

Baltimore Region Rail System Plan



Report
of the
Advisory
Committee

August 2002



Advisory Committee

In September 2001, Maryland Department of Transportation Secretary John D. Porcari appointed 23 elected, civic, business, transit and community leaders from throughout the Baltimore region to serve on The Baltimore Region Rail System Plan Advisory Committee. He asked them to recommend a Regional Rail System long-term plan and to identify priority projects to begin the Plan's implementation. This report summarizes the Advisory Committee's work.

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Senior Vice President
EarthTech, Inc.

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Mr. Robert Moore
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Imagine the possibilities...

a system of fast, convenient and reliable rail lines running throughout the region, connecting all of life's important activities.

Imagine being able to go just about everywhere you really need to go...on the train. 21 colleges, 18 hospitals, 16 museums, 13 malls, 8 theatres, 8 parks, 2 stadiums, and one fabulous Inner Harbor. You name it, you can get there. Fast. Just imagine the possibilities of Red, Green, Blue, Yellow, Purple, and Orange – six lines, 109 miles, 122 stations. One great transit system.



We can get there. Together.

Building a system of rail lines for the Baltimore region will be a challenge; no doubt about it. But look at Atlanta, Boston, and just down the parkway in Washington, D.C. They did it. So can we.

It won't happen overnight. But we start with a plan. Bold and visionary... but doable. Piece by piece over the next forty years, we will build and fine tune our system, expanding from the center. We'll work together to create a system that is fast and reliable.

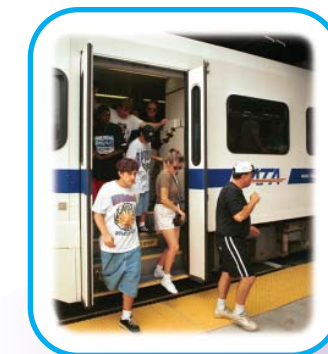
This is an enormous challenge, but an even bigger opportunity. It's a chance to change the way that we get around, the way that we shape our communities, the way that we relate to one another and connect. New rail lines will bring new jobs, new opportunities, and a new way to connect regionally. Our region has the beginnings of a first class rail system. With this plan, we can do even more!



The system is all about giving you a choice in how to get to work, to school, and to play.

No more sitting in long lines of traffic on I-95. You're going 50 miles per hour while everyone else fumes in the back-up. No more endless circles around crowded mall parking lots. No more paying \$15 a day to park at the Inner Harbor. You can get there and back for \$3. If you think traffic is bad on the Beltway now, just imagine what it will look like in a few years!

We have the foundation of a rail system in place. Already, you can get from Owings Mills to downtown Baltimore in just 26 minutes. From BWI Airport to downtown in just 27 minutes. Just imagine when our rail system goes to even more places, even faster...to Fells Point, Towson, Columbia, Mt. Vernon, and Arundel Mills. And with better connections...at Penn Station and Camden Station, in East and West Baltimore, and at BWI Airport.



Message from the Co-Chairs

The Advisory Committee for the Baltimore Region Rail System Plan is pleased to present its report and recommendations for a comprehensive and visionary rail transit system to serve the greater Baltimore metropolitan area. We believe the Baltimore region deserves and requires a system of fast and reliable rail lines that serves our citizens and the region's important activity centers.



Continued increases in traffic, the need for Smart Growth, the need for mobility choices for our citizens, and degradation of air quality must receive a significant and sustained response from our local and State leaders. Built upon a strong foundation of Committee interaction and public input, this rail system plan for the Baltimore region represents a major investment in our continued renaissance, the economic growth of our region, and the quality of life of our people.

The objectives of our Plan are simple: 1) to establish, over the next 40 years, a true system of rail lines that provides fast and reliable rail service between major life activity centers in the region; 2) to serve areas with the greatest concentration of population and employment; and 3) to make the most of our prior transportation investments. In order to achieve the greatest benefit from future investments, separating rail lines from street traffic will be of the utmost importance, as will an excellent bus system to complement the rail system.

We urge the Maryland Department of Transportation (MDOT) to begin working now with the region's elected officials to implement this Plan, and to seek congressional authorization and federal funding beginning in 2003 for our recommended priority projects. From there, the Maryland Transit Administration (MTA) and MDOT must put in place a continuous pipeline of projects in planning, design, and construction that will see this Plan incrementally achieved over the next 40 years. It is essential to begin immediately to make visible progress on agreed upon projects, and to keep the rail system Plan continually at the top of the region's transportation agenda. It is our strong recommendation that the Phase I priority recommendations be completed within the next 10 -12 years.

We are proud of how hard our Committee has worked since September 2001 to develop and seek consensus on a Regional Rail System Plan. Throughout our months of hard work, the commitment of the 23 Committee members and the staff of the MTA to the success of this project was without question. We pledge, on behalf of the Committee, to continue to work with you, the Administration, and the elected leadership in the Baltimore region to advance this Plan. It is critical to the continued economic vitality and quality of life of the Baltimore area that the State of Maryland make investments now in building a regional rail system for the future.

We are pleased that the extensive public outreach activities, in connection with the development of this Plan, have generated significant interest in, and discussion of, the importance of rail transit for the future of the Baltimore area. This public dialogue and increased awareness must continue in order for this rail system to become a reality.

Thank you for the opportunity to serve the citizens of the Baltimore region and the State of Maryland on this most important project.

Sincerely,

John A. Agro, Jr.
Co-Chair

Anne S. Perkins
Co-Chair

Message from the Secretary

The State of Maryland is grateful to the members of the Baltimore Region Rail System Plan Advisory Committee for their hard work. This report on creating a Baltimore region rail system will serve as a blueprint for generations to come as new rail transit projects are developed in the Baltimore region. Such a rail system will be important to the continued economic vitality of the region. It will make a significant contribution to improving air quality for citizens of the Baltimore area, and will continue the legacy of Smart Growth throughout Maryland.

When Governor Parris N. Glendening and Lt. Governor Kathleen Kennedy Townsend established the goal of doubling transit ridership in Maryland, they recognized that a building block approach was necessary to reach the goal. Their commitment to improved bus service, new neighborhood shuttles, better customer information and a seamless fare payment system throughout the State has laid a solid foundation for even larger projects to come.

Working with the Baltimore region's elected officials, the Maryland Department of Transportation is committed to taking the next steps toward doubling ridership by developing a rail system that is fast, reliable, and cost-effective for the Baltimore area. There is much work to be done in developing such a system, and it will not be done overnight. This plan can be accomplished only with steadfast leadership from the region's elected officials and the support of the business and civic communities. As we move forward, I invite you to work with us and help implement this vision.

Many thanks to John A. Agro, Jr. and Anne S. Perkins for their leadership and commitment to this effort and to the entire Advisory Committee for its forward and visionary thinking about rail transit in the Baltimore region.

Sincerely,

John D. Porcari
Secretary



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Executive Summary

The Baltimore Region Rail System Plan

The Advisory Committee recommends construction of a complete Baltimore regional rail system extending north, south, east and west to connect the entire region. The Rail System Plan is composed of six lines, some completely new and some building on existing rail services.

When completed, there will be a 109-mile rail system with 66 new miles added to the existing 43 miles of Metro Subway and Light Rail lines. The finished system could have as many as 122 stations, including 68 new stations in addition to the 54 stations that exist now. The cost of building the entire Plan is likely to be approximately \$12 billion, although more precise costs can only be determined from detailed studies.

Guiding Principles, Public Outreach Key in Forming the Plan

The Plan is based on a set of Guiding Principles that was developed and applied by the Advisory Committee. Following these principles ensures that

each future rail line, and the proposed rail network, will efficiently meet the needs of current and future residents, and will contribute to sustaining and enhancing our dynamic and prosperous region.

The Advisory Committee reviewed technical information and studies regarding current and future conditions in the region, concentrating on where people want to go in the course of their daily activities. The Guiding Principles were prepared, as was a series of alternative plans. A draft Rail System Plan was released for public review and comment, and then the Committee prepared the recommended Rail System Plan.

The public outreach and involvement process was key to the preparation of the Rail System Plan. Over 2,600 people completed the Life Activities Survey, more than 1,000 citizens attended workshops and leadership briefings, and 600 people submitted written comments on the Draft Plan. A regularly updated web site provided information and offered the chance to give further input to the Committee. An electronic newsletter and radio, television and print media provided extensive coverage of the Draft and Final Plans. The Advisory

Committee asked for, received, and considered the views of the region's citizens, making several changes in response to public comments, in preparation of this Baltimore Region Rail System Plan.

Priorities and Next Steps

Recognizing that preparation of the Plan is but the first step toward creating a regional rail system, the Advisory Committee also proposes a series of actions necessary to "jump start" fulfillment of the Plan. The recommendations include improvements to enhance the operation of Baltimore's current Light Rail, Metro and MARC Train services, and swift action to design and construct these priority projects:

- Red Line** from the Social Security Complex through downtown to Fells Point
- Green Line** extend the Metro Subway line from Johns Hopkins Medical Campus north to Morgan State University
- Purple Line** from Madison Square to Martin State Airport

These lines should be constructed and operating within 10-12 years. The Advisory Committee emphasizes the necessity for MTA to continuously have projects in planning, engineering and construction stages until all of the projects recommended in the Plan are constructed and operating.

To achieve this ambitious Plan, a means of financing the construction of the rail system is of the utmost importance. The Committee notes that federal, State and local governments and the private sector must all contribute financially towards constructing the rail system. The Maryland Department of Transportation, working with the region's elected officials, and State and federal lawmakers, must prepare a funding strategy to make sure that not only the priority recommendations, but the entire rail system are completed. Federal government assistance delivered by the Maryland Congressional Delegation is essential in this endeavor.

The Committee also recommends that action be taken at the local government level to include the rail system in local master plans and to secure the necessary rights-of-way in anticipation of future construction. Additionally, the citizens of the region must continue to be involved in planning and advocacy of the Rail Plan if the system is to become a reality.

A Great Transportation Future

When this Rail System Plan is in place, the Baltimore region will experience a new transportation era. People will be attracted to a rail-based transit system that is fast, safe, and reliable. Rail transit will connect people to where they live, work, shop, and play and to the services and institutions they wish to visit. Thousands of commuters who must use their car today will use the regional rail system to get to work. Residents of the region who are transit dependent will get to more of the region's jobs, services and attractions. The quality of our air and water will be improved. People will be connected.



