
- Central alignment and the north side of I-70,
- I-70 Park-and-Ride lot,
- Two dedicated lanes on Cooks Lane,
- Median of US 40 with two vehicular lanes,
- Lower level of US 40,
- West side of Martin Luther King, Jr. Boulevard,
- Baltimore Street/Lombard Street Couplet dedicated transit in 2nd lane out on both Baltimore and Lombard Streets,
- Central Avenue 2nd lane out,
- Eastern Avenue/Fleet Street Couplet dedicated transit 2nd lane out, no parking in left curb lane peak period,
- Norfolk-Southern-Canton Railroad right-of-way, and
- New alignment to Mason Lord Drive on the Bayview Medical Campus.

Alternative 3B: BRT, Downtown Tunnel and Dedicated Surface

- Shared lanes on Security Boulevard,
- Shared lanes on Rolling Road,
- North side of the Security Square Mall,
- Central alignment and the north side of I-70,
- I-70 Park-and-Ride lot,
- Two dedicated lanes on Cooks Lane,
- Median of US 40 with two vehicular lanes,
- Lower level of US 40,
- West side of Martin Luther King, Jr. Boulevard,
- Portal on Fremont Ave. to a Lombard St. tunnel continuing to a portal on Central Ave.
- Central Avenue 2nd lane out,
- Eastern Avenue/Fleet Street Couplet dedicated transit 2nd lane out, no parking in left curb lane peak period,
- Median of Boston Street, and
- New alignment to Mason Lord Drive on the Bayview Medical Campus

Alternative 3C: BRT, Downtown Tunnel and Cooks Lane Tunnel and Dedicated Surface

- Shared lanes on Security Boulevard,
- Shared lanes on Rolling Road,
- North side of the Security Square Mall,
- Central alignment and the north side of I-70,
- I-70 Park-and-Ride lot,
- Tunnel under Cooks Lane,
- Median of US 40 with two vehicular lanes,
- Lower level of US 40,
- West side of Martin Luther King, Jr. Boulevard,
- Portal at Lexington St. to a Fayette St. tunnel continuing to a portal on Fayette St. at Central Ave.,
- Central Avenue 2nd lane out,
- Eastern Avenue/Fleet Street Couplet dedicated transit 2nd lane out, no parking in left curb lane peak period,
- Median of Boston Street, and
- New alignment to Mason Lord Drive on the Bayview Medical Campus

Alternative 3D: BRT, Maximum Tunnel Length and Dedicated Surface

- Shared lanes on Security Boulevard,
- Shared lanes on Rolling Road,
- North side of the Security Square Mall,
- Central alignment and the north side of I-70,
- I-70 Park-and-Ride lot,
- Tunnel under Cooks Lane,
- Tunnel under US 40 and West Franklin Street to Calverton Road,
- Median of US 40 with two vehicular lanes,
- Lower level of US 40,
- West side of Martin Luther King, Jr. Boulevard,
- Portal on Fremont Avenue to the Lombard Street tunnel continuing under Eastern Avenue to a portal in Norfolk-Southern-Canton Railroad right-of-way, and
- New alignment to Mason Lord Drive on the Bayview Medical Campus

Alternative 3E: BRT, Dedicated Surface with Johnnycake Road Alignment

- Shared lanes on Security Boulevard,
- Shared lanes on Rolling Road,
- North side of the Security Square Mall,
- Central alignment to Woodlawn Drive,
- Two dedicated curb lanes on Woodlawn Drive,
- Shared transit/traffic lanes on Johnnycake Road and Ingleside Avenue,
- Dedicated transit lanes, two vehicular lanes on US 40 to Cooks Lane,
- Median of US 40 with two vehicular lanes,
- Lower level of US 40,
- West side of Martin Luther King Jr. Boulevard,
- Baltimore St./Lombard St. couplet dedicated transit in 2nd lane out on both Baltimore and Lombard Streets,
- Central Avenue 2nd lane out,
- Eastern Avenue/Fleet Street Couplet dedicated transit 2nd lane out, no parking in left curb lane peak period,
- Norfolk-Southern-Canton Railroad right-of-way, and
- New alignment to Mason Lord Drive on the Bayview Medical Campus.

