Chapter 7
Future Transit Development

INTRODUCTION

This chapter presents information about future transit developments in the region that will likely take place beyond the time period covered by this TDP. The TDP plan addresses the current fleet issues, restructure and improve the local services in the region, and sets the stage for these next developments.

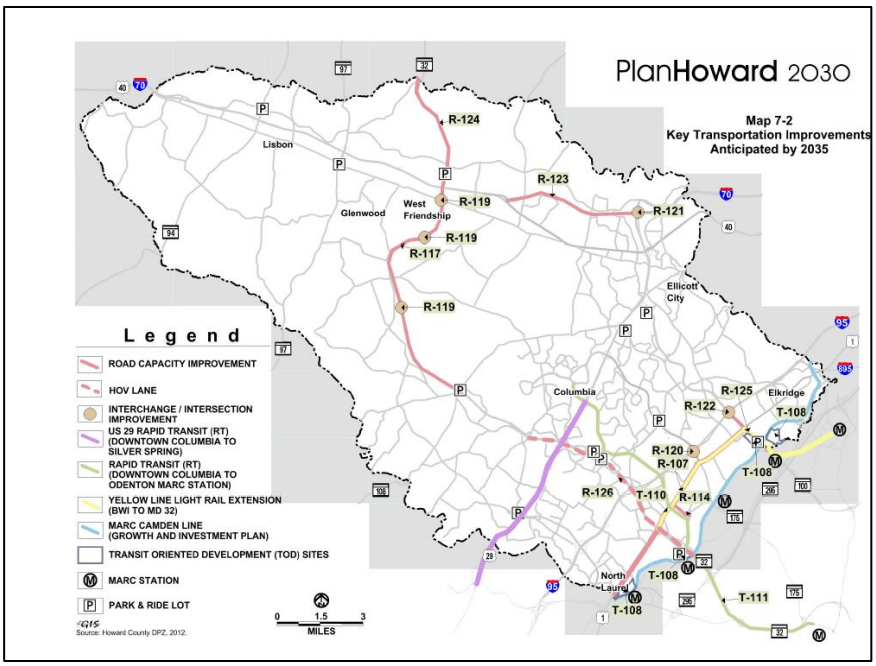
BUS RAPID TRANSIT - BRT

Introduction

In 2012, *Plan Howard 2030*, Howard County's general plan identified three rapid transit corridors for further study, as seen in Exhibit 7-1. These three corridors were identified to address three primary concerns:

- Addressing congestion on the US 29 Corridor
- Providing better regional transit along the county's commercial corridors
- Enhancing transportation connections between the county's major economic activity areas.

Exhibit 7-1: *Plan Howard 2030* Rapid Transit Corridors



The Plan Howard 2030 implementation section called for further study of the US 29, MD 32 and US 1 Corridors to test ridership and technical feasibility and based on this guidance, the Howard County has advanced the development of Bus Rapid Transit (BRT) via a series of planning and design studies.

What is Bus Rapid Transit?

Bus Rapid Transit is a bus-based transit system that delivers fast, comfortable, and cost-effective transit services along a spectrum of service levels and right-of-way treatments. Traditionally, bus rapid transit is the next step in a bus route's evolution, and is implemented when a route exceeds its carrying capacity and/or is so negatively impacted by traffic congestion, that travel time reliability and headways can no longer be maintained. Some potential elements of BRT are:

- Dedicated right-of-way along and busways on the whole corridor and/or in congested areas.
- Systems to allow buses to hold or advance traffic signals so they are not delayed at intersections.
- Off-board fare collection to minimize the amount of time it takes passengers to enter the bus.
- High frequency service with buses arriving every few minutes, at least during peak hours.
- Bus stations that are level with the bus floor to allow passengers to enter and leave quickly.
- Stops located in high demand locations.
- Larger buses to allow more passengers to board per bus.

Exhibit 7-2: BRT Bus and Station
(Las Vegas, Nevada)

Completed Planning Studies

A concept plan[1] for Bus Rapid Transit was the initial BRT study conducted for Howard County. It presented a very high-level plan and costs for a BRT system along a wide range of roads and corridors, but did not perform ridership analyses, develop a service plan or perform an operational analysis.

[1] Howard County BRT—Concept Plans and Preliminary Cost Estimates for the Envisioned System, for the Howard County Office of Transportation, April 20, 2012.

Following the completion of the concept plan, the county developed a Phase I study[2]. The purpose of the study was to evaluate a BRT network for the county, including linkages to multiple activity centers and transit systems. The study included ridership analysis and the impact on both transit and vehicle travel times on the routes, car trips diverted to transit, for the routes presented in the concept plan. The study was developed based on a best-case scenario, i.e., the system had all the characteristics a BRT system.

The study focused on four corridors:

1. US 29 between Mount Hebron and Silver Spring
2. Broken Land Parkway between Columbia Town Center and Savage MARC Station
3. MD 32 between Clarksville and Odenton Town Center
4. MD 216 between Scaggsville and Odenton Town Center

In a Phase II study[3], the county expanded the previous Concept Plan and Phase I efforts with additional detail and rigor. The purpose of the Phase II study was to identify and evaluate the corridors and feasible alternatives to demonstrate the potential for attracting riders and receiving funding, and to develop alternatives to a level that could be carried forward to the next stage of right-of-way design, environmental impact and preliminary engineering. The Phase II effort focused on three corridors US 29, Broken Land Parkway, and US 1, and examined specific route alignment and stations, ancillary feeder transit services, landside services such as park and rides and pedestrian accessibility, preliminary operating costs, and land use plans to support high quality transit service within and between them.

The Phase I and II studies documented a significant travel market and demand for high quality BRT to/from and within Howard County for each of the three corridors should a high-quality BRT system be developed. Study modelling found that in the design year of 2035, a three route BRT system could:

- Generate 9,080 new transit trips from Howard county, and
- Generate new 12,579 new transit trips to Howard County.

Other important findings were:

- Significant demand from the northernmost stations due to their proximity to I-70, and the new travel markets that this opens up.