- Red Line** from I-70 west of the Beltway linking the Social Security Complex, Westview, Edmondson Village, West Baltimore to Charles Center. From the east, the Red Line approaches downtown from Turner's Station through Dundalk, Bayview, Canton, Fells Point, and Inner Harbor East.
- Green Line** from the northeast linking Martin State Airport, I-95, White Marsh, Morgan State University and Johns Hopkins Medical Campus, and then running as the existing Metro Subway through downtown to Owings Mills.
- Yellow Line** from Hunt Valley in the north to Lutherville, Towson, Charles Village, and Mt. Vernon, then through downtown to BWI Airport. Beyond the airport, the Yellow Line connects Arundel Mills Mall, the US 1 corridor, and Columbia in the west.
- Blue Line** from Hunt Valley in the north connecting Timonium and Mt. Washington to downtown Baltimore. On the south end of the Blue Line, communities such as Cromwell (Glen Burnie), Linthicum, and Cherry Hill continue to be served by existing Light Rail.
- Purple Line** from Edgewood through Rossville and Rosedale in the east connecting to Penn Station; from the southwest, the Purple Line connects Odenton, Halethorpe, and Sandtown-Winchester with Penn Station.
- Orange Line** serves southwestern Baltimore City and Baltimore County from Camden Station in downtown to Morrell Park, Lansdowne, and Dorsey Station in Howard County.

Baltimore Region Rail System Plan

This document marks the first comprehensive effort in nearly 40 years to plan a rail system for the entire Baltimore region. As a result, the Baltimore region now has a Plan that will serve as a guide for the expansion of rail transit in the Baltimore area for years to come. A 23-member Advisory Committee of business, civic, and community leaders worked with MTA and the region's elected officials in developing this Plan. An extensive public involvement process was used, including 13 public meetings, 2,600 surveys completed, and more than 600 written comments on the Draft Plan before work was completed in March 2002. With this Plan, the MTA should immediately undertake a series of rail projects that begin with planning, community input and environmental review.

Guiding Principles

Ten Guiding Principles were established to develop the Baltimore Region Rail System Plan. The rail system will successfully carry out these principles and provide many benefits to the Baltimore region.

1. The rail system must serve corridors with high concentrations of population.
2. The rail system must serve major employment centers.
3. The rail system must serve congested corridors.
4. The rail system must serve major activity centers, universities, shopping centers, tourist attractions and entertainment centers.
5. The rail system must support existing land use and major targeted growth areas.
6. The rail system must meet the needs of the transit-dependent population.
7. The rail system must optimize the use of the existing transit system.
8. The rail system must be seamless for the transit rider.
9. The rail system must provide a trip which is as competitive as possible with the automobile with regard to speed and reliability.
10. The rail system must attract new riders to transit and contribute to Maryland's goal of doubling transit ridership.



Fast Facts

TOTAL RAIL MILES

Red Line: 21 miles
Green Line: 32 miles (15 miles already exist)
Blue Line: 26 ½ miles (26 miles already exist)
Yellow Line: 42 miles (14 miles already exist)

TOTAL STATIONS

122 (54 stations already exist)

TIME FRAME

System will be built over 40 years. Planning and environmental documentation will begin in Fall 2002 on priority projects.

PRIORITY PROJECTS

- Red Line between Social Security and Fells Point
- Green Line from Johns Hopkins Medical Campus to Morgan State University
- Purple Line from Madison Square to Martin State Airport

MODE

Plan does not specify mode (Metro Subway, Light Rail, etc.) New rail lines must be separated from street traffic wherever possible to maximize speed and reliability.

COST

Approximately \$12 billion. More precise costs will be developed as specific projects are planned and engineered.

"We extended opportunities to the citizens of our region to review our work. They took us up on our offer and the final product is much improved as a result. The design and construction of these new rail lines must offer a similar approach."

Anne S. Perkins
Advisory Committee Co-Chair



"Easy transit access to places of employment will improve the quality of life for all people in the Baltimore region – from hospital and hotel workers to doctors and corporate executives. The people of the Baltimore region deserve a rail system that is fast and reliable, just like the system in the Washington area."

Robert Moore, President
Service Employees International Union,
Local 1199E-DC

Baltimore Region Rail System Plan Map
Adopted March 2002



Legend

- Rail Lines
- Existing Station
- Proposed Station
- Transfer Station
- MARC Train

Points of Interest

- African Art Museum of Maryland Columbia Town Center
- American Can Company Boston Street
- American Visionary Art Museum Inner Harbor
- Antique Row/Eubie Blake Museum Centre Street
- B&A Trail Cromwell Station/ Glen Burnie
- Babe Ruth Museum University Center
- Baltimore Arena Charles Center
- Baltimore Convention Center Pratt Street
- Baltimore County Central Library Towson
- Baltimore County Government Center Towson
- Baltimore Museum of Art Johns Hopkins University
- Baltimore Streetcar Museum Penn Station

Rail Line

- Baltimore/Washington International Airport BWI Airport
- Baltimore Zoo Mondawmin
- Biotechnology Park Madison Square
- Broadway Market Fells Point
- Civil War Museum Inner Harbor East
- Clifton Park Coldstream
- Cross Street Market Hamburg Street
- Druid Hill Park Mondawmin
- Drumcastle Center Rodgers Forge
- Dundalk Marine Terminal Dundalk
- Enoch Pratt Central Library Centre Street
- Federal Hill Park Inner Harbor
- Fells Point Fells Point
- Fire Museum of Maryland Beltway North

- Fleming Park Turners Station
- Gateway Commerce Center Columbia Gateway
- Great Blacks in Wax Museum E. North Avenue
- Holocaust Memorial Aquarium
- Howard County Central Library Columbia Town Center
- Inner Harbor Inner Harbor
- Inner Harbor East Inner Harbor East
- Lake Elkhorn Owen Brown
- Lake Kittamaquundi Columbia Town Center
- Lake Montebello 33rd Street
- Little Italy Inner Harbor East
- Maryland Historical Society Centre Street
- Maryland School for the Blind Overlea
- Maryland Science Center Inner Harbor
- Maryland State Fairgrounds Timonium
- Merriweather Post Pavillion Merriweather
- National Aquarium Aquarium
- Oriole Park at Camden Yards Camden Yards
- Patterson Park Patterson Park
- Penn Station Penn Station
- Pier 6 Concert Pavillion Aquarium
- Pimlico Race Track Rogers Avenue
- Port Discovery Shot Tower/ Marketplace
- Public Works Museum Inner Harbor East
- Rash Field Inner Harbor
- Ravens Stadium Hamburg Street
- Shot Tower/Central Post Office Shot Tower/ Marketplace
- Social Security Administration Social Security
- Star Spangled Banner Flag House Shot Tower/ Marketplace
- Walters Art Museum Mt. Vernon
- War Memorial Shot Tower/ Marketplace
- Washington Monument/Mt. Vernon Mt. Vernon

Colleges and Universities

- Baltimore City Community College (Downtown) Aquarium
- Baltimore City Community College (Liberty Heights) Mondawmin
- Baltimore International College Shot Tower/ Marketplace
- CCBC Dundalk Dundalk
- CCBC Essex Rossville
- Coppin State College Mondawmin
- Goucher College Towson
- Howard Community College Columbia Town Center
- Johns Hopkins University Johns Hopkins University
- Johns Hopkins University (Columbia Campus) Columbia Gateway
- Loyola College Cold Spring
- Loyola College (Columbia Campus) Broken Land
- Maryland Institute College of Art UB/Mt. Royal
- Morgan State University Morgan State University
- Notre Dame College of Maryland Cold Spring
- Peabody Conservatory Mt. Vernon
- Sojourner Douglass College Inner Harbor East
- Towson University Towson University/ Medical Center
- University of Baltimore Penn Station
- University of Maryland Baltimore University Center
- University of Maryland Baltimore County St. Denis

Hospitals

- Bon Secours Harlem Park/ Franklin Square
- Franklin Square Rossville
- Good Samaritan Morgan State University
- Greater Baltimore Medical Center Towson University/ Medical Center
- Johns Hopkins Bayview Medical Center Bayview
- Johns Hopkins Johns Hopkins Medical Campus
- Howard County General Hospital Columbia Town Center
- Kennedy Krieger Institute Johns Hopkins Medical Campus
- Maryland General Cultural Center
- Maryland Rehabilitation Center Northwood
- Mercy Mt. Vernon
- Mount Washington Pediatric Mt. Washington
- Sheppard Pratt Towson University/ Medical Center
- St. Agnes Frederick Avenue
- St. Joseph Medical Center Towson University/ Medical Center
- Union Memorial Johns Hopkins University
- University of Maryland University Center
- Veterans Administration University Center
- Wyman Park Health System Johns Hopkins University

Shopping

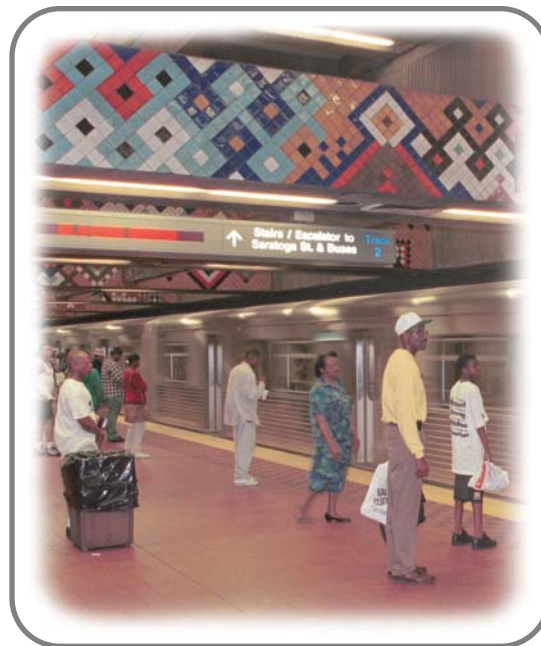
- Arundel Mills Mall Arundel Mills
- Harbor Place/Gallery Inner Harbor
- Hunt Valley Mall Hunt Valley
- Lexington Street Mall Lexington Market
- Logan Village Shopping Center Dundalk
- Mondawmin Mall Mondawmin
- Owings Mills Town Center Owings Mills
- Reisterstown Road Plaza Reisterstown Plaza
- Security Square Mall Security Square
- Snowden Square Columbia Gateway
- The Mall in Columbia Columbia Town Center
- Towson Town Center Towson
- Westview Mall Westview
- White Marsh Mall/The Avenue White Marsh

Theatres

- Arena Players Centre Street
- Center Stage Mt. Vernon
- Charles Theatre Penn Station
- Hippodrome Lexington Market
- Lyric Opera House UB/Mt. Royal
- Mechanic Theatre Charles Center
- Meyerhoff Symphony Hall Cultural Center

Designing New Rail Lines

Speed, reliability, safety, rider convenience, and the potential to attract new riders to transit must be the most important factors considered when designing new rail lines. The Advisory Committee recognizes the complexities and range of issues involved with choosing the appropriate rail technology, including the decision of whether to build underground, at-grade or on aerial structures. These decisions are appropriately made during the alternative analysis and formal environmental processes required by law, but must also be premised on providing a mode of transit that is competitive with the automobile. The Advisory Committee strongly recommends that new rail lines be separated from street traffic wherever possible, in order to maximize speed and reliability. This section describes the primary modes of transit encouraged for use in developing the Baltimore Region Rail System.



