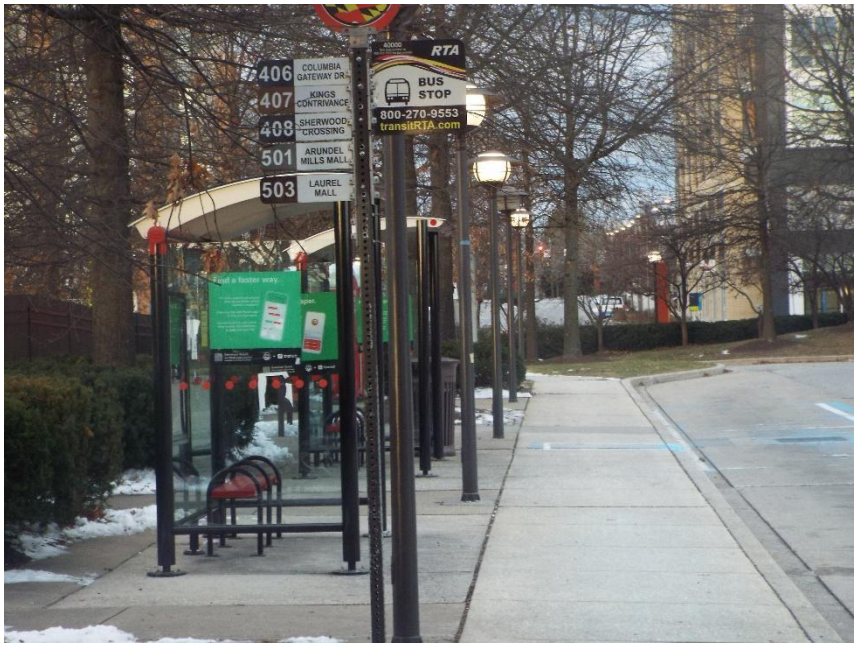
Central Maryland Regional Transit Plan
Pilot Corridor Analysis
Corridor 25: BWI Marshall Airport to Columbia Town Center

Technical Memorandum #1

Background Data and Existing Conditions



1. Introduction

In 2018 the Maryland State Legislature passed funding for the Maryland Department of Transportation, Maryland Transit Administration (MDOT MTA) to complete a Regional Transit Plan with a 25-year time horizon to better understand transit needs throughout Central Maryland and prepare to meet those needs. The final Plan, "Connecting Our Future, A Regional Transit Plan for Central Maryland (Central MD RTP), was completed in October 2020.

As part of the plan, 30 key regional transit corridors that demonstrated transit demand that justifies additional investment, including service, infrastructure, and technology, were identified. One of the RTP corridors, Corridor #25 BWI Marshall Airport to Columbia Town Center, is the subject of the analysis outlined in this report. The purpose of the Corridor #25 Study was to add additional detail to the high-level analysis completed in the RTP, including specific alignments, mode, service characteristics, and potential station locations.

This technical report outlines the results of the planning process work step "Collect and Evaluate Background Data", which was the first step of the planning process. The purpose of the data collection and analysis completed in this step was to provide a robust and comprehensive understanding of the BWI to Columbia Town Center corridor as well as transit needs within the corridor and thus to provide a foundation for the subsequent steps of the planning process.

A short description of each of the data collection efforts and analyses completed during this work step is outlined below and the detailed technical reports covering each of the analysis areas are provided in Appendices 1 through 7.

2. Analysis Results

2.1 Steering Committee Interviews – Interviews were held with staff from each of the Steering Committee members; MDOT MTA, the Howard County Office of Transportation, and the Anne Arundel County Office of Transportation. A set of interview questions was developed and shared with each Steering Committee member and the interviews were held via conference call. The questions focused on developing an understanding each Committee member's transit priorities in their jurisdiction overall as well as specific priorities within the BWI to Columbia Town Center corridor. These interviews provided played an especially important role in identifying transit needs within the corridor. The results of the interviews are outlined in detail in Appendix 1.

2.2 Stakeholder Group Survey – the project Stakeholder Group provided stakeholders with a various range of interests within the corridor an opportunity to provide input on their priorities for transit within the corridor. The Stakeholder Group consisted of large businesses within the corridor, advocacy groups, developers, and governmental agencies not part of the Steering Committee. Input from the Stakeholder Group was solicited through an online survey. The members of the Stakeholder Group and the survey results are also summarized in Appendix 1.