[2] Sabra, Wang & Associates, Inc., Howard County Bus Rapid Transit Phase I Study Technical Report, for the Howard County Office of Transportation.
[3] Sabra, Wang & Associates, Inc., Howard County Bus Rapid Transit Phase II Study Technical Report, for the Howard County Office of Transportation, April 5, 2016

- The network connections and the "system" connectivity offered by tying the three corridors together to major activity centers and regional fixed-rail transit networks expand connectivity and open up new travel markets.

- Much of the demand is for the drive access/park and ride transit users which generates significant demand for park and ride lots.

- Local feeder routes and integration of MTA commuter routes are an important element supporting potential ridership.

What's Next

Howard County's consideration of BRT is now focused on the Route 29 Corridor and the opportunity presented to work with Montgomery County as it develops, plans and implements a BRT service on Route 29 between Burtonsville and Silver Spring.

Montgomery County BRT

Several years of planning for BRT in Montgomery County culminated in the 2015 development of a Preliminary Purpose and Needs Statement for BRT along the US 29 corridor, which was followed by the development of an application for Transportation Investment Generating Economic Recovery (TIGER) grant funding from the U.S. Department of Transportation. In 2016 Montgomery County included $6.5 million in the capital budget for planning and design—with the goal of getting BRT on the Route 29 Corridor within four years.

The county's proposal succeeded in obtaining the TIGER grant funding, and the county is now in the engineering and procurement phases of the implementation. The proposed service will run from the Burtonsville Park and Ride lot to Silver Spring, primarily using the existing bus-on-shoulder lanes on the northern portion of the route, operating in mixed-traffic on the southern portion of the route, and on local streets to access stops that are off US 29. Transit signal priority will be installed at up to fifteen intersections, with service from 6:00 a.m. to midnight seven days per week on 7.5 minute headways during the peak periods and 15 minutes off-peak. Stops will be at designated stations with easy access and amenities, and special buses with Wi-Fi and other amenities will be used.

Montgomery County is aiming to implement service operations by early 2020, and Howard County will continue to support their efforts in moving forward while evaluating the impact of extending the currently proposed service.

Howard County BRT

Howard County sees many of the same advantages for BRT as anticipated by Montgomery County in terms of providing improved transit travel times, increased reliability, increased frequency—and addressing the continuing growth of traffic on the US 29 Corridor. BRT would also support the plans for the redevelopment of Downtown Columbia, with its increase in both residents and employment. BRT has been included in the planning for the new Downtown Columbia Transit Center, where two bays have been reserved in the conceptual plan, and access concepts for Downtown Columbia includes lanes linking the BRT with Downtown Columbia. Earlier implementation of BRT could affect the need for development of the Transit Center, or the need for an interim transfer center to link RTA, BRT and MTA commuter services.

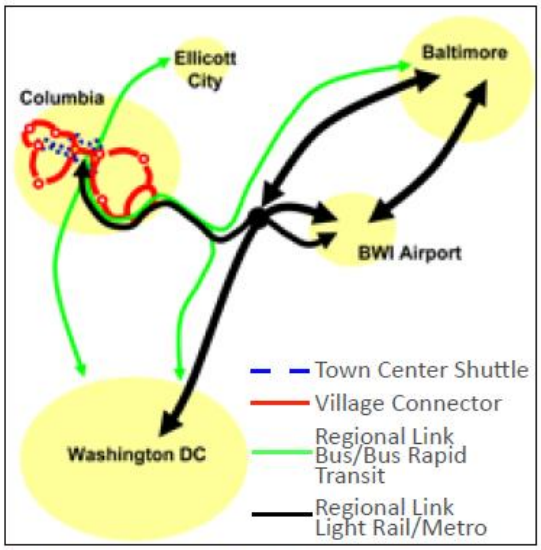
Howard County and Montgomery County are currently coordinating efforts around the development of an extension of the Montgomery BRT (now branded as "Flash"). There are issues in terms of defining the services—the Phase II BRT study for Howard County calls for stops at MD 216, Columbia, Long Gate/Ellicott City and Mt. Hebron. Montgomery County is moving ahead with vehicle procurement, and one scenario could have Howard County purchasing vehicles for its service as options on that procurement, or providing a capital contribution to a combined fleet.

Other issues yet to be addressed include the manner in which the extensive MTA commuter bus service from Howard County would be integrated with the BRT. Currently the MTA pays the cost of these services, and MTA commuter buses utilize existing bus-on-shoulder lanes in Montgomery County. Service planning will need to determine how these services might be integrated into BRT.

The impact of BRT development in Montgomery County is that this vision for high quality, high frequency transit in the US 29 Corridor may be able to come to fruition sooner, rather than later, in tandem with the development of Downtown Columbia. In addition, the development of the BRT corridor in Howard County would be a first step toward the continued development of high-frequency transit within the county on a proposed east-west transitway emerging from the Bridge Columbia initiative, as discussed in the following section.

BRIDGE COLUMBIA EAST-WEST TRANSITWAY CONCEPT

This TDP recommends a complementary transit concept for a high-frequency east-west transit corridor within Howard County, linking the Howard County General Hospital, Howard Community College, Downtown Columbia, and Snowden Square and the Gateway employment area. As proposed, it would connect most of higher density residential and employment locations in Howard County. It would connect with the BRT, local RTA routes, and MTA services at the new Downtown Columbia Transit Center. In terms of the overall regional connectivity concept presented in Exhibit 7-3, this concept corresponds to the Village Connector shown in red, although the actual route would be different.



Future Connectivity Diagram, Region

Exhibit 7-3: Future Regional Connectivity Concept

Background

Although not widely known, the original Final Development Plans for Columbia included a designated right-of-way for a separate "Minibus" transit network separated from the street network. These rights-of-ways are owned by the Columbia Association, and many are currently improved with the paved bicycle/pedestrian pathways. Friends of Bridge Columbia (Friends), a citizen's group formed to advocate for a signature bridge over US 29 also called for using this transitway for a separate busway network that would connect east- and west-Columbia with a transit bridge over US 29. The proposed transitway was intended to avoid automobile traffic and improve transit speeds and reliability, support Village Centers on its route, support Downtown Columbia and Gateway redevelopment, and provide service that would be usable by the growing senior population.