Throughout North America, there are two primary types of local rail transit service. The first mode is commonly referred to as "Heavy Rail," "Rapid Rail," "Metro," or "Subway." This mode is in operation in Baltimore on the line from Owings Mills to Johns Hopkins Medical Campus, in Washington's 103-mile Metro System, and in other cities such as New York, Atlanta, and Los Angeles. The chief operating characteristic of this mode is that there is total separation of the rail service from any street or pedestrian traffic. Heavy rail is powered by a high-voltage "third rail." Contact with this third rail by people or autos must be avoided and, therefore, the rail service must be totally isolated or separated from any non-rail activity. It should be noted that Heavy Rail is

often operated in a tunnel (subway), but also can be at-grade (where fenced or otherwise separated from cars and people), or in the air on an aerial structure. In Baltimore, Metro Subway operates on the surface in the median of the Northwest Expressway (I-795), on an aerial structure between West Cold Spring and Reisterstown Plaza, and in a tunnel between Mondawmin and Johns Hopkins Medical Campus.



The second mode of rail transit is commonly referred to as "Light Rail." This mode is in operation in Baltimore on the Central Light Rail Line from Hunt Valley to Cromwell. Light Rail is also in operation in many North American cities such as San Diego, St. Louis, Pittsburgh, Buffalo, Calgary, Edmonton, and Portland. Light Rail is also typically electrified, powered through overhead wires. Since these wires are isolated and not reachable, Light Rail can operate in mixed traffic with cars, bikes, and pedestrians. The advantage of Light Rail is its flexibility. Because it does not have to be separated from other activities, it can operate underground, at the surface, or on an aerial structure without additional measures to separate the power source. In Baltimore today, the Light Rail operates primarily at-grade, although there are some portions on an aerial structure, such as the area between the Hamburg Street and Westport stations. Light Rail also operates with street traffic along Howard Street and in Hunt Valley, where conflicts with cars and pedestrians are frequent.

What drives the decision on which mode to construct in any given corridor and whether to build underground, at-grade, or on aerial structures? Key factors are costs to construct (with tunneling being the most expensive option), desired operating speeds and reliability of rail service, visual and noise impacts to adjacent communities, right-of-way availability, impacts to the natural environment, and effects on vehicular traffic. The Advisory Committee strongly supports decision-making for these projects based on the highest possible quality of transit.

Red Line

The Red Line will be the first east-west rail line in Baltimore. It will connect both the eastern and western communities of Baltimore City and Baltimore County with downtown. It will also provide access to major employment centers such as the Social Security Complex in Woodlawn and the Bayview Medical Campus in East Baltimore. The Red Line will be completely new and have 21 miles of track, with as many as 27 stations. The line will serve existing communities in established areas such as Turner's Station, Dundalk, Highlandtown, Canton, Fells Point, West Baltimore, Edmondson Village and Westview. In addition, commuters from western Baltimore County and Howard County will be able to access the line via stations near I-70 and the Beltway.

The new Red Line will...

- Improve travel times for existing transit riders on the most heavily traveled bus routes in the region. New riders will be attracted to transit because of fast and reliable service connecting downtown and suburban job centers with neighborhoods to the east and west.
- Improve access to Baltimore's economic growth and redevelopment areas at University Center on the west side of downtown, Inner Harbor East, Fells Point, Canton, and the Bayview Medical Campus.
- Strengthen neighborhood revitalization efforts in Dundalk, Patterson Park, Harlem Park, Highlandtown, and Woodlawn.

Estimated Travel Times (minutes) to Charles Center from:

Dundalk	15
Social Security	14
Edmondson Village	10
Highlandtown.....	8

Connecting It All Together in Downtown Baltimore

While population and employment have grown throughout the region, and particularly in the suburbs in the most recent decades, downtown Baltimore continues to have the greatest number of jobs of any area within the region. More than 100,000 people come to work every day in the central business district. The continued growth of our region will depend, in part, on the continuation of a vibrant, economically sound downtown core with excellent transportation access. With the Blue, Yellow, Green, and Red Lines all connecting downtown, residents throughout the region will be able to use the rail system to access not only the 100,000 jobs in downtown, but the more than 750,000 jobs within a short walking distance of stations throughout the region. See downtown focus map on page 28.



Green Line

The Green Line builds upon the existing Metro Subway between Owings Mills and Johns Hopkins Medical Campus. The new portion of the Green Line extends to White Marsh, and then via two separate branches to I-95 and Martin State Airport. The I-95 branch will include a commuter park-and-ride lot with direct access to I-95 north of the Beltway. The second branch will extend from White Marsh along the MD 43 corridor to Martin State Airport. An additional 17 miles and 14 new stations are needed to complete the Green Line. This line supports Smart Growth by serving established city and county neighborhoods like Northwood and Overlea, and growing communities like White Marsh. It also connects Baltimore County's two major growth areas – White Marsh and Owings Mills.

The new section of the Green Line will...

- Serve Morgan State University, a growing presence in Baltimore, rich with cultural heritage and a built-in ridership base of 7,000 students, faculty, and staff. The new Murphy Fine Arts Center and Morgan's planned redevelopment of the Northwood Shopping Plaza as a hospitality and tourism training center will generate additional walk-up ridership.
- Provide access to thousands of jobs in White Marsh and along the MD 43/Middle River Employment Corridor in Baltimore County. Improved accessibility to these jobs will sustain development in this corridor and enhance the region's economic base.
- Provide a fast and convenient transportation choice for commuters currently using Interstate 95 from northeastern Baltimore County and Harford County. A station with direct access to Interstate 95 will help ease congestion on this crowded roadway.
- Provide convenient service to existing neighborhoods along Loch Raven Boulevard, Perring Parkway, Harford Road, and Bel Air Road, where a high level of transit ridership and potential new ridership exists.

Estimated Travel Times (minutes) to Charles Center from:

I-95 Commuter Station	29
White Marsh	26
Morgan State University	11
Owings Mills	25

Connecting It All Together from Madison Square

The initiative to build a biotechnology research and industrial park in East Baltimore is a major opportunity for transit-oriented development. The project could bring as many as 8,000 new jobs to communities near the Madison Square Station. Serving them all will be the Green Line, with a fast connection to Johns Hopkins Medical Campus, downtown Baltimore and beyond. A quick connection to Penn Station along the Purple Line will provide easy access to BWI Airport, Washington, DC, and other major cities in the northeast corridor.



Yellow Line

In its entirety, the Yellow Line will run 42 miles from Hunt Valley to Columbia through downtown Baltimore and BWI Airport, with up to 46 stations. Two major segments of the Yellow Line already exist as part of the Central Light Rail Line, 6 miles from Hunt Valley to Lutherville, and 8 miles from Camden Yards to BWI Airport. New construction will be needed between Lutherville and Camden Yards in the York Road/Charles Street Corridor, and from BWI Airport to Columbia via Arundel Mills and the US 1 and MD 175 Corridors.

The northern section of the Yellow Line will...

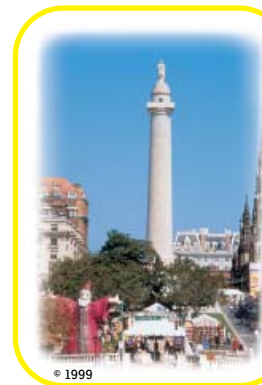
- Create a new 10-mile "Collegetown Corridor" from Towson to downtown Baltimore with stops at or near Goucher College, Towson University, Loyola College, College of Notre Dame, Johns Hopkins University, Maryland Institute College of Art, University of Baltimore, and the University of Maryland Baltimore.
- Serve diverse neighborhoods like Waverly, Charles Village, Mt. Vernon, Govans, Rodgers Forge, Stoneleigh, Towson, Lutherville and Timonium.
- Provide a direct connection between Penn Station and Charles Center, greatly enhancing access to downtown Baltimore for Amtrak and MARC riders.
- Provide a new Inner Harbor Station, immediately adjacent to many Inner Harbor attractions.

The new southern section of the Yellow Line will...

- Serve Arundel Mills Mall and other planned office and residential development in the MD 100 Corridor in Anne Arundel County.
- Support revitalization in Howard County's US 1 Corridor between Elkridge and Savage, and improve access to thousands of industrial and warehousing jobs in the area.
- Provide a direct connection between Columbia Town Center, the dense mixed-use hub of Howard County, and BWI Airport, with stops in several Columbia villages, at Merriweather Post Pavilion and in Columbia Gateway. Commuters will be able to transfer to the MARC Penn or Camden Lines at the BWI or Dorsey MARC stations, respectively.

Connecting It All Together at BWI Airport

Expansion plans at the BWI Airport call for a multi-modal transportation center to be built, connecting various points in the airport vicinity with a people-mover system. Until such time as the transportation center and people mover are built, there must always remain a direct connection of the rail system to the airport. When the center opens, the Yellow and Purple Lines, bus service, Maglev, and other forms of ground transportation will all come together for quick and convenient access to points within BWI Airport and throughout the Baltimore-Washington Corridor.



Estimated Travel Times (minutes) to Charles Center from:

Downtown Towson	18
Belvedere Square	12
Penn Station	4

Estimated Travel Times (minutes) to BWI Airport from:

Columbia Town Center	42
Arundel Mills	12
Downtown Baltimore	27

Blue Line

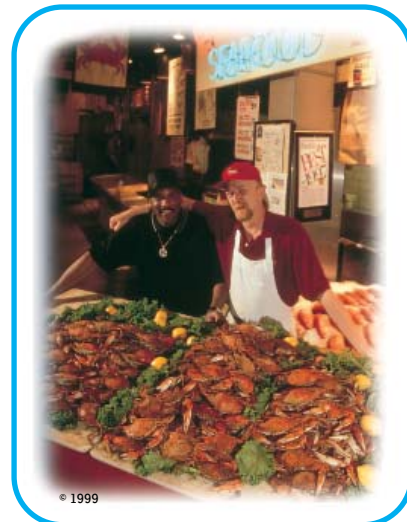
The Blue Line largely exists today as the Central Light Rail Line from Hunt Valley through the west side of downtown Baltimore to Cromwell Station in Glen Burnie. Under the recommended system Plan, Blue Line trains will continue to operate along 26 miles of track, stopping at 31 stations. A significant new feature of the Blue Line will be the connection from the north, directly into Penn Station. This new connection will allow for Blue Line trains to either continue to downtown on the existing Howard Street alignment, or connect to downtown on shared tracks with the Yellow Line between Penn Station and Camden Yards.

The Blue Line will...

- Continue to serve the many neighborhoods and destinations which Light Rail serves today, including both Baltimore City and County residential communities such as Timonium, Lutherville, Mt. Washington, Woodberry, Westport, Cherry Hill, Linthicum, and Ferndale.
- Improve speed and reliability of the Light Rail, particularly in the Howard Street Corridor. The double-tracking project currently underway will assist in meeting this goal.
- Improve access to the Westside revitalization area and provide excellent service to the Hippodrome Theatre, Lexington Market, Oriole Park and Ravens Stadium. Access to Federal Hill and South Baltimore will be improved when the Hamburg Street Station is opened on a year-round basis.