2.3 Roadway Characteristics – This technical analysis involved an inventory of roadways within the study corridor that were potential transit alignments. The analysis focused on assessing the transit readiness of the corridor as well as setting the foundation for identifying improvements that might be required to enhance future transit readiness. Roadway and corridor characteristics evaluated for each roadway segment included: the roadway cross-section, existing pedestrian accommodations, access to adjacent neighborhoods, access to existing bus stops (if service is currently running on the roadway), and connections to other roadways potentially supporting a transit alignment. The Roadway Characteristics technical analysis is outlined in Appendix 2.

2.4 Commuter and Demographic Characteristics – This technical analysis covered a range of demographic and trip pattern analysis that was an essential input into identifying transit needs within the corridor. Areas evaluated in the analysis included:

- Population and employment density forecasts to identify areas within the corridor that had densities high enough to support transit currently or in the future.
- Work trip flows to major activity centers within the corridor. This analysis evaluated trip flows from all origin Transportation Analysis Zones within the corridor to major corridor activity. centers. This provided an understanding of how people were traveling within the corridor and which trip flows should be supported by transit service.
- Demographic analysis to identify transit need included demographic characteristics that point to a higher likelihood of a person relying on transit for their mobility needs. Characteristics evaluated included low income and carless household concentrations as well as other characteristics such as areas where transit use is already high and higher concentrations of elderly populations.
- Two indexes were also evaluated to identify transit need, including the BMC Vulnerability Index and a Transit Propensity Analysis.

The Commuter and Demographic Characteristics technical analysis is outlined in Appendix 3.

2.5 Plans and Studies – This technical analysis involved a detailed review of all relevant plans and studies within the corridor that would inform the type of transit service that should be provided. These included plans developed by Anne Arundel County and Howard County, work completed by the Maryland Transit Administration and plans developed by advocacy groups. The results of the plan and studies review are outlined in Appendix 5.

2.6 Existing Transit Service – This technical analysis involved a summary of existing transit service within the corridor to help to determine how identified needs and trip patterns are being served. The Existing Transit Service technical analysis is outlined in Appendix 6.

2.7 Land Use, Development, and Zoning – This technical analysis complements the Plans and Studies technical analysis and focuses on existing land use and zoning as well as planned developments within the corridor. This analysis is outlined in Appendix 7.

Appendix 1 – Steering Committee Interview Results and Stakeholder Survey Results

Central Maryland Regional Transit Plan Pilot Corridor Analysis
Corridor #25: BWI Marshall Airport to Columbia Town Center
Steering Committee Interview Results and Stakeholder Survey Results

1.0 Introduction

As part of the Central Maryland Regional Transit Plan (RTP) Corridor #25 BWI Marshall Airport to Columbia Town Center data collection effort, interviews were held with Steering Committee members to identify priorities and initiatives being undertaken by each Steering Committee agency. Steering Committee members are the MDOT Maryland Transit Administration (MDOT MTA), the Anne Arundel County Office of Transportation, and the Howard County Office of Transportation.

In addition, a survey was conducted to collect feedback on priorities from the project Stakeholder Group. The Stakeholder Group consists of several non-profit and commercial entities:

- Anne Arundel County Economic Development Corporation
- Accessible Resources for Independence
- Arundel Mills Mall
- BWI Business Partnership
- Central Maryland Transportation Alliance
- Columbia Association
- Downtown Columbia Business Partnership
- Horizon Foundation
- Howard County Chamber of Commerce
- Howard County Economic Development Authority
- The Howard Hughes Corporation
- MDOT Maryland Aviation Administration Ground Transportation
- Howard County Economic Development Authority

The responses received from these meetings and the survey provide an important input into developing routing, service, and capital improvement alternatives as well as the evaluation of alternatives for the purpose of identifying final recommendations.

The results of the interviews and survey are summarized in the following sections.

2.0 Steering Committee Interview Results

The framework for the Steering Committee interviews included a series of questions focused on determining overall priorities and initiatives for each agency as well as their specific priorities for the BWI Marshall Airport to Columbia Town Center corridor. The interview questions are outlined below.

2.1 Steering Committee Interview Questions

Overall Strategic Goals/Priorities

1. What are the specific overall strategic goals/priorities for your County/Agency relating to the Columbia Town Center to BWI Marshall Airport corridor?
    a. Access to Jobs
    b. Economic development
    c. Equity
    d. Land Use
    e. Safety
    f. Sustainability
    g. Other

2. Please list any planned or existing large scale or priority development along the corridor in your County.

Overall Transit Goals

1. What are the transit priorities in (Anne Arundel County, Howard County, for MDOT MTA) over the next five years, ten years, twenty years?