Analysis of the concept revealed that the proposed corridor location addressed many of the Friends' goals, particularly considering projected population and employment concentrations[4]. As the Downtown Columbia plan is implemented and Gateway redevelopment occurs, the conceptual transitway would serve the existing areas of residential and employment density, key origins and destinations, and several of the Village Centers. It is the corridor entirely within the county most likely to support high-frequency transit. However, even in projections for 2040 the densities do not reach thresholds[5] justifying a

[4] See separate report prepared concurrently with the TDP – Bridge Columbia Transitway Study.
[5] Planning guidelines call for 15 housing units per acre and/or 75 employees per acre as thresholds for busway feasibility.

separate busway. In addition, the right-of-way that was set-aside for the busway network is 40 to 50 feet wide. Under today's standards, it would be completely occupied by a two-way busway with no buffer to adjoining properties. Because of the likely environmental damage, the proximity to existing housing, the likely high cost, and the current and projected level of transit ridership, the notion of a separate transitway network in its entirety is not justified for the foreseeable future.

Concept

While a separate transitway network is not warranted, the identified corridor is appropriate for the future development of *improved* transit. The transitway analysis showed that surface streets and highways can be used for most of the route. Current and future congestion on Route 175 between Dobbin Center Parkway past Tamar Drive could require transit priority measures such as bus-on-shoulder queue-jumper lanes and signal priority. An alternative routing that could service Oakland Mills could be implemented if the "third interchange" bridge were built across US 29[6]. Studies for this bridge include options that would link east and west Columbia as well as provide access from US 29. Including a transit lane or transit priority on the bridge would support faster and more reliable transit. Figure 7-1 presents two conceptual routes for the Downtown to Gateway corridor utilizing different bridge options.

Continued development of this concept should add the other elements typically found in BRT like services—enhanced shelters, stops, special branding, real-time schedule information at stops—along with other locations where signal priority or other priority treatments would be advantageous. In addition the implementation of fully-electric buses on the 401 which began in 2017 (see Exhibit 7-4) sets a precedent for using specialty buses with separate branding on this route.

[6] Howard County, Maryland, Downtown Columbia Plan: A General Plan Amendment, February 1, 2010; and Wallace Montgomery, Draft Feasibility Study for Downtown Columbia Transportation Improvements-Little Patuxent Parkway/U.S.29 Interchange, January 2012.

Figure 7-1: East-West Transitway Concepts: Using Proposed Third Interchange Bridge or Transit/Bicycle/Pedestrian Replacement Bridge