Estimated Travel Times (minutes) to Charles Center from:

Cromwell	25 minutes
Mt. Washington	15 minutes
Timonium	27 minutes
Linthicum.....	19 minutes



Connecting It All Together Through and Around Downtown Baltimore

Completion of the Blue Line, with a full connection at Penn Station and access to the Charles and St. Paul Street Corridor, together with the Yellow Line, will give maximum flexibility to service in and around downtown Baltimore. Any number of operating methods could be arranged under this scenario, such as :

- Creation of a continuous downtown loop connecting the various parts of downtown.
- Express, skip-stop, or limited service trains between Hunt Valley/Timonium and Penn Station/downtown Baltimore.
- Service from the north or south that alternates between the Howard Street Corridor and the Charles/St. Paul Street Corridor, eliminating the need for passengers to transfer from one line to another.

Purple Line

The Purple Line represents an opportunity to use the existing Amtrak Northeast Corridor in the Baltimore region for local rail transit service. MARC Penn Line train service using the Amtrak Corridor already provides an excellent transportation option between Baltimore and Washington for the long-distance commuter. This service will continue. The proposed Purple Line would capture a different transit market – local travel within the Baltimore region – and provide for up to five new stations.

The 38-mile Purple Line will...

- Implement a new urban-style rail service in the Amtrak Corridor currently used by the MARC Penn Line. Service would operate between Edgewood in Harford County to Penn Station and on to BWI Airport and Odenton in Anne Arundel County. Trains would operate throughout the day, and more frequently than current MARC service.
- Improve access to downtown Baltimore, Penn Station, and the Johns Hopkins Medical Campus for residents of Baltimore City, Baltimore and Harford Counties and provide an excellent reverse-commute opportunity to jobs along the Route 40 Corridor in Edgewood and Aberdeen.

Estimated Travel Times (minutes) to Charles Center from:

Edgewood	39 minutes
Rossville.....	23 minutes
Odenton.....	32 minutes

Connecting It All Together with Our Existing Resources

The Purple Line will increase transit ridership by maximizing the use of existing infrastructure investments and transportation assets. The proposed Purple Line would utilize the existing Amtrak Rail Corridor for local service.

The effort and investment necessary in the Purple Line Corridor will require significant coordination between MTA and Amtrak to ensure a proper balance between long distance commuter, Northeast Corridor passenger, local transit and freight needs. As planning is performed for the Purple Line, consistency with Amtrak and freight master plans must be accomplished.



Orange Line

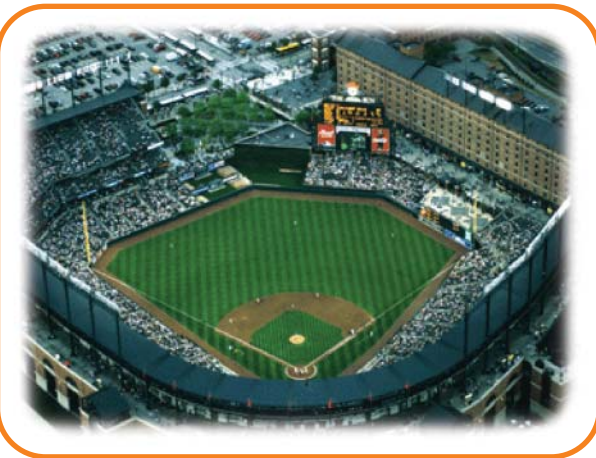
The Orange Line represents an opportunity to utilize the existing CSX Corridor in the Baltimore region for additional rail transit service. MARC Camden Line train service using the CSX Corridor already provides an excellent transportation option between Baltimore and Washington for the long-distance commuter. The proposed Orange Line would capture a different transit market – local travel within the Baltimore region in southwestern Baltimore County and northeastern Howard County.

The 11-mile Orange Line will...

- Implement a new urban-style rail service in the CSX right-of-way currently used by the MARC Camden Line. Service would operate between Dorsey and Camden Yards. Trains would operate throughout the day and more frequently than current MARC service.
- Improve access to downtown Baltimore, and the rail system for residents of southwestern Baltimore City and Baltimore County and northeastern Howard County.
- Link UMBC with downtown Baltimore and many of the other colleges and universities in the region via the Yellow Line.

Estimated Travel Times (minutes) to Charles Center from:

Dorsey	25 minutes
Lansdowne	12 minutes



Connecting It All Together at Camden Yards

One of the goals in building this rail system is to provide access to as many of the region's life activities as possible, for as many citizens as possible. To accomplish this goal, it is important to optimize connectivity between rail lines. Camden Yards represents one of eleven locations where two or more rail lines meet. In this case, the Orange, Blue and Yellow Lines and MARC Train service all converge at Camden Yards. Should Maglev be constructed, the Baltimore station will be located here as well.



"Connecting many of the colleges and universities in the Baltimore region through this rail system will solidify Baltimore's reputation as a 'college town' by increasing access to, and awareness among, all of the outstanding academic institutions in this region."

Mark Behm, Vice President
University of Maryland Baltimore County

Implementing the Orange and Purple Lines

The recommended Baltimore Region Rail System Plan calls for an Orange and a Purple Line that parallel segments of the existing MARC Camden and Penn Lines, respectively. It is envisioned that an "urban transit" vehicle and service not currently in operation in the Baltimore area will be introduced into these two corridors. Under the Plan, MARC Train service would be maintained largely as it exists today, with the potential for some new or enhanced stations along the existing MARC lines.

How would this "urban transit" be different than MARC, Metro Subway, or Light Rail? These new lines would likely be most similar to the look of a MARC Train, with some subtle differences, such as additional doors for passenger loading and different seating arrangements. The train would probably be operated by a single conductor and a diesel multiple unit (DMU) or electric multiple unit (EMU) would propel the train.

To achieve the result recommended by the Advisory Committee, the Orange and Purple Lines would run with greater frequency than MARC Trains. Frequent service would be provided throughout the day and evening and service would operate seven days per week. Additional stations would be built to serve communities along these rail lines.

There is ample precedent for side-by-side rail or concurrent long-distance and local transit operations in the U.S. and around the world. Parts of the SEPTA lines in Philadelphia and the Bakerloo Line on the London Underground currently operate under similar arrangements. Further project-specific study and extensive coordination with Amtrak, CSX, and Norfolk Southern will determine exactly how such service could be implemented in the Baltimore region.



About Travel Times

The travel times provided in this report are based on the system concepts urged by the Committee and on MTA's most recent experience with Light Rail and Metro Subway. The Advisory Committee recognizes that precise travel times cannot be calculated for new lines in the Baltimore Region Rail System Plan, because the Plan does not specify alignments. However, the Committee believes that it is important to have a sense of potential rail travel times to compare with road travel times. The Committee designed its plan to make a transit trip as competitive as possible with the automobile with regard to speed and reliability.

Precise travel times for any new segment or entirely new rail line will depend upon a variety of factors. The extent to which a rail line is in a totally separate right-of-way from all other traffic, as urged by the Committee, will have the greatest impact on overall travel time. The Metro Subway is totally separated from traffic, while the Light Rail has sections that operate in former railroad corridors and are mostly separated from traffic and sections that are in mixed traffic, such as Howard Street in downtown Baltimore and Hunt Valley. Other factors that affect travel time include the number of stations and the amount of time spent loading and unloading passengers at each stop, as well as the number of curves, steep grades, and inclines on which the train must adjust its speed and power to navigate. Calculation of exact travel times can be made once specific alignments have been determined.

Serving Our Region Well

The Guiding Principles established by the Advisory Committee collectively helped to shape the number and location of rail lines in the system Plan. This section summarizes how the Baltimore Region Rail System will improve quality of life for residents and workers in the region, contribute to economic growth, and support neighborhood revitalization efforts.

1. The rail system must serve corridors with high concentrations of population.

- More than 850,000 residents of the region – 34% of the total regional population – will live within 1 mile of a transit station.
- Fast and reliable transit will be provided to many of the Baltimore region's existing and planned communities.

2. The rail system must serve major employment centers.

- More than half (750,000) of the region's 1.4 million jobs will be within 1 mile of a station.
- Major employment areas, such as Hunt Valley, Towson, Columbia, BWI Airport, Woodlawn, Owings Mills, White Marsh, and downtown Baltimore, will be connected to each other through the rail system. Emerging employment centers in Middle River, Inner Harbor East, Edgewood, and the US 1 Corridor are all to be served by the rail system.