2. Are there specific goals for transit overall in addressing the following areas?
    a. Access to Jobs
    b. Economic Development
    c. Equity
    d. Land Use
    e. Safety
    f. Sustainability
    g. Other

3. In your opinion, do elected and high level leaders in your jurisdiction support expansion of transit funding over the next 10 years?

    a. 1 - (no support)
    b. 2
    c. 3
    d. 4
    e. 5 (strong support)

Corridor-Related Transit Goals

1. Please list any current transit initiatives by your county within the corridor.

2. Thinking of the County's transit and overall priorities, do you think elected officials and high-level leaders would be open to expanding transit service and other improvements within the corridor?

3. How familiar are County elected officials and high-level leaders with the RTP overall and specifically the recommendations in the BWI Marshall Airport to Columbia Town Center Corridor?

4. Please list any origin/destination pairs within the corridor that have been identified by the County as priorities.

Other

1. Are there any other goals/priorities/initiatives that would impact the outcome of the Corridor study that we should consider during the planning process?

2.2 Interview Results – MDOT MTA

The results of the interview with MDOT MTA staff are summarized below, by question category. Representatives from the Office of Service Development and the Office of Planning and Programming took part in the interview.

Overall Strategic Goals/Priorities

The following key points were made relative to this question category:

- The MDOT MTA representatives highlighted that this corridor is outside their primary service area so the MDOT MTA would not operate any service recommended as part of this project. They are very interested in coordinating on service development to ensure recommended services identified in the study seamlessly connect with the MDOT MTA system but would not be the appropriate operator of a new service(s).
    - They further indicated that the only MDOT MTA-run service to Howard County is the 150 route, which is the only regular (non-Commuter Bus) service between Baltimore City and Howard County (runs between Baltimore and Columbia).

- Connectivity to the rest of the regional transit system, including MARC, was also highlighted as an important consideration as BWI Marshall Airport to Columbia Town Center alternatives are formulated and routing and service recommendations are finalized.

- The MDOT MTA representatives highlighted that much of the study area land use patterns do not lend themselves to fixed route transit, given the low density/suburban nature of much of the corridor. Based on this, they proposed considering including

recommendations on transit supportive land as part of the overall project recommendations.

- The MDOT MTA is completing work on other corridors from the Central Maryland Regional Transit Plan and recommended the potential use of evaluation metrics being used to compare alternatives in those studies for potential use in the BWI Marshall Airport to Columbia Town Center work. The MDOT MTA has provided the project team the metrics being used in the other studies.

Overall Transit Goals

- When asked what the MDOT MTA's overall transit goals were, the MDOT MTA representatives noted that from a service point of view, their priorities were reflected for the most part in the Regional Transit Plan, and that the BWI Marshall Airport to Columbia Town Center was identified as a mid-term implementation priority. At this point their work is focused on the early opportunity corridors identified in the RTP.

- They also noted that other key goals are to secure increased funding from the Federal government and to achieve State of Good Repair on their capital investments.

- Another important point made during the interview was that the agency is always exploring methods for squeezing the most service out of the financial resources available and that it is hard to forecast service changes/improvements beyond a year due to funding variability. In line with these financial constraints, any service expansion will rely on available budget and if they want to expand, they will need to achieve efficiencies somewhere else in the system.
    - They further noted that service adjustments will be completed with the highest priority focus on access to jobs and equity for riders. Within this context, improvements in trip times is typically a key consideration.
    - Further, in discussing service adjustments, they highlighted the significant changes in travel patterns resulting from Covid, and that these changes have also resulted in changes in how they allocate their limited resources.
    - Finally, they noted that one other area of service design/development they are focusing on is implementing methods for more efficient/convenient transfers in order to shorten trip times.

- Discussion in this category also focused on some of the service initiatives MDOT MTA is undertaking. One initiative discussed was implementation of Quick-Bus, which is a limited stop service that would run from Westgate in Baltimore City to downtown Baltimore. This would be a limited-stop overlay on regular fixed-route service in the corridor that would be implemented with existing fleet and without transit priority

treatments. As funding becomes available, additional capital improvements would be implemented.