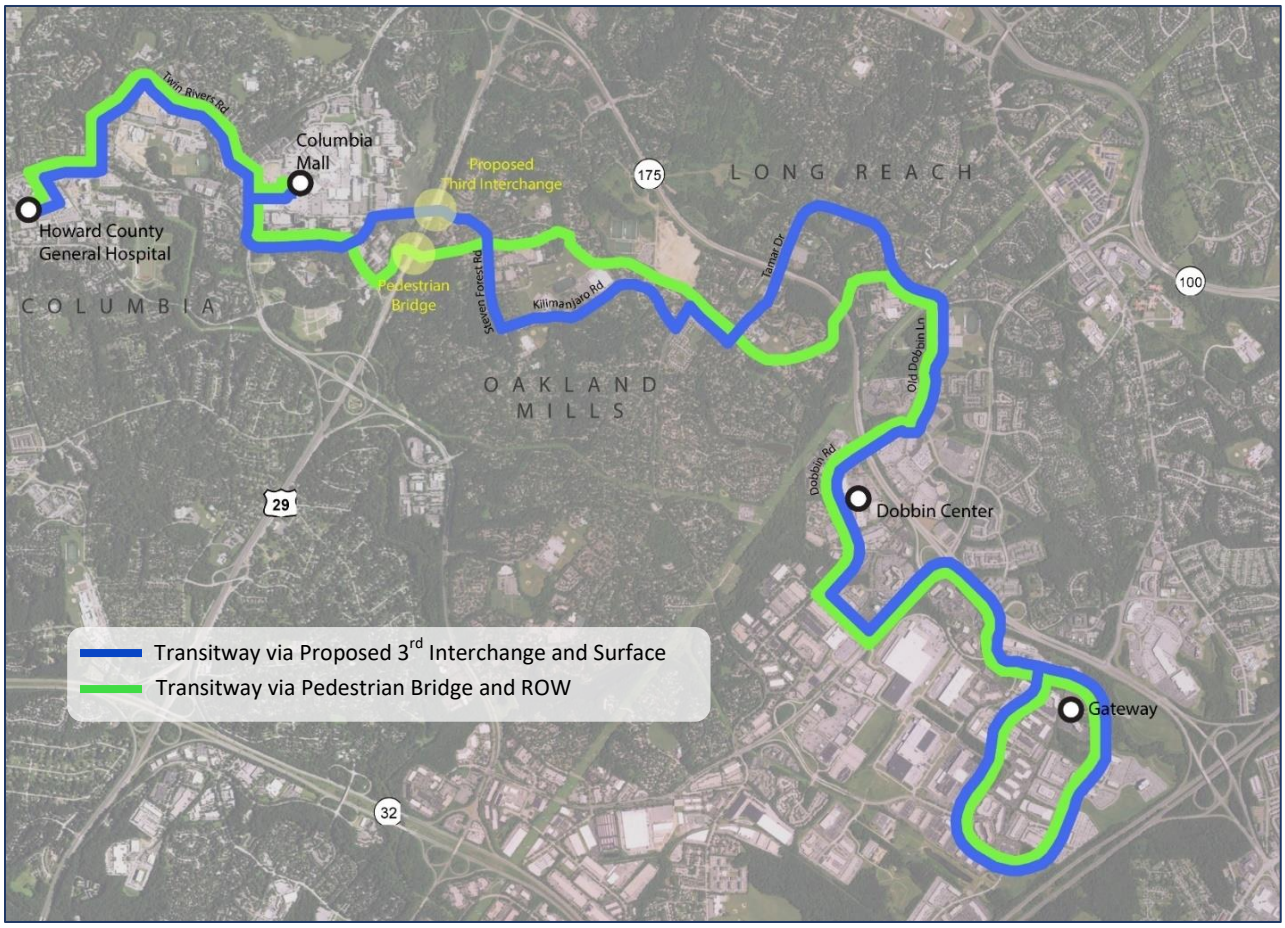


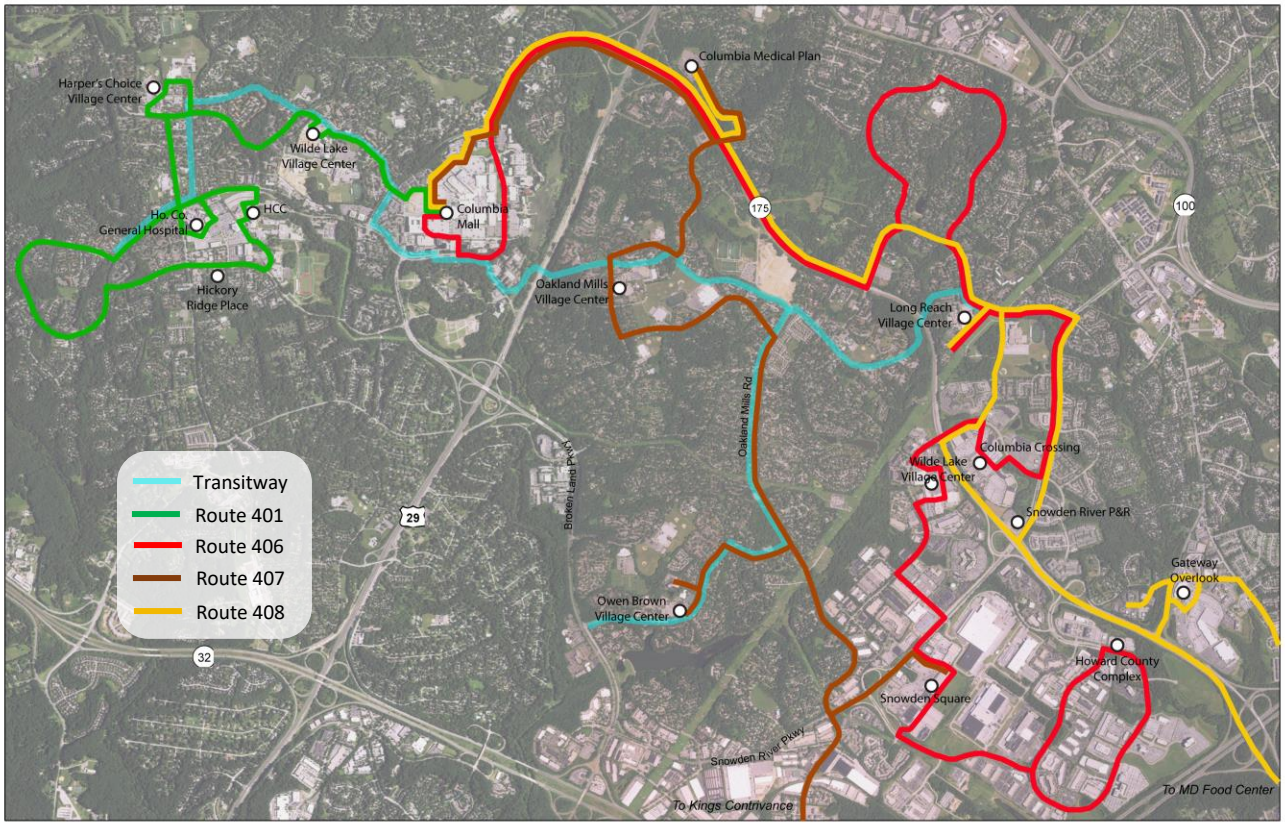
Exhibit 7-4: Electric Bus Used on RTA 401 Service

Source: RTA of Central Maryland

Building on Existing Services

Currently there are four RTA routes that operate in the area served by the Corridor—the 401, 406, 407 and 408, as shown in Figure 7-2. The 401, the 407 and the 408 are proposed to operate at 30 minute headways in the Plan. The long-range concept for the east-west transitway service would combine the 401 and the 406 into a single route, operating at higher frequencies as ridership increases with the growth of Downtown Columbia and the redevelopment of Gateway.

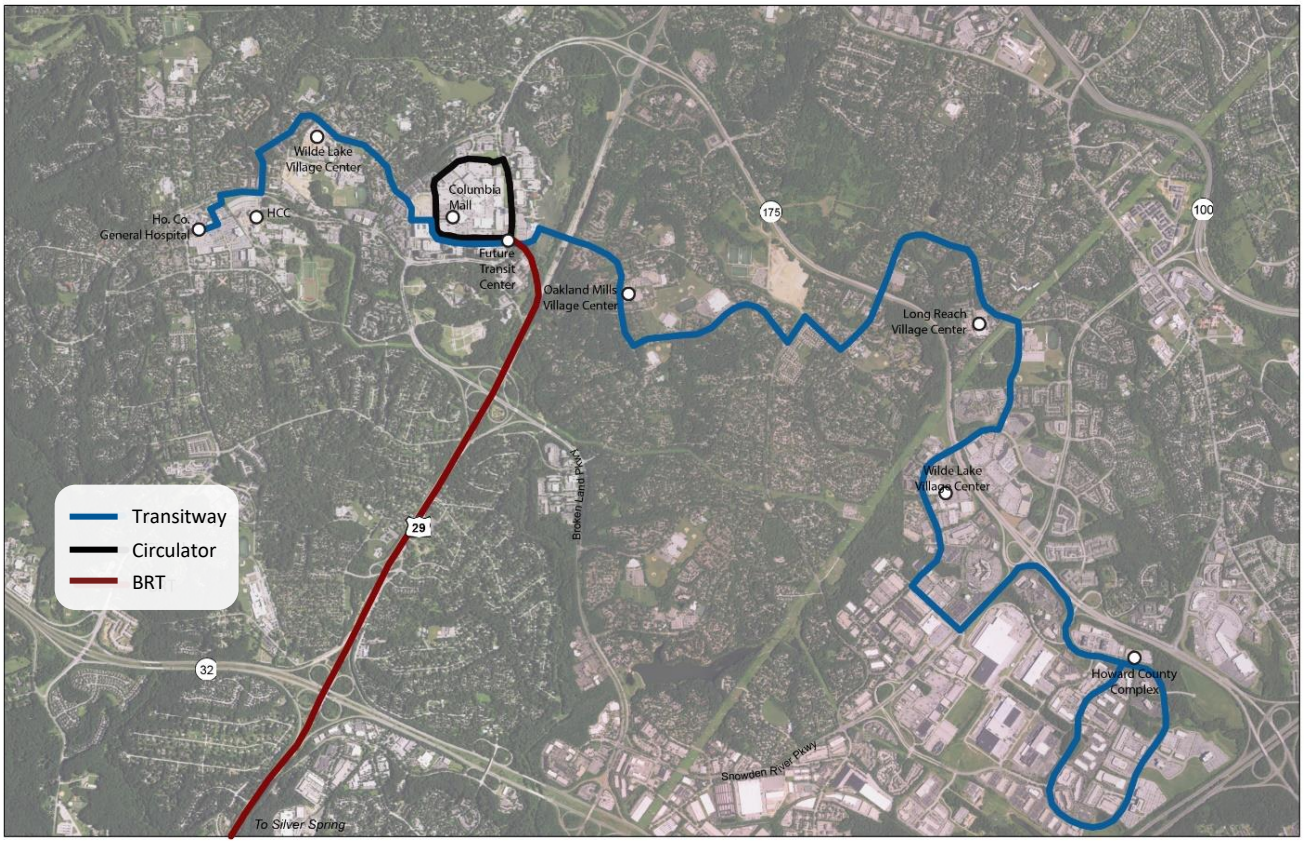
Figure 7-2: Existing RTA Services and the Transit right-of-way.