3. The rail system must serve congested corridors.

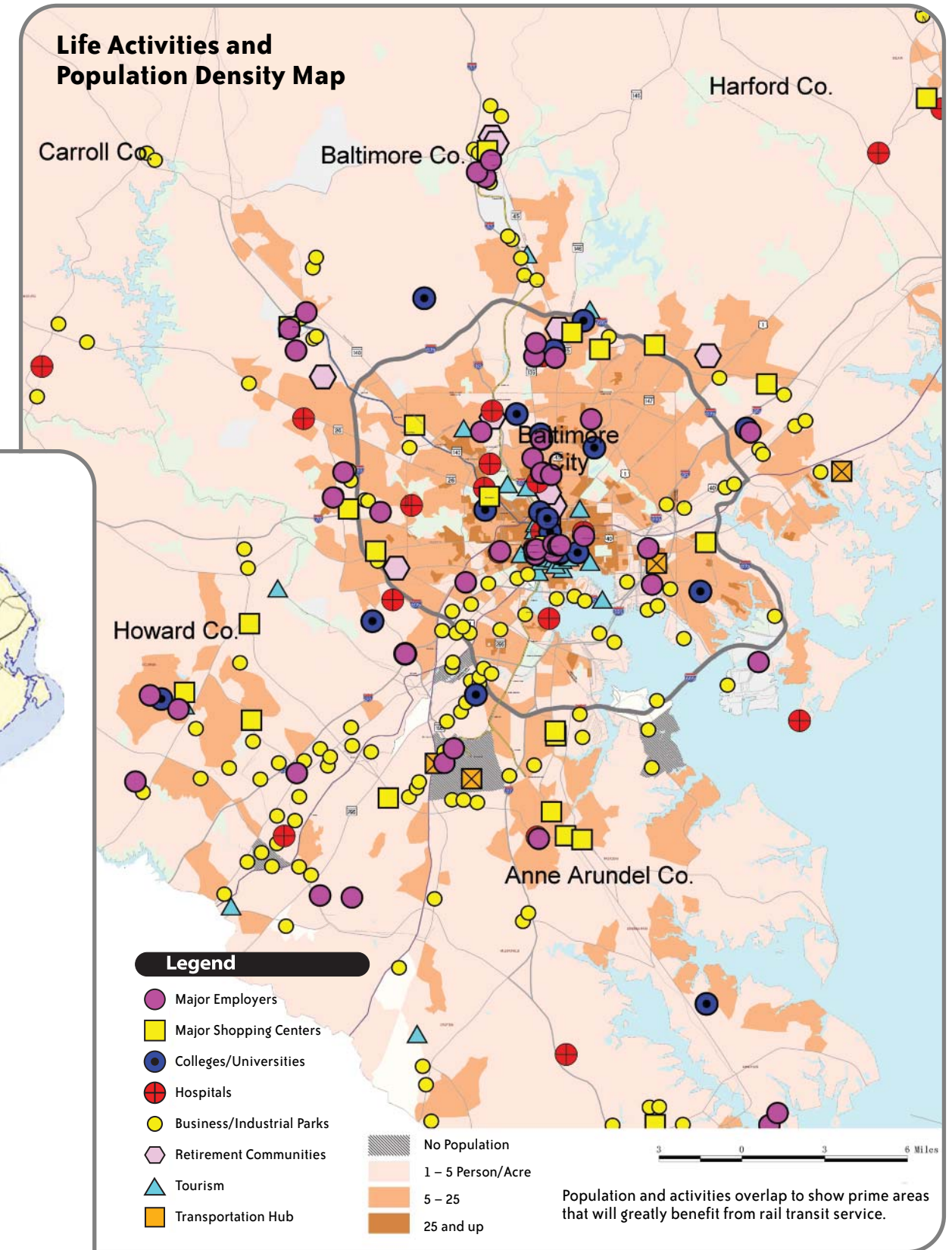
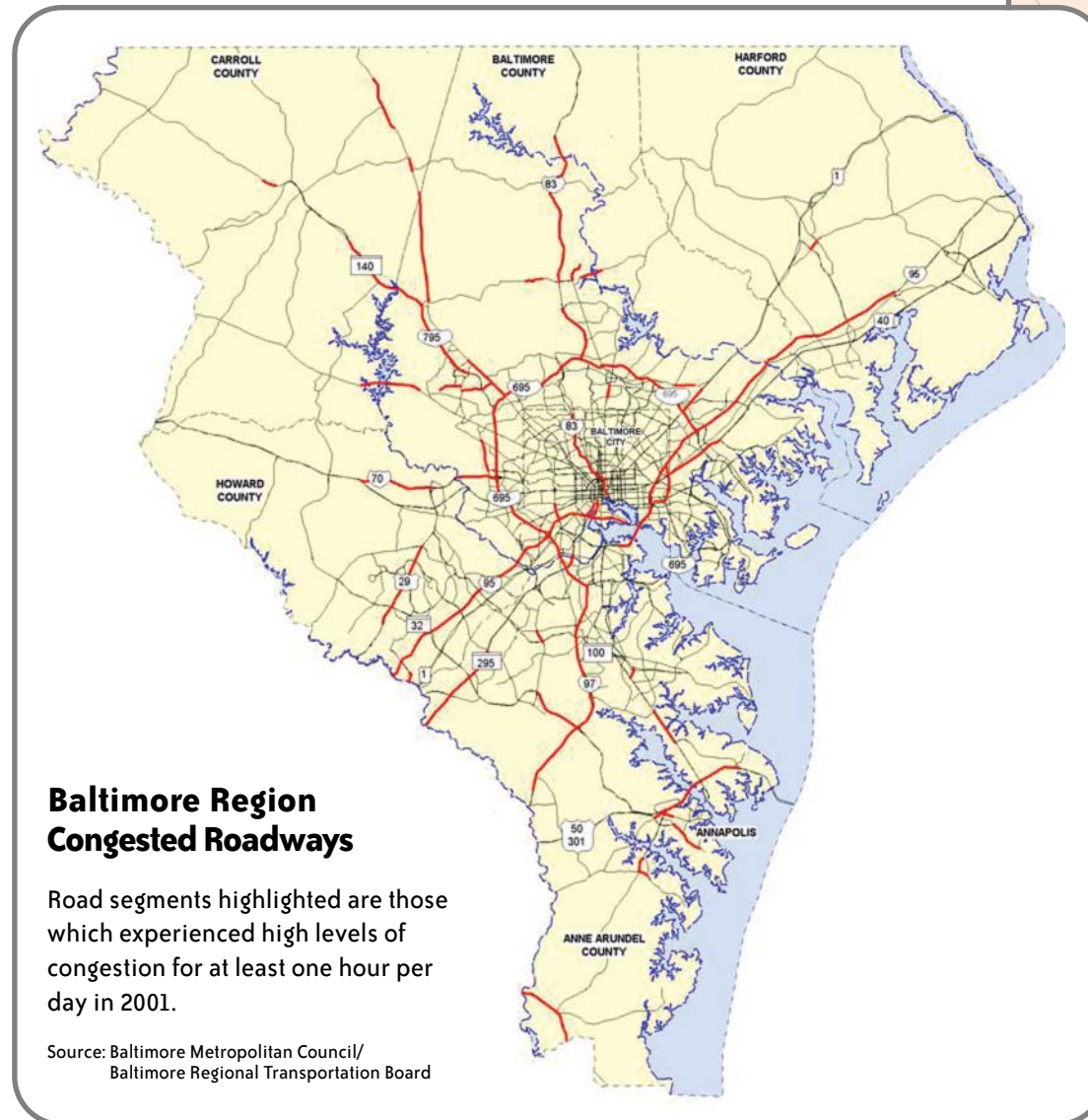
- Many drivers on major roadways, such as the Beltway, I-95, I-70, US 40, US 1, and I-83 will have a fast, convenient, and reliable option to reach their destination.
- Though use of the rail lines will not eliminate highway congestion, it can reduce the need to build more roads. Building this system will help to improve air quality and the health of the Chesapeake Bay.

"No single transportation strategy will solve our region's traffic congestion problems. We must have a balanced transportation system, including this extensive rail network, that gives people choices in how to get around the Baltimore region."

James Harkins, Harford County Executive

4. The rail system must serve major activity centers, universities, hospitals, shopping centers, tourist attractions and entertainment centers.

- 21 colleges, 18 hospitals, 16 museums, 13 malls, 8 theatres, 8 parks, 2 stadiums, and the Inner Harbor are all within easy walking distance of a proposed or existing rail station.
- An easy-to-understand rail system that goes to the region's key destinations will entice residents and tourists to make transit their travel mode of choice.

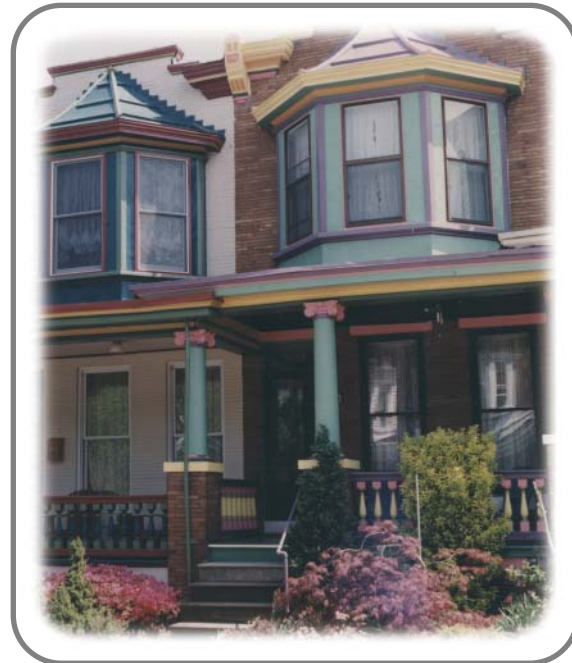


"The fundamental purpose of Baltimore's rail system must be to serve a variety of activities in the daily lives of the region's citizens."

Dr. Earl Richardson
President, Morgan State University

5. The rail system must support existing land use and major targeted growth areas.

- All of the rail system lines are located within designated Priority Funding Areas or "Smart Growth" areas where public infrastructure exists or is planned.
- Concentrating mixed-use development around stations will create lively commercial and residential centers that generate transit ridership throughout the day. Major opportunities for new transit-oriented development (TOD) are likely to occur at Arundel Mills, White Marsh, and Westview. Significant TOD also occurs within Baltimore City – both downtown and among the neighborhoods.
- Property values will increase near new transit stations, making older neighborhoods an attractive investment for potential residents and business owners. Building this rail system could aid revitalization in areas such as Edmondson Village, Dundalk, Middle River, and Waverly.



- Current Metro and Light Rail lines will be extended, thereby reducing the need to acquire additional rail vehicles. Some new lines may be built in existing railroad right-of-way.

6. The rail system must meet the needs of the transit-dependent population.

- Basic mobility will be provided for the region's citizens in greatest need – the elderly, people with health problems and disabilities, low-income residents, and people without an automobile. All rail vehicles will easily accommodate disabled individuals.
- Jobs and services previously inaccessible by transit – or a long bus ride away – will now be served by fast and reliable rail service.

7. The rail system must optimize the use of the existing system.

- Improvements to existing rail service are already underway, including the double-tracking of Light Rail and the overhaul of Metro Subway cars. Additional enhancements are recommended by the Advisory Committee to improve speed, convenience, and reliability of existing services.



8. The rail system must be seamless for the transit rider.

- Easy connections among the rail lines will be made at well-designed transfer stations. An extensive bus network will provide access to locations just beyond the reach of the rail system, and provide an easy way to get to and from stations.
- Maryland SmartTrip, a new "Smart Card" fare collection system, will allow riders to transfer quickly from one rail line or transit system to another throughout the Maryland and the Washington region.

9. The rail system must provide a trip which is as competitive as possible with the automobile, with respect to speed and reliability.

- Rail lines will be separated from street traffic wherever possible, meaning that trains will not have to stop for traffic lights or street crossings.
- As traffic congestion gets worse, the rail system will provide a fast, convenient, reliable, and cheaper alternative to driving.

10. The rail system must attract new riders to transit and contribute to Maryland's goal of doubling transit ridership.

- The creation of a comprehensive rail system will improve access for 440,000 jobs in the region not currently served by rail transit.
- The current rail systems – Metro Subway, Light Rail, and MARC Trains – already serve more than 96,000 people per day in the Baltimore region. New rail services to additional places in the region can be expected to have similar success.



The Economic Benefits of the Baltimore Region Rail System

Significant economic growth for the Baltimore area can be expected as the Baltimore Region Rail System is built. Improved accessibility to jobs throughout the region, reduced business costs from people and goods waiting in traffic congestion, and increased employment will all result from a sustained public investment in new rail lines. Based on the recommended system plan, Transportation Economics & Management Systems, Inc. of Frederick, Maryland projects that over the next twenty years:

- Between 6,900 and 12,800 new jobs will be created by the economic ripple effect of construction activity, improved access and mobility throughout the region, and an enhanced business climate.
- Personal income in the region will increase by \$113 to \$209 million as a result of new employment and the increased profitability of businesses. This figure reflects the aggregate increase of all persons in the region.
- Property values will increase by \$641 million to \$1.2 billion as commercial and residential development take hold near new and existing rail stations.

"We must aggressively and smartly turn this plan into a reality if we are to realize neighborhood and business growth in Baltimore."