- In addition to Quick-Bus, they are moving forward with planning/alternatives analysis and preliminary design for two early opportunity corridors identified in the RTP (Bayview to Ellicott City and Towson to downtown Baltimore). They will also be starting work on additional corridors in the future.

Corridor Related Transit Goals

No MTA corridor-related transit goals were identified, given their focus on Baltimore City and County.

2.3 Interview Results – Anne Arundel County Office of Transportation

The results of the interview with staff from the Anne Arundel County Office of Transportation are summarized below, by question category.

Overall Strategic Goals/Priorities

The following key points were made by Office of Transportation staff relative to this question category.

- Overall, the County's priorities for the study corridor within Anne Arundel County are continued investment and development.

- In terms of land use priorities, the big nodes for business development and employment within the study area are BWI and Fort Meade. The representatives noted the Jessup area and along MD 175 as a node for continued residential development.
    - Another area of mixed residential/business focus is north of Arundel Mills and west of the airport in the undeveloped Ridge Road area.
    - Another area identified as a focus was Transit Oriented Development at the Dorsey MARC station.
    - A final note was the West County/Region 2 sector plan and rezoning effort currently underway. This portion of the County roughly corresponds to the Anne Arundel County portion of the BWI Marshall Airport to Columbia Town Center Corridor study area.

- Within the context of these overall priorities the Office of Transportation staff noted continued additional BRAC-related jobs at Fort Meade, plans for a Microsoft Data Center, also in the Fort Meade area, and continued development at National Business Park.

- Office of Transportation staff indicated that the county's Transportation Functional Master Plan has identified corridors within the study area for roadway extensions and improvements that should be considered for long term routing alternatives. Examples given were the potential of the extension of Hanover Road, the extension of Arundel Mills Boulevard to the west to connect to Race Road, and the extension west of Dorsey Road.

- Sustainability and equity were also identified as rising priorities, with a note that these two factors are important criteria in the awarding of federal and state grants.

Overall Transit Goals

- A number of transit priorities in the short term were identified. These include:
    - On demand transit zones in central and north county including in Severna Park, Pasadena, Severn and Crofton/Crownsville.
    - Increased frequency on the Saturday shopping shuttle between Freetown and Severn from 45 minutes to 30 minutes.
    - Expanded service on the Gold Line Extension route (route serves Ritchie Highway between the Glen Burnie Light Rail Station and Annapolis).

- Longer term, the County is focused on building out the Parole Transit Center in coordination with Annapolis Transit and the completion of a feasibility study of a new operations center that could handle all Office of Transportation Transit vehicles, including the larger size vehicles.

- In identifying the highest priorities for transit, Office of Transportation staff noted access to jobs and equity, with access for the county's low income population of high importance.

- Staff noted that there was significant support for transit from the County's elected officials and they felt that this support would remain steady, especially under the existing administration. They specifically noted the support for the Parole Transit Center, funding for vehicle purchases, and earmarks for fleet electrification.

Corridor Related Transit Goals

- Office of Transportation staff noted that the County's elected officials were familiar and supportive of the Regional Transit Plan process overall and were familiar with the BWI to Columbia Town Center corridor, though they did note that the County has higher transit priorities than this corridor.

- County staff reiterated the importance of Fort Meade as an activity center given its status as the largest employer in the County.

- During the discussion of this category, staff noted the success of the Office of Transportation Transit Route 201, which serves Arundel Mills, as the highest ridership line in the County system. They also noted the success of the County Connector route, which runs between the BWI Business District and Arundel Mills.

- Finally, they highlighted the importance of considering low income and vulnerable populations as recommendations are developed during the BWI Marshall Airport to Columbia Town Center planning process.

2.4 Interview Results – Howard County Office of Transportation

The results of the interview with staff from the Howard County Office of Transportation are summarized below, by question category.

Overall Strategic Goals/Priorities

The following key points were made by Office of Transportation staff relative to this question category.

- Office of Transportation staff identified two key significant land use initiatives included in the County General Plan for which the Office of Transportation would provide support, though in both instances the land use changes would be longer term.
    - The first location is Columbia Gateway Center. The General Plan identifies the Columbia Gateway Center as a target for denser mixed use development that would include residential and retail uses in addition to the commercial building uses that currently dominate Gateway Center. Broadly, the General Plan also identifies the incorporation of "Smart Technology" into buildings and facilities within Columbia Gateway Center.
    - The second area identified in the General Plan for denser, mixed use development is along US1. The General Plan recommendations are supported by the US Route 1 Sector Plan that includes transportation improvement recommendations and design guidelines. The proposed land use changes along US 1 would also include changes in zoning to support Transit Oriented Development adjacent to the Dorsey MARC station.