Connecting with Future Services

As noted above, this proposed new east-west route would connect with the future Downtown Columbia circulator shuttle at the new Downtown Columbia Transit Center. It would also connect with the future BRT on US 29. Figure 7-3 presents a map of these proposed high-frequency transit services.

Figure 7-3: Howard County's Future High Frequency Transit Services



If operated at planned Montgomery County frequencies, it would operate at 7.5 minute headways in the peak, and 15 minute headways off-peak. An east-west transit service operating at similar headways could effectively extend the impact of the BRT to much of Columbia, particularly the major activity centers.

Timing

The potential timing of implementation is linked to the future implementation of a number of elements. The Montgomery County BRT is slated to begin service from Burtonsville in 2020. The timing of an extension to Columbia is not known, but likely be later. The Downtown Columbia Transit Center is estimated for construction in eight to ten years. The Third

Interchange Bridge is included in the Downtown Columbia plan, but there is no estimate of the date when it will be warranted. The redevelopment of the Gateway area will take a number of years, perhaps achieving most of its growth by 2040.

The development of the East-West Transitway high-frequency bus service will not likely occur during the period covered by this TDP, but it is potentially a part of the next one. At that point the basic combined east-west route could be evaluated, and perhaps implemented at current frequencies using the existing roads, perhaps with priority treatments. By then BRT service and the need for the third interchange bridge will be better understood, and there may be more certainty about the potential routing.

DOWNTOWN COLUMBIA CIRCULATOR

Howard County's 2010 Downtown Columbia Plan recommends a circulator shuttle to reduce Downtown Columbia traffic as residents, employees and visitors "park once," then walk or take the shuttle to other destinations in Downtown Columbia. Under the Plan's Community Enhancement, Program and Public Amenity (CEPPA) #23 requirements GGP (now Howard Hughes) must provide $1,000,000 towards the initial funding of a Downtown Circulator Shuttle prior to issuance of a building permit for the 5 millionth square foot of development. Issuance of a building permit for the 1.3 millionth square foot of development is expected in late 2017 or early 2018. Due to market conditions it is uncertain when a permit for the 5 millionth square foot of development will be issued but it will likely be in at least four or five years towards the end of the life of this TDP.

CEPPA #5 required a study of the shuttle to evaluate and determine appropriate levels of service and phasing in of service at various levels of development. Howard Hughes completed this study in 2011[7]. The study's key recommendations were (in summary):

- A Downtown Columbia circulator should begin operations when there are enough new residents in Downtown Columbia seeking such service, as determined through the results of monitoring surveys.

- A transportation demand management plan should be established for Downtown Columbia with a periodic monitoring program that can establish a clear metric(s) for when a circulator shuttle is appropriate.

- The short-term circulator should utilize existing mall and surrounding roads with approximately six stops near existing buildings and the mall. The circulator should operate on a fixed schedule, departing the transit center every 20-minutes.

[7] Downtown Columbia Downtown Transit Center and Circulator Shuttle Feasibility Study.

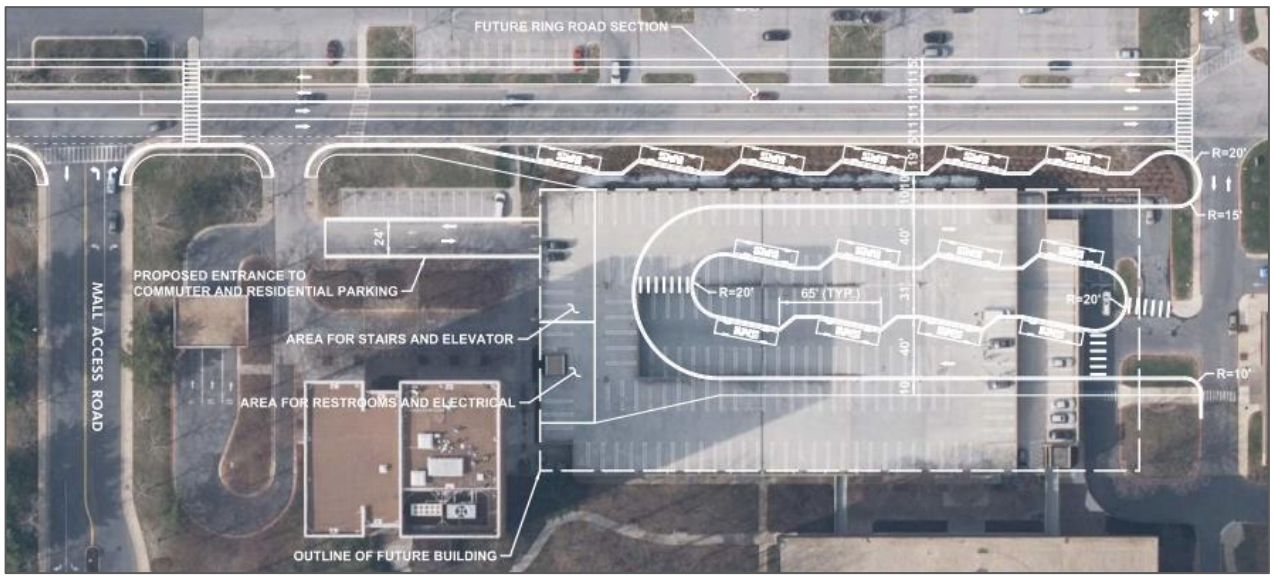
- In the long-term, the circulator should extend its route to the Crescent area when new development in that area is occupied and reporting a need through the monitoring program's surveys. Frequencies should increase to 15- minutes.