Alternative 3F: BRT, TSM Surface and Downtown Tunnel

- Shared lanes on Security Boulevard to Woodlawn Drive,
- Two dedicated curb lanes on Security Boulevard,
- I-70 Park-and-Ride lot,
- Shared transit/traffic lanes on Cooks Lane,
- Curb lanes of US 40 to the West Baltimore MARC station,
- Shared transit/traffic lanes with bus service on Franklin Street,
- US 40 lower level, and Mulberry Street,
- Shared transit/traffic lanes on Martin Luther King, Jr. Boulevard,
- Portal on Fremont Avenue to the Lombard Street tunnel to a portal on Central Avenue,
- Dedicated transit on Central Avenue,
- Dedicated transit curbside on Eastern Avenue/Fleet Street couplet, shared transit in the off-peak period, to Chester Street,
- Bus service on both Eastern Ave./Fleet St. and Boston St. with dedicated transit curbside on Eastern Avenue/Fleet Street couplet and shared transit/traffic lanes on Boston Street,
- Shared lanes on Conkling Street from Boston Street to Eastern Avenue,
- Lombard Street to the proposed Bayview MARC Station, and
- Shared lanes on Bayview Boulevard to the Bayview station.

Alternative 4: Light Rail Transit

Three components define Alternative 4, the mode, alignments and options. The mode for Alternative 4 is LRT. There are different routes under consideration that the LRT could operate along horizontally and vertically. The horizontal alignments extend west to east from CMS and Security Square Mall to Bayview. The vertical alignments include surface, varying lengths of tunnel and aerial structures.

Alternative 4A: LRT, Dedicated Surface

- South side of Security Boulevard,
- West side of Rolling Road,
- North side of the Security Square Mall,
- Central alignment and the north side of I-70,
- I-70 Park-and-Ride lot,
- Two dedicated lanes on Cooks Lane,
- Median of US 40 with two vehicular lanes,
- Lower level of US 40,
- West side of Martin Luther King, Jr. Boulevard,
- Baltimore Street/Lombard Street couplet with dedicated transit in 2nd lane out on both Baltimore and Lombard Streets,
- Central Avenue 2nd lane out,
- Eastern Avenue/Fleet Street Couplet with dedicated transit in 2nd lane, no parking in left curb lane in peak-period,
- Norfolk-Southern-Canton Railroad right-of-way, and
- New alignment to Mason Lord Drive on the Bayview Medical Campus.

Alternative 4B: LRT, Downtown Tunnel and Dedicated Surface

- South side of Security Boulevard,
- West side of Rolling Road,
- North side of Security Square Mall,
- Central alignment and the north side of I-70,
- I-70 Park-and-Ride lot,
- Two dedicated lanes on Cooks Lane,
- Median of US 40 with two vehicular lanes,
- Lower level of US 40,
- West side of Martin Luther King, Jr. Boulevard,
- Lombard Street tunnel continuing under Eastern Avenue to a portal on Aliceanna Street at Boston Street,
- Median of Boston Street to Conkling Street, and
- New alignment to Mason Lord Drive on the Bayview Medical Campus.

Alternative 4C: LRT, Downtown Tunnel and Cooks Lane Tunnel and Dedicated Surface

- South side of Security Boulevard,
- West side of Rolling Road,
- North side of Security Square Mall,
- Central alignment and the north side of I-70,
- I-70 Park-and-Ride lot,
- Tunnel under Cooks Lane,
- Median of US 40 with two vehicular lanes,
- Lower level of US 40,
- West side of Martin Luther King, Jr. Boulevard,
- Lombard Street tunnel continuing under Eastern Avenue to a portal on Aliceanna Street at Boston Street,
- Median of Boston Street to Conkling Street, and
- New alignment to Mason Lord Drive on the Bayview Medical Campus.

Alternative 4D: LRT, Maximum Tunnel and Dedicated Surface

- South side of Security Boulevard,

- West side of Rolling Road,
- North side of Security Square Mall,
- Central alignment and the north side of I-70,
- I-70 Park-and-Ride lot,
- Tunnel under Cooks Lane,
- Tunnel under US 40 and West Franklin Street to Calverton Road,
- Median of US 40 with two vehicular lanes,
- Lower level of US 40,
- West side of Martin Luther King, Jr. Boulevard,
- Lombard Street tunnel continuing under Eastern Avenue to a portal in Norfolk-Southern-Canton Railroad right-of-way, and
- New alignment to Mason Lord Drive on the Bayview Medical Campus.