- Other overall strategic priorities identified during the interview included transit support for access to jobs, with the key activity centers noted as downtown Columbia and Columbia Gateway Center. In addition to the two land use priorities noted in this section's first bullet, the continued growth and development in Columbia Town Center was also noted as an important land use and trip generator/attraction consideration.

- Finally, staff identified the importance of more closely integrating transit supportive land use into the preparation of land use and development plans.

Overall Transit Goals

The discussion of overall transit goals identified the following transit priorities.

- Overall transit goals include:
    - Transit equity and better serving residents who rely on transit for their mobility. This includes improving service reliability (e.g., on-time performance).
    - Support for County economic development goals.
    - Identification of a rational and implementable approach to bus electrification.
    - Strong transit connections to the Howard County MARC stations overall as well as reliable connections between Camden and Penn Line stations.

- Specific service expansion/improvement priorities include:
    - Stronger connections along US 29 to Silver Spring and Washington DC, including higher frequencies and connections to the Montgomery County Flash BRT service. This is a very high priority for the Office of Transportation.
    - Service improvements on existing routes as outlined in the county's Transit Development Plan.
    - Stronger transit connections between northern US 1 and Columbia.
    - Stronger transit connections between Columbia, Ellicott City, and Catonsville in Baltimore County.

- In discussing funding availability for service expansion, Office of Transportation staff indicated that additional funding for transit service within Howard County is not likely and therefore service expansion would need to be implemented within a regional context, with regional funding. This would include strengthening connections between Howard County and other parts of the DC and Baltimore regions. Further, this strengthened integration would not just be focused on the traditional commute into downtown DC and Baltimore, but also for reverse trips to Howard County employment and activity centers.

- One final overall priority staff identified was strengthened first-mile/last-mile connections and stronger pedestrian/bicycle/transit integration.

Corridor-Related Transit Goals

- When asked about specific corridor-related transit goals, staff noted the County's highest priority is US 29 and connections to Montgomery County and DC via Silver

Spring. A second key priority is strengthening transit on US 1. Another potential corridor is US 40, with connections to the east-west early opportunity corridor along US 40.

- Overall, this corridor is not the highest priority to the County.

- When asked if elected officials are supportive of priority transit goals, it was noted that elected officials do support transit but that the funding constraints noted above make transit expansion difficult. They further noted that it is hard to gauge what responses to transit initiatives would be until details on service/markets/cost is provided.

Staff noted that Howard County elected officials were aware of, and took part in, the RTP planning process, with a specific focus on regional transit solutions.

3.0 Stakeholder Survey Results

Feedback on stakeholder priorities was solicited through an online survey (project stakeholders are listed in the introduction of this section). Two surveys were administered, one for commercial stakeholders and one for non-commercial advocacy groups.

The questions for each group are provided below.

3.1 Non-Commercial Stakeholders Survey

3.1.1 Non-Commercial Stakeholders Survey Questions

1. Please provide a short description of your organization and its overall goals and priorities.

2. Please provide a short description of how transit fits into/supports the mission and goals of your organization.

3. Does your organization have any specific priorities/goals for transit overall (please check all that apply)?

    a. More routes/access to more destinations
    b. Later hours of service
    c. More frequent service
    d. More direct routing
    e. More weekend service
    f. Other

4. Please provide a short description of the role your organization plays, if any, in advocating for increased funding for transit and/or other support for transit. Please also indicate if your organization is a 501(c)3.

5. Are there items your transit-using stakeholders have identified as specific needs (please check all that apply)?

    a. More routes/access to more destinations
    b. Later hours of service
    c. More frequent service
    d. More direct routing
    e. More weekend service
    f. Other

6. Are there any specific transit priorities in the Columbia Town Center to BWI Marshall Airport corridor that you feel need to be addressed? specific destinations to be served; vulnerable populations to be served; later hours of service; better frequency on existing service; better access to jobs; other.

7. Are there other priorities that have not been brought up that you would like to bring to our attention?

3.1.2 Non-Commercial Stakeholders Survey Results

Stakeholder responses are outlined below by individual response.