DOWNTOWN COLUMBIA TRANSIT CENTER

As noted in Chapter 6, planning is underway for a new Downtown Columbia Transit Center to serve as the central station for the BRT, RTA routes, MTA commuter bus, the Downtown Columbia shuttle. The facility will be centrally located in Downtown Columbia.

An alternatives analysis conducted for Howard County evaluated several sites, and the recommended site (known as Site 3) is located on the southside of Mall Ring Road along Little Patuxent Parkway (near Union Jacks Pub/Restaurant)[8]. The analysis call for fourteen bus bays—eight for existing RTA routes, two for RTA growth, two for MTA, and two for BRT routes. It will have sheltered waiting areas, bicycle parking, a transit information booth, facilities for driver break time (including restrooms), real-time transit information, and commuter parking for MTA routes. The facility is intended to be part of a mixed-use, mixed-income residential project developed by the Howard County Housing Commission.

Figure 7-4: Downtown Columbia Transit Center Concept



Source: Downtown Columbia Transit Center Location and Site Analysis Study

The Transit Center portion of the project will be funded from the Downtown Columbia property tax increment.

[8] Downtown Columbia Transit Center –Location and Site Analysis Study, October 2017

The Downtown Columbia Plan requires General Growth Properties, (now Howard Hughes Corporation) to provide the site prior to issuance of a building permit for the 1.3 million square foot development, however, the timing may be changed to coincide better with the planned redevelopment of the chosen site. As a result the implementation of the new transit center is likely to be in the eight to ten year time frame.

SHARED-MOBILITY SERVICES

This TDP has included the development of shared-ride, community-based demand-response services as the recommended model for new local coverage in Anne Arundel County. These are included in recognition of the emergence of a new model of transit service that is disrupting the conventional models of taxi and public transit service. Collectively these new service models are being described as shared mobility services, because they involve sharing a ride. The overall concept of shared-mobility includes:

- **Ride-hailing**: Typically a phone-based app platform where individuals can hail (call) for a ride (individual) provided by a paid driver using his/her own vehicle—the driver is "sharing" the vehicle—Uber and Lyft are examples.

- **Shared Ride-Hailing**: Similar to ride-hailing, but the customer may share the ride with others having similar routes/destinations—usually involves a lower fare than dedicated individual service.

- **Microtransit**: App-based service similar to shared ride-hailing, but on larger vehicles (vans or small buses) serving more passengers, which may be routed dynamically in real-time or in response to crowd-sourcing. The routing may be between stops that are near but not at a customer's actual location—i.e. they might have to walk to a designated stop. Services may follow a general route and deviate in response to customer requests, or be entirely flexible. Fares are lower than ride-hailing but higher than subsidized public transit.

Technology applications and market arrangements are currently undergoing rapid development and change, and so this framework is likely to change during the course of the TDP. For the most part such services are currently provided by the private sector without subsidies, and often outside the current public regulatory structure.

Ride-hailing and microtransit are already having an impact on the taxi industry, and on some public transit modes. In large, dense urban environments it appears that ride-hailing types of

services are both creating ridership and drawing ridership from bus and light rail services. To date research has identified the loss of bus ridership at 6 percent, and light rail's loss at 3%.[9]

Public transit systems have initially reacted to the development of such services by seeking to contract with them for local area services in lower density areas, particularly providing first-mile/last mile connections to line-haul transit. The goal is to obtain lower cost service (than their own demand-response service), and meet customer preferences for the smartphone app customer interface, payment options, and quick response. Other transit efforts to work with ride-hailing providers have involved contracting for them to provide ADA complementary paratransit services.

In both cases a major issue has been the fact that ride-hailing services that do not have a fleet utilize vehicles which are not wheelchair accessible, and the operators are not trained to provide accessible service. This poses a significant equity issue that may prevent the use of public funds, as does the use of smartphones to hail the services, as not all members of the public have or use smart phones.

Over the next five years it is likely that many different models will evolve combining alternative technologies and organizational models. In high density areas the private market will drive these developments. In lower density areas transit providers may find that these options a cost-effective alternative to low-productivity fixed route transit service. Already there are efforts to have firms with the technological platforms provide the customer interface for vehicles operated by transit systems or their contractors.

This TDP has provided a place in the plan for the potential development and implementation of such options in Anne Arundel County areas where it is likely that any new bus transit would likely have low productivity and be less useful to potential riders due to schedule and route limitations. These service areas are intended to be connected by new line-haul routes. It is likely that the County will develop several different models over the implementation period. In Howard County and Prince George's County the TDP continues to call for fixed-route transit improvements because there is already a comprehensive network – but the experience of Anne Arundel should be instructive for the development of service options in the next TDPs for the region.