C. William Struever, CEO
Struever Bros. Eccles & Rouse

Building on Baltimore's Transit Successes

Significant investments by local, State, and federal government have been made in rail transit in the Baltimore region. The Metro Subway, initially opened in 1983, extended to Owings Mills in 1987 and to Johns Hopkins Medical Campus in 1993, cost \$1.3 billion to construct. The Central Light Rail Line, initially opened in 1992, with extensions to Hunt Valley, BWI Airport and Penn Station in 1997, cost \$470 million to build. MARC Commuter Rail Trains providing service from Cecil, Harford, Baltimore, Anne Arundel and Howard Counties to Baltimore City and to Washington D.C. have seen record investments as well in expanded parking and enhanced stations, new bi-level coaches, and additional daily trips.

These investments have paid off for the Baltimore region. More than 96,000 people per day use the Metro Subway, Light Rail, and MARC Train within the Baltimore area. In addition, the MTA operates a comprehensive system of local, express, commuter, and shuttle bus services in the Baltimore region, comprising over 70 individual routes and carrying over 250,000 passenger trips per weekday. Taken together, these services contribute to the region's high quality of life and relatively low cost of living. Good transit service keeps much local traffic off the road, keeping needed highway capacity for freight moving in and out of the Port of Baltimore and BWI Airport. More residents have access to jobs and services than they would without transit.

Baltimore Region Weekday Transit Ridership in 2002

Metro Subway	50,000
Light Rail	30,000
MARC Train	16,000
Core Bus	250,000
Total	346,000

Yet more can be done to take advantage of our existing rail transit infrastructure. Efforts to maintain our existing system and improve speed, reliability, and service quality all must be made simultaneously with rail expansion. The Committee recommends the following:

Complete double tracking projects for Light Rail.

The State and federal government are investing \$150 million to add a second track to existing single-track sections of the Light Rail. When completed in 2007, this project will allow trains to traverse the entire line without having to wait for another train to pass. In turn, this will improve the reliability of the system for MTA customers.



Improve travel times of Light Rail along Howard Street.

Travel times through downtown Baltimore are reduced because of cross-street traffic on major arteries such as Franklin, Mulberry, Lombard and Pratt Streets. The City of Baltimore and MTA should work together to make changes to the signal system, which will give Light Rail trains carrying many riders priority over cross-traffic.

The City of Baltimore and MTA should work together to make the necessary enhancements to the traffic signal system and Light Rail operating system to improve the flow of vehicular, pedestrian, and Light Rail traffic. The primary objective of this effort should be to significantly reduce the travel time of Light Rail in the Howard Street corridor.

Improve connections between the Blue and Green Lines, particularly at the Lexington Market Station.

As part of the Westside revitalization efforts, MTA should make improvements to its Lexington Market Light Rail and Metro Stations, such as moving the northbound and southbound Light Rail platforms closer together and providing better signage directing potential patrons between the stations. These improvements, too, will require the assistance of the City of Baltimore.

Provide direct Light Rail service from Hunt Valley to BWI Airport.

Light Rail trains currently operate from BWI Airport to Penn Station and from Cromwell Station to Hunt Valley. To better serve passengers moving between the airport and northern Baltimore County, service should be provided directly from BWI to Hunt Valley, thus no longer requiring a transfer and an 8-minute wait between trains.



Open the Hamburg Street Blue Line Station for year-round daily use.

Upon the completion of the Light Rail double-track project, MTA should open the Hamburg Street Station for daily use. The station now opens only for Ravens' football games and other major stadium events. Opening this station will provide access to the entire rail system for residents of South Baltimore.

Improve MARC Train service by increasing Penn Line service in the direction of Perryville, adding mid-day trips to the Camden Line, and operating weekend service on one or both lines.

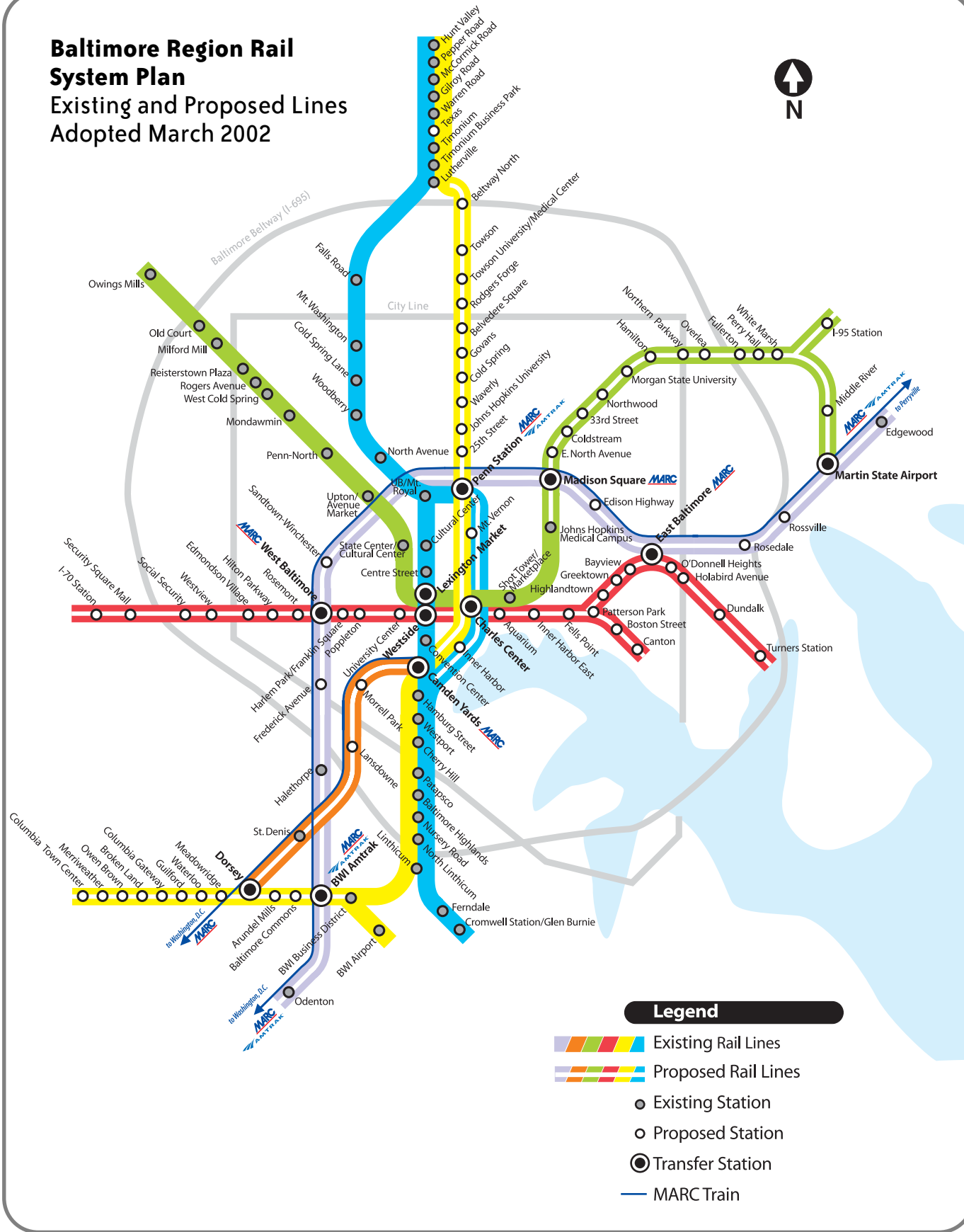
Serving these additional markets will contribute to the goal of doubling transit ridership in the short-term, using infrastructure that already exists. Coordination with Amtrak, CSX, and Norfolk Southern will be required, as will the identification of additional operating funds for these services.

Improve existing and add new stations along existing MARC lines.

Increased demand for service on the MARC trains continues to outstrip capacity for parking at many stations, while certain stations remain well under-utilized. Other areas along the MARC lines sit strategically in the midst of potential development and growth areas. MTA should consider making improvements to stations such as St. Denis on the Camden Line to relieve demand at nearby stations. Further, MTA should consider investing in new stations such as Perryman and East Baltimore to aid economic development efforts in Harford County and Baltimore City, respectively. These stations, too, will require significant coordination with the passenger and freight railroads.



Baltimore Region Rail System Plan
Existing and Proposed Lines
Adopted March 2002



Connecting It All Together

Today, the backbone of Baltimore's transit system is an extensive network of bus services. Tomorrow's transit network will be a system of well-connected rail lines moving people quickly and conveniently throughout the Baltimore region. Good connections within the rail system are of the utmost importance. The key transit hubs – Camden Station, Penn Station, West Baltimore, Madison Square, Lexington Market, and Charles Center – will provide for a direct transfer from one line to another. Each of these major transfer points must take advantage of the high volume of people coming and going at once, with a host of services and excellent customer information.

Feeding into the rail lines will be a network of neighborhood shuttles and feeder bus services. Successful connections between rail lines and bus service already exist in the Baltimore region today. More than 40% of people using the Metro between Owings Mills and Johns Hopkins Medical Campus use one of the "M-Line" feeder buses. MTA's new neighborhood shuttles in Hampden and Mondawmin have proven to be effective feeder services for the Light Rail and Metro. The MTA should adjust bus routes as appropriate to serve new rail lines; and, we recommend that MTA continue to advance its neighborhood shuttle program. Bus Rapid

Transit could be used as both a feeder service to the rail system and as a precursor to rail projects that may be many years away.

A first-class transit system must also provide opportunities for bicyclists and pedestrians to access the system from nearby neighborhoods, schools, and businesses. Well-maintained sidewalks, good street lighting, bicycle racks, and rail cars that can accommodate bicycles must also be a part of the network of transit services.



The Baltimore-Washington Connection

More and more, the Baltimore and Washington regions are growing together. Taken together, Baltimore and Washington represent the fourth largest metropolitan area in the United States. Thousands of people commute back and forth between the two cities and regions every day. Our economies and our future are linked together. Witness the following:

- Commuters from Anne Arundel and Howard Counties are almost evenly split between jobs in the Baltimore area and jobs in the Washington area. Traffic congestion persists on major roadways like I-95 and the Baltimore-Washington Parkway; MARC Train and commuter bus ridership to the two major cities is at its highest levels ever.
- Major institutions once thought of as belonging to one jurisdiction are quickly expanding to others. Baltimore's Johns Hopkins University is establishing satellite medical and educational campuses in Howard and Montgomery Counties; the National Institutes of Health, headquartered in Bethesda, is investing in a major facility at the Bayview Medical Campus. Tying it all together is BWI Airport, one of the fastest growing airports in the United States.
- The two regions share many cultural, educational, and environmental resources and opportunities—the Baltimore Orioles, the Baltimore Symphony Orchestra, the Chesapeake Bay, and the University of Maryland to name a few.

Expanding the rail network in the Baltimore region will expand the links between Baltimore and Washington. When arriving at Union Station in Washington, you can get to just about any part of the city, suburban Maryland, or northern Virginia by transferring to the Washington Metro. In the future, arriving at Penn or Camden Station in Baltimore will offer much the same opportunity.