3.1.2.1 Central Maryland Transportation Alliance

1. Please provide a short description of your organization and its overall goals and priorities.

    The Central Maryland Transportation Alliance is a nonprofit advocacy organization based at the Baltimore Community Foundation. We exist to advocate for great transportation. A great transportation system grows your economic opportunity; a bad one is a drag on economic growth. A great transportation system gives you choices; a bad one limits your options. A great transportation system keeps you and your environment healthy; a bad one harms human health and environment.

2. Please provide a short description of how transit fits into/supports the mission and goals of your organization.

    Transit reduces disparities in access to jobs and other destinations based on income and race, it generates less air pollution per person-trip than driving, and it grows economic opportunities.

3. Does your organization have any specific priorities/goals for transit overall? (please check all that apply)

    - *More routes/access to more destinations*
    - *Later hours of service*
    - *More frequent service*
    - *More direct routing*
    - *More weekend service*

4. Please provide a short description of the role your organization plays, if any, in advocating for increased funding for transit and/or other support for transit. Please also indicate if your organization is a 501(c)3.

    We are part of the Baltimore Community Foundation, a 501c3.

5. Are there items your transit-using stakeholders have identified as specific needs? (please check all that apply)

    - *More routes/access to more destinations*
    - *Later hours of service*
    - *More frequent service*
    - *More direct routing*
    - *More weekend service*
    - *Other: more reliable service and travel times*

6. Are there any specific transit priorities in the Columbia Town Center to BWI Marshall Airport corridor that you feel need to be addressed? specific destinations to be served; vulnerable populations to be served; later hours of service; better frequency on existing service; better access to jobs; other.

    Better access to jobs. Per BMC analyses there are high opportunity jobs for low-skilled and mid-skilled workers in the BWI Business District and Columbia. A measurable objective should be to increase the number of low-skilled and mid-skilled workers who live within a 45-minute transit commute of both locations.

7. Are there other priorities that have not been brought up that you would like to bring to our attention?

    To support transit ridership, it's important to make it easier to walk between bus stops and destinations. That means zoning for walkable density and mixed uses, site plan review and guidelines that prioritize walking, and capital investment in sidewalk, crosswalks, curb cuts, ADA compliance and other pedestrian infrastructure.

3.1.2.2 BWI Business Partnership

1. Please provide a short description of your organization and its overall goals and priorities.

   Founded in 1985, the BWI Business Partnership is a nonprofit corporation comprised of governmental organizations, private businesses, and academic institutions, advocating for strong transportation policy and initiatives, driving sustainable economic and workforce development, and facilitating meaningful strategic relationships germane to the growth and development of the BWI Region.

2. Please provide a short description of how transit fits into/supports the mission and goals of your organization.

   As a transportation management association, our organization strives to improve transit options especially as it relates to workforce development and job opportunities.

3. Does your organization have any specific priorities/goals for transit overall? (please check all that apply)

   - *More routes/access to more destinations*
   - *Later hours of service*
   - *More frequent service*
   - *More direct routing*
   - *More weekend service*

4. Please provide a short description of the role your organization plays, if any, in advocating for increased funding for transit and/or other support for transit. Please also indicate if your organization is a 501(c)3.

   The Partnership(501c4) and its foundation, the BWI Community Development Foundation (501c3) manage an LDC grant program called the County Connector shuttle which is a free shuttle for workers and job seekers. There are 6 stops within a 3 mile radius of the Arundel Mills Mall and Live! Casino. Including the BWI Light Rail (BWI Marshall Airport), BWI MARC/Amtrak, Mathison Way (Amazon), Arundel Mills Mall and two neighborhood stops.

   Our Executive Director serves on the MDOT MTA Implementation Committee after serving on the Central MD Regional Transit Plan Commission, serves on the CMTA board of directors, serves on the GWP Capital Region Rail Vision committee. Staff

members also serve on the GBC Transportation and Mobility Committee among many other transit related activities.

5. Are there items your transit-using stakeholders have identified as specific needs? (please check all that apply)

    - *More routes/access to more destinations*
    - *Later hours of service*
    - *More frequent service*
    - *More direct routing*
    - *More weekend service*
    - *Other: These items have been checked because of feedback we have received from our ridership on the County Connector shuttle.*

6. Are there any specific transit priorities in the Columbia Town Center to BWI Marshall Airport corridor that you feel need to be addressed? specific destinations to be served; vulnerable populations to be served; later hours of service; better frequency on existing service; better access to jobs; other.