ARUNDEL MILLS-BWI MARSHALL HIGH-FREQUENCY SHUTTLE

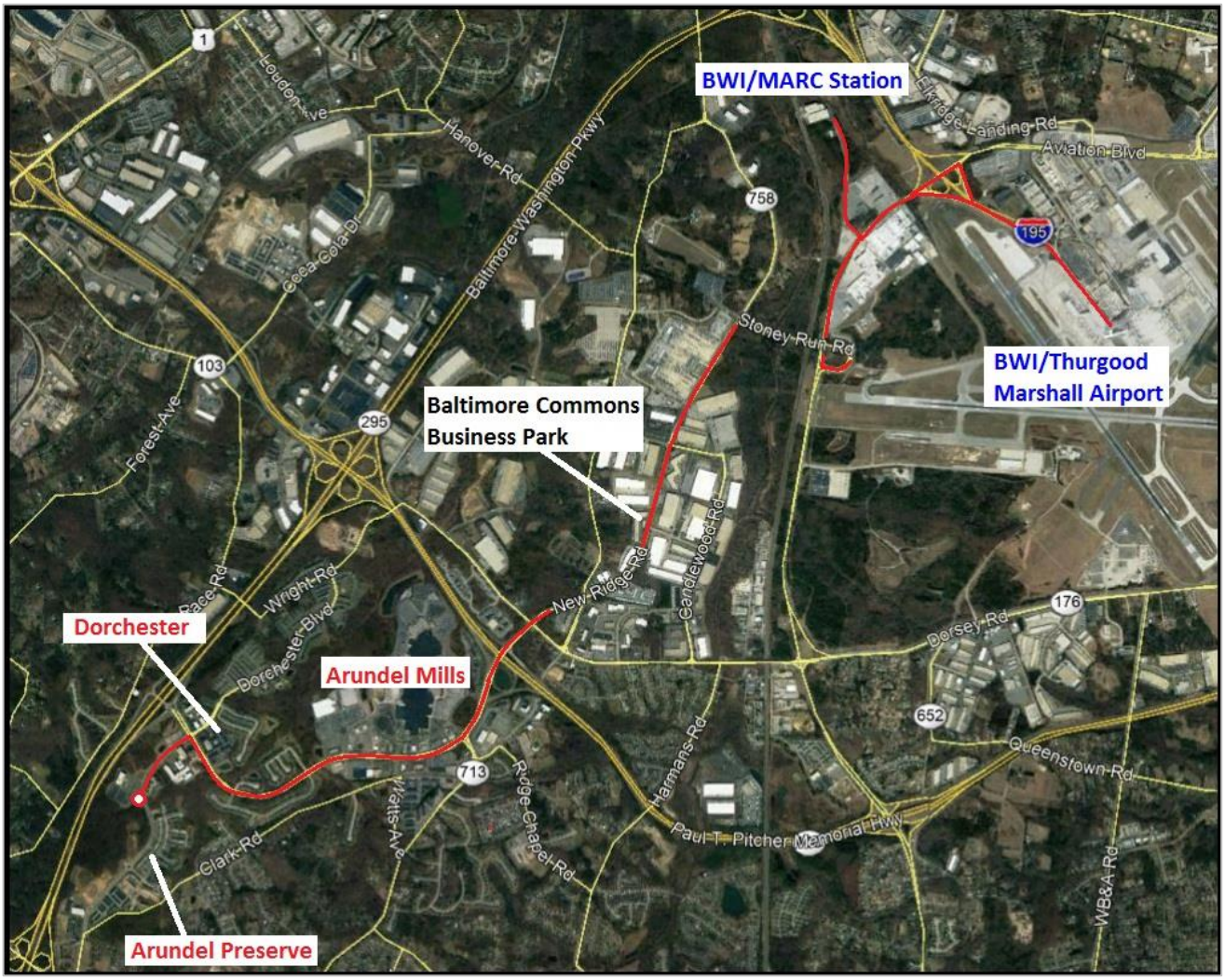
In this TDP there are individual route plans for multiple routes that include service between Arundel Mills and BWI Marshall Airport. The proposed 505 from Columbia, the proposed 502 from Laurel, and the proposed Annapolis-BWI-Arundel Mills services all include service between those two points, with the same stops. In addition, the MTA LocalLink 75 and MTA

[9] Regina R. Clewlow and Gouri Shankar Mishra; Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States; Institute of Transportation Studies, University of California at Davis; Davis, California; Research Report UCD-ITS-RR-17-07; October 2017.

Commuter Bus 201 provide service between the airport and Arundel Mills, and there are plans for the WMATA Metrobus B30 to service both points. BWI Marshall and Arundel Mills are two major regional destinations that are in close proximity, and there is a need for service to both of them from a number of points in the region.

An alternative to operating all of these routes to both points is to provide a higher frequency shuttle between Arundel Mills and BWI Marshall, allowing each of the longer distance routes to serve one or the other while passengers needing to travel to the other key destination can catch the shuttle. Figure 7-5 presents a conceptual version of this route, which could initially operate at half hour headways with a future vision of higher frequency. The span of service would need to include seven day per week service, from early morning to the closing of the MTA light rail services at midnight.