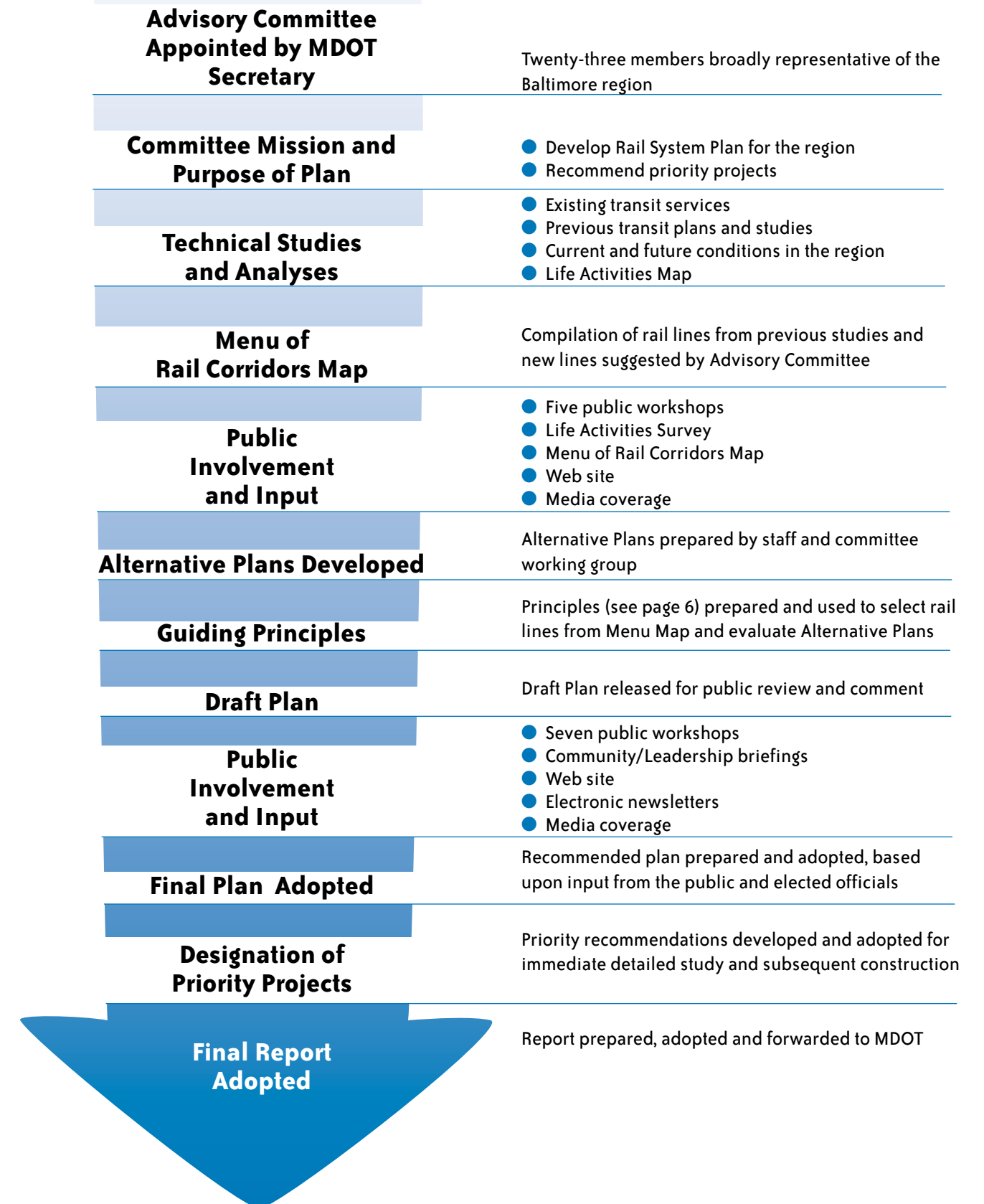
Linking the two regions also means better access to places in between, like Odenton, Columbia, and BWI Airport. Improved service between Baltimore and Washington along the MARC Penn and Camden Lines, as contained in our recommendations, as well as expansions to the Baltimore rail system such as the Yellow Line, accomplish this goal. Access to the rail system will be further enhanced with connections to local bus systems such as Howard Transit and Corridor Transit in the Laurel area.

"Howard and Anne Arundel Counties are the link between the Baltimore and Washington regions. This rail system and improvements to MARC Train services will reinforce the ties that bind these two vital communities."

James N. Robey
Howard County Executive

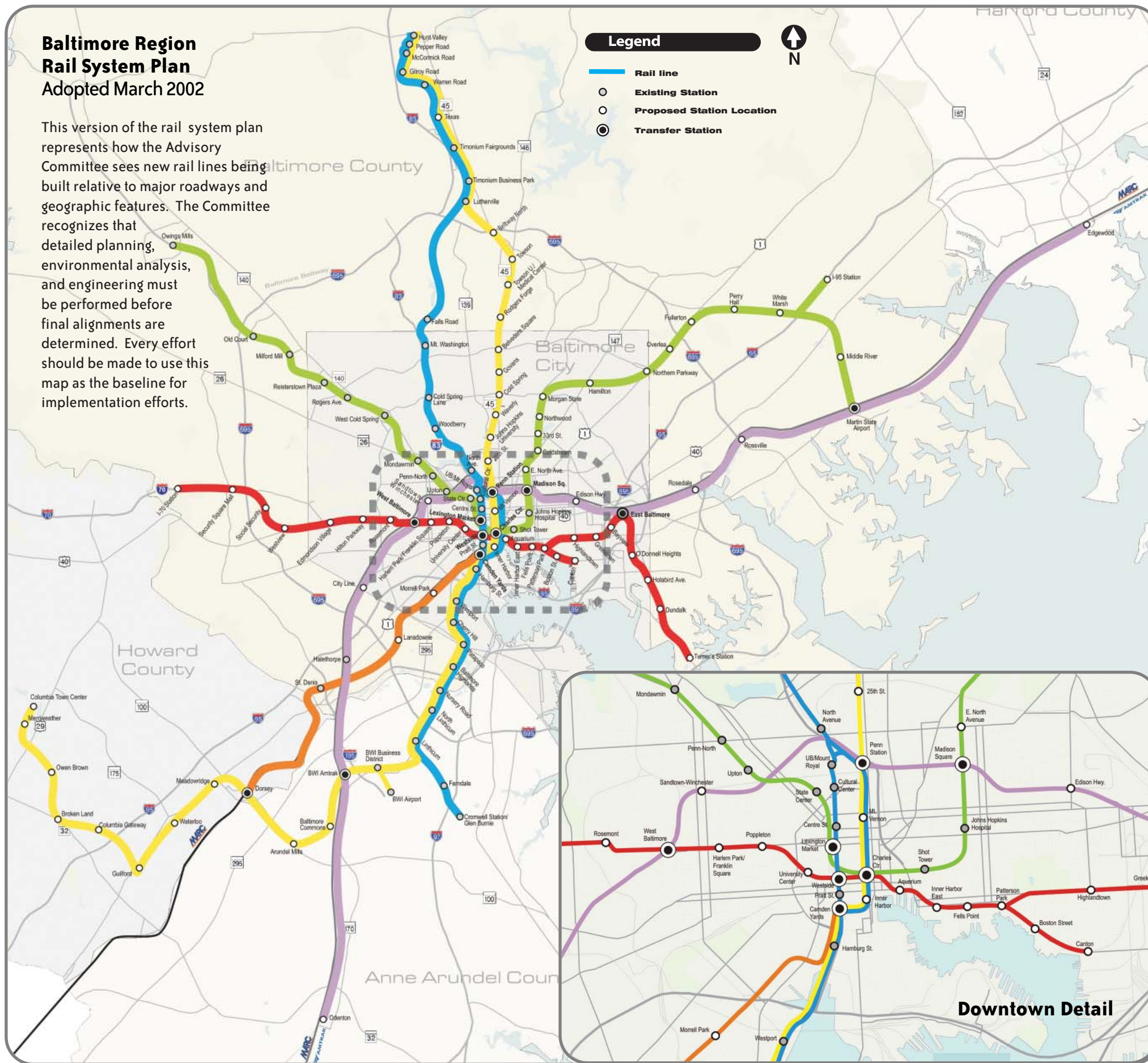


Preparing the Plan



Baltimore Region Rail System Plan Adopted March 2002

This version of the rail system plan represents how the Advisory Committee sees new rail lines being built relative to major roadways and geographic features. The Committee recognizes that detailed planning, environmental analysis, and engineering must be performed before final alignments are determined. Every effort should be made to use this map as the baseline for implementation efforts.



Next Steps

"If we are to complete this regional rail system in the future, we must start taking the necessary actions that will enable us to accomplish our goal...studies should be done to establish the exact path of the rail lines and locations of future stations...[this] will give governments the ability to preserve the rights-of-way needed for the project. The alignment could be included as part of a jurisdiction's master plan."

Janet Owens
Anne Arundel County Executive

Plans are not self-fulfilling. Converting the concepts and the recommendations of the Baltimore Region Rail System Plan into operating rail lines will require consistent and dedicated involvement of many public and private sector leaders and ongoing public advocacy. For these reasons, the Committee recommends the following actions be taken to keep implementation of the rail system plan "on track":

Begin Immediately to Plan, Design, and Construct Priority Projects

MTA should begin environmental analysis, planning, and design studies resulting in the construction of the following Phase I priority projects:

- Red Line from Social Security Complex to Fells Point
- Green Line from Johns Hopkins Medical Campus to Morgan State University
- Purple Line from the proposed Madison Square Station to Martin State Airport

MTA should initiate efforts necessary to enhance existing rail services. The cooperation of local governments and railroad owners will be key to improved service on Light Rail and MARC Trains, respectively. Coordinated improvements with Baltimore City and private developers will enhance the connectivity of Light Rail and Metro Subway at Lexington Market.

Once project planning studies are underway for the priority projects, MTA should work with local governments to perform feasibility studies for new sections of rail lines not included in the priority project recommendations. These studies will identify likely rights-of-way and station locations for inclusion in local comprehensive plans.

Maintain Projects in Each Phase of Project Pipeline

As construction begins on the Phase I priority projects, MTA should begin project planning on the Committee's Phase II Priority recommendations:

- Yellow Line from Camden Yards Station to Johns Hopkins University
- Blue Line connection to Penn Station

As planning and design work nears completion on the Phase II Priority Recommendations, MTA should continue advancing the remainder of the proposed projects until the entire proposed system is planned, designed and built. There should always be projects in the planning, design and construction stages until the entire regional rail network is constructed and operating.

Secure Funding to Build the System

Federal, State and local sources of funds will be required to pay for the estimated \$2.5 billion cost of the Phase I priority project recommendations and the \$9.5 billion cost of the remainder of the planned improvements.