    Given that Live! Casino, BWI Marshall Airport and Amazon are located within this corridor study, the importance of connecting Columbia to these job centers would be a benefit for both communities. The challenge will be keeping the route efficient and still including those that truly rely on transit to get to job opportunities. These job centers are 24/7 operations so having weekend and later service hours would be needed. As discussed in our kickoff meeting, the local transit operators will really need to coordinate efforts between the 2 counties and work to feed the MTA larger route system.

7. Are there other priorities that have not been brought up that you would like to bring to our attention?

    Not at this time

3.1.2.3 Howard County Economic Development Authority

1. Please provide a short description of your organization and its overall goals and priorities.

    The Howard County Economic Development Authority is the economic development organization for Howard County. Our mission is to drive job creation and investment throughout the County. The Maryland Innovation Center is an endeavor of the HCEDA.

2. Please provide a short description of how transit fits into/supports the mission and goals of your organization.

   A threat to Howard County's economic vitality in the future is the lack of transit to move the working population throughout the County's residential and job centers and also throughout the entire region. More transit = more jobs

3. Does your organization have any specific priorities/goals for transit overall? (please check all that apply)

   - *More routes/access to more destinations*
   - *More direct routing*

4. Please provide a short description of the role your organization plays, if any, in advocating for increased funding for transit and/or other support for transit. Please also indicate if your organization is a 501(c)3.

   HCEDA provides support for increased funding, but ultimately defers to the County's Department of Transportation to lead these efforts. We are NOT a 501(c)3.

5. Are there items your transit-using stakeholders have identified as specific needs? (please check all that apply)

   - *More routes/access to more destinations*
   - *More frequent service*
   - *More direct routing*
   - *More weekend service*

6. Are there any specific transit priorities in the Columbia Town Center to BWI Marshall Airport corridor that you feel need to be addressed? specific destinations to be served; vulnerable populations to be served; later hours of service; better frequency on existing service; better access to jobs; other.

   Respondent did not respond to this question

7. Are there other priorities that have not been brought up that you would like to bring to our attention?

   Respondent did not respond to this question

3.1.2.4 Accessible Resources for Independence

1. Please provide a short description of your organization and its overall goals and priorities.

   We are a disability resource and advocacy organization run by people with disabilities for people with disabilities. Our mission is to maximize the independence of people with disabilities so they enjoy self-directed, productive lives.

2. Please provide a short description of how transit fits into/supports the mission and goals of your organization.

   To be independent, you need access to reliable transportation.

3. Does your organization have any specific priorities/goals for transit overall? (please check all that apply)

   - *More routes/access to more destinations*
   - *Later hours of service*
   - *More frequent service*
   - *More direct routing*
   - *More weekend service*

4. Please provide a short description of the role your organization plays, if any, in advocating for increased funding for transit and/or other support for transit. Please also indicate if your organization is a 501(c)3.

   We are limited in our capacity to do a lot of advocacy so we mostly sign on to larger group efforts. We are a 501(c)3.

5. Are there items your transit-using stakeholders have identified as specific needs? (please check all that apply)

   - *More routes/access to more destinations*
   - *Later hours of service*
   - *More frequent service*
   - *More direct routing*
   - *More weekend service*

6. Are there any specific transit priorities in the Columbia Town Center to BWI Marshall Airport corridor that you feel need to be addressed? specific destinations to be served; vulnerable populations to be served; later hours of service; better frequency on existing service; better access to jobs; other.

Respondent did not respond to this question

7. Are there other priorities that have not been brought up that you would like to bring to our attention?

   Respondent did not respond to this question

3.1.2.5 Horizon Foundation

1. Please provide a short description of your organization and its overall goals and priorities.

   The Horizon Foundation is leading community change so everyone in Howard County can live a longer, better life. We are committed to improving health through innovative initiatives, collaborative partnerships, strategic grantmaking and thoughtful advocacy. Our strategic priorities include: promoting healthy kids and families, encourage healthy aging and ensuring a more equitable community.

2. Please provide a short description of how transit fits into/supports the mission and goals of your organization.

   Horizon Foundation alongside community partners advocate for local investment in bike and pedestrian infrastructure that is connected to transit and complete streets. Investing in safe, accessible spaces for biking and walking benefits a broad and diverse cross-section of our community, including children and families seeking to walk or bike to school, young workers who want to bike to the