Figure 7-5: Arundel Mills-BWI Marshall Airport High Frequency Shuttle Route



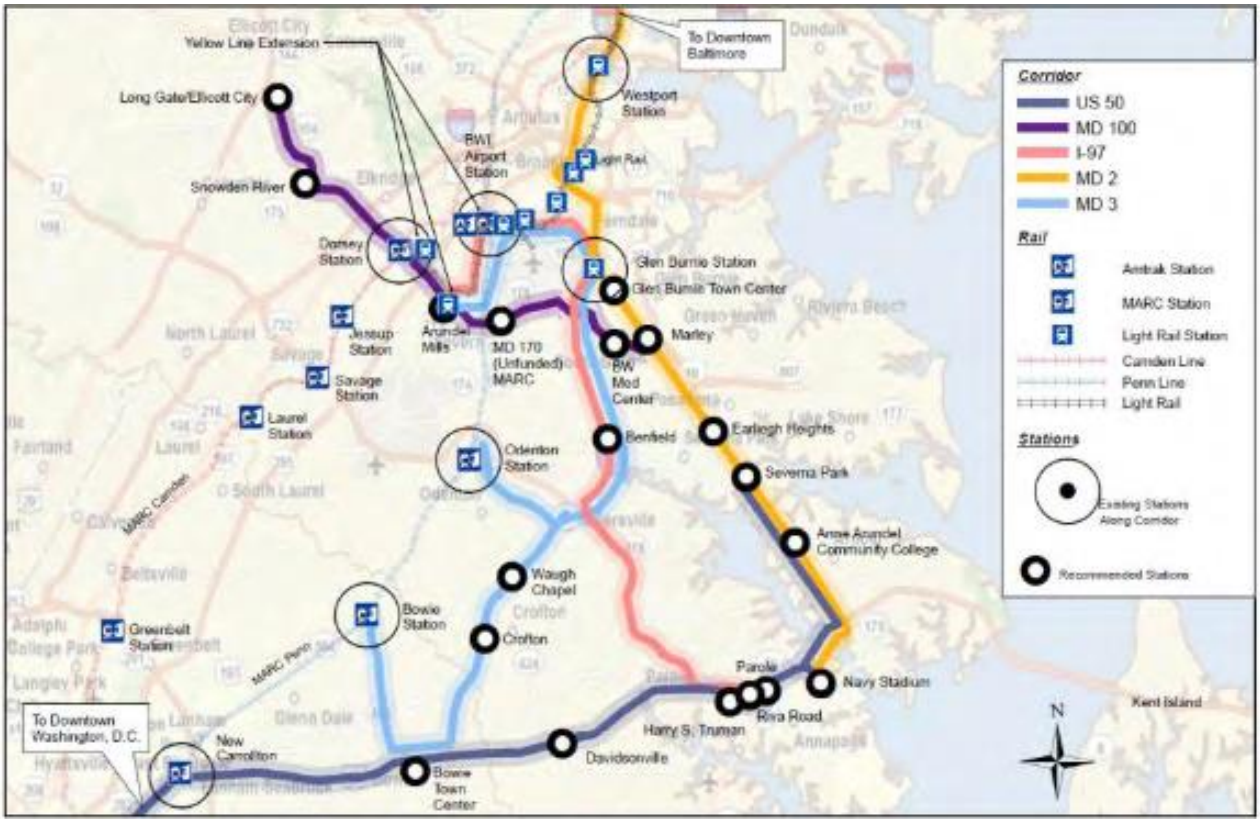
ANNE ARUNDEL COUNTY PREFERRED TRANSIT NETWORK

In addition to the near-term focus on the shuttle between Arundel Mills and BWI Marshall Airport, Anne Arundel County has adopted plans that support longer-term development of improved transit in a number of corridors. The 2012 Corridor Growth Management Plan (CGMP)identified preferred transit alternatives for a number of key corridors based on a planning horizon year of 2035. These include:

- US 50 Corridor: HOV Lanes from the Prince George's County line to I-97, with premium bus transit from Annapolis to downtown Washington, D.C.
- I-97: Premium bus transit from Parole Town Center to BWI and Arundel Mills
- MD 2 North: Premium bus transit from Annapolis to downtown Baltimore
- MD 2 South: No transit recommendation
- MD 100: Premium bus transit from Marley Station to Ellicott City
- MD 32: HOV Lanes from I-95 to I-97, no transit improvement recommended
- MD 3: Premium transit from BWI to Bowie
- Fort Smallwood: Magothy Bridge: Extension of local bus service to Chesterfield Plaza

Figure 7-6 presents a map of the preferred transit network for Anne Arundel County. The definition of premium bus service varies by corridor, but generally refers to 10-minute peak hour headways and 20-minute off-peak headways, with limited stops. Of note is that this TDP, which focuses on a five-year planning horizon, includes proposals to initiate or expand on some of the services identified in this CGMP, such as bus transit from Parole/Annapolis to BWI and Arundel Mills, and bus transit from Bowie to Glen Burnie (with connections to BWI and Arundel Mills. Existing transit in other corridors, such as US 50 and MD 2 North, would need to be enhanced to meet demand, though recent MTA improvements in commuter bus service have initiated that process through express service from Annapolis to downtown Baltimore.

Figure 7-6: Anne Arundel County Preferred Transit Network



Source: Anne Arundel County Corridor Growth Management Plan, p. 5-3.

Additional transit corridor evaluations were included in the Major Infrastructure and Important Facilities plan of June 2016. Transit alternatives including bus rapid transit, promotion of transit (with priority treatments), and paratransit were included in the toolbox of strategies for corridor improvements. Some transit recommendations for the corridors evaluated include:

- College Parkway: Extend Annapolis Transit Gold Route from Anne Arundel Community College to MD 179, promote County paratransit
- Forest Drive: Extend existing MTA commuter bus service from Riva Road Park and Ride to Bay Ridge Avenue, improve transit amenities and sidewalk connections
- MD 173: Promote County paratransit service
- MD 177: Implement local transit
- MD 214: No transit recommendation
- MD 256 and MD 468: No transit recommendation
- MD 665: No transit recommendation

The CGMP also includes improved pedestrian connections to transit stops with enhanced amenities are envisaged as part of the plan. Anne Arundel County's 2013 Pedestrian and

Bicycle Master Plan identifies improvements in pedestrian and bicycle access countywide, though it does not identify linkages to particular improved transit stops. Another County planning document, Complete Streets Guidance, calls for the consideration of transit improvements along with pedestrian and bicycle roles in the development of plans for improvements of streets and boulevards in the County.

CONCLUSIONS

This TDP calls for a significant restructuring and expansion of transit services in Central Maryland, including:

- Howard County: Restructuring of Howard County services to short routes, cut travel times, and improve frequencies, followed by expanded frequencies and hours of service, new connections, and expansion of coverage to three new areas.

- Anne Arundel County: Expansion of existing services in terms of hours and frequencies, a high-frequency shuttle between Arundel Mills and BWI Marshall Airport, creation of Call-N-Ride last-mile/first-mile demand-response service in community zones, and a number of new connecting routes to link these communities.

- New service in northern Prince George's County to link new development (Konterra) with Laurel.

It also includes a plan for bringing the region's local transit services fleet to a point where no active vehicles are operated beyond their expected lifetimes. The goals are to provide safe, reliable service, meeting the needs of persons who wish to use transit to connect to employment in the region, to access medical care, or for shopping or social trip purposes.

These improvements in the local transit services set the stage for the next round of improvements that have been presented in this chapter—BRT on US 29, a Howard County East-West Transitway, a new Downtown Columbia Transit Center, a Downtown Circulator Shuttle for Columbia, shared-mobility services in Anne Arundel County (and potentially elsewhere), a high-frequency shuttle between Arundel Mills and BWI, and future cross-county transit corridors for Anne Arundel County.