The Committee recommends:

- Obtaining, with the strong support of Maryland's Congressional Delegation, congressional authorization and federal funding for the priority projects during the Federal Surface Transportation Act (TEA-21) reauthorization in fall 2003 and in subsequent appropriations cycles. MDOT and the Congressional Delegation must also seek to preserve federal funding ratios. While highway projects are generally funded with 90% federal funds and 10% non-federal funds, major transit projects generally receive 70% federal funds or less. Some proposals for TEA-21 reauthorization would further reduce the federal contribution. Further, MTA must make a compelling case for "New Starts" funding as the number of potential rail projects across the country continues to increase dramatically.
- That MDOT initiate a review of possible new funding strategies that can supplement the many program priorities currently supported by the Maryland Transportation Trust Fund. This review should explore funding strategies used in other states to deliver major transportation systems and programs. Working with the General Assembly, the Department should move aggressively to put in place a funding framework that will allow Maryland to better compete for federal transportation funds for major new transit projects.
- Working within the consolidated, multimodal structure of the Maryland Transportation Trust Fund to secure the necessary State funds to build the rail system.
- That local governments and the private sector contribute financially, through dedication of rights-of-way, participation in transit joint-development projects, and by direct financial contributions, to achieve implementation of the Plan. Similar contributions were made during the construction of Metro Subway and the Light Rail Line.

Leverage Other Public and Private Sector Investments in the Railroad Infrastructure

Decisions and investments made over the next few decades by and about entities such as Amtrak, CSX and other public and private enterprises could have a positive and synergistic impact on building the proposed rail system. MTA should actively participate in the planning, negotiation and decision-making regarding the railroad infrastructure to assure that these actions help implement the Baltimore Region Rail System Plan.

Protect Potential Rights-of-Way for Future Rail Lines

As recommended feasibility studies determine likely alignments, rights-of-way and station areas needed for future rail lines, local governments should take action to preserve the land that ultimately will be needed for construction. Primarily, this will require action by local legislative bodies to include these projects and rights-of-way in local comprehensive plans. Simultaneously, local governments should also consider instituting land use policies (i.e., increased density and mixed-use zoning) that will support rail expansion.

Secure Local Government Participation

The State cannot and should not attempt to implement this Plan and its recommendations without the substantive involvement of the region's local governments. There are many roles to be performed by county and city governments to build the recommended rail system. For example:

- Incorporate this Plan in comprehensive plans, area plans, project designs, review and approval of private developments.
- Locate pedestrian and bike paths to connect neighborhoods to rail stations.
- Enact regulations that allow transit-oriented development by shaping land use to be transit-friendly in advance of the construction of rail lines and stations.
- Participate in MTA's project planning, environmental, and engineering studies and support efforts to involve the public in these studies.
- Work with, and build a consensus of support for, new rail lines and stations among local community organizations.

Engage the Private Sector in Station-Area Development

This Plan should become a starting point in the planning, design and construction of private developments. Station areas will create opportunities for transit-friendly, mixed use and higher density development projects. The private sector can help by protecting and dedicating rights-of-way and station areas. Public/private joint-development projects should be pursued at key locations.

Sustain Public Involvement & Advocacy

Early and sustained public participation will be key to the successful accomplishment of this Plan. MTA is urged to continue the commitment to public involvement that was most helpful in preparation of this plan. The Committee urges private sector interests to establish an advocacy group that will continue to monitor and promote implementation of this plan.

Cost of the Plan



The overall estimate of capital costs to design and construct the rail system is preliminarily estimated at \$12 billion. Of course, economies can be achieved through any number of decisions relating to these investments. Detailed capital costs for the rail system can only be determined as each individual project is taken into project planning and engineering. However, the Advisory Committee believes that it is important that the region's leaders understand the relative costs of completing this Plan and the method by which these figures were derived. In any event, a sustained financial commitment is necessary to achieve this Plan.

Two types of rail projects are assumed by this Plan - those requiring completely new construction in new rights-of-way, and those that may occur in existing rights-of-way and/or on existing tracks. It is likely that new portions of the Blue, Yellow, Red, and Green Lines will likely be constructed as either Metro or Light Rail and operate as independently as possible from any other transportation use. The Committee's recommendations for the Purple and Orange Lines suggest that they operate in the same corridor as passenger and freight railroads, in the Amtrak Northeast Corridor and CSX Corridors, respectively.

The anticipated capital costs of construction should be viewed differently for each of these two situations. For the Blue, Yellow, Red, and Green Lines, capital costs were estimated using national and local experience in the construction of rail transit.

An overall per mile cost was determined which is inclusive of all project elements including design, right-of-way, rail cars, and construction. Capital costs are heavily dependent on the type of construction. For the Baltimore Region Rail System Plan, an estimated per mile cost for subway of \$250 million, a per mile cost for aerial structure of \$100 million, and a per mile cost for at-grade of \$50 million were used. For each segment of new construction in the Rail System Plan, a conceptual determination was made as to whether the segment would be constructed in tunnel, aerial or at-grade and the corresponding per mile unit cost was applied.

This assessment of construction type was heavily influenced by the Advisory Committee's recommendation that new rail lines be as fast and reliable as possible, indicating that a significant amount of rail in independent right-of-way was desired. Based on the methodology described above, a total cost of \$10 billion was calculated for the Blue, Yellow, Green, and Red Lines in 2002 dollars.

The Advisory Committee's recommendation that new rail lines be as fast and reliable as possible, indicates that a significant amount of rail in independent right-of-way is desired.

The capital costs for the Purple and Orange Lines cannot be specifically estimated at this time. There may be certain portions of the Amtrak and CSX Corridors where the capital requirements could be less expensive than new rail construction. It is believed that some existing track capacity in these corridors could be conducive to operating both local, regional and long-distance passenger service and freight service. Decisions on expansion within the railroad corridors would be

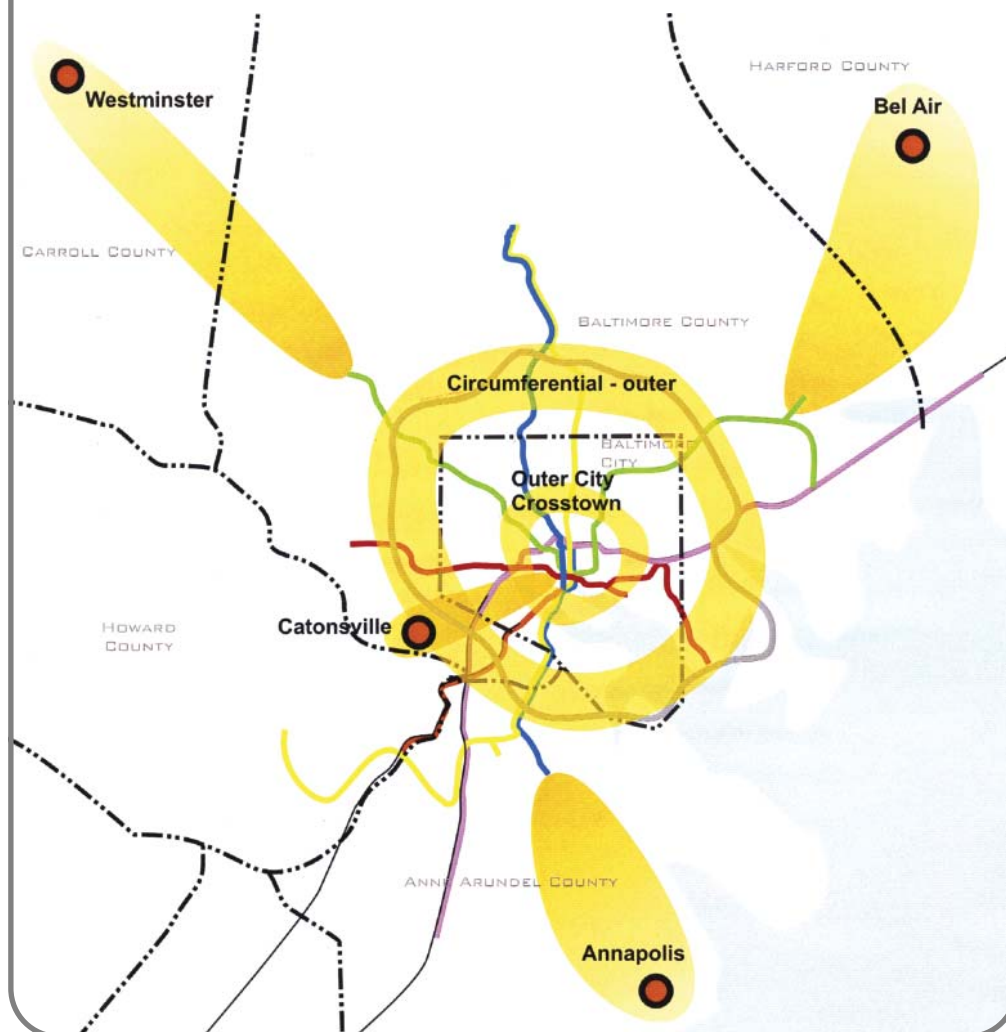
based on discussions and negotiations with Amtrak, CSX and Norfolk Southern, including how rail transit expansion relates to their long-term master plans. Since it is impossible to predict or estimate actual rail transit costs for these two corridors, a \$2 billion cost allocation was assigned for rail transit in these corridors, with specific infrastructure improvements to be determined based on future discussions with the railroads and more precise project planning.

A Vision for Long-Term Rail Expansion

The Advisory Committee has put forth a comprehensive and ambitious Regional Rail Plan that may take 40 years to build. In arriving at this Plan, the Committee had to make difficult choices to produce a comprehensive and achievable system Plan from the many suggestions offered for rail lines. The Guiding Principles served as the criteria that helped the Committee decide on the lines that are part of the recommended Plan.

The Committee believes that what is accomplished by successful implementation of the Plan over the next 40 years may lead to the need for further expansion beyond this timeframe. Additions to the Baltimore Regional Rail System Plan that may be warranted in the future include extensions of rail service to Annapolis, Bel Air, Catonsville and Westminster. Likewise, inner (Cold Spring Lane, Northern Parkway) and outer (Beltway) circumferential routes may become necessary in the future. Also, increased connections between the Baltimore and Washington regions may be needed.

Baltimore Region Rail System Plan
Potential Long-Term Rail System Expansion
Adopted March 2002



These corridors are not yet ripe for rail infrastructure or must be considered as a lower-priority than building a core system serving the region's existing activity centers and those currently under development. As it relates to circumferential routings or cross-town rail routes that do not directly serve the downtown, the Committee believes that the basic radially-oriented system must first be developed, including certain elements that connect core markets such as Columbia. Only once these radial lines are in operation and land use patterns adjust to these rail lines, would rail transit competitively and cost-effectively serve the suburb-to-suburb market. For rail lines to serve locations distant from the city center, such as Annapolis, Bel Air, and Westminster, land use patterns in these corridors must begin to reflect the development intensity and mixed-uses necessary to sustain rail transit. In the meantime, the Baltimore region must build the core of a regional rail network proposed by this report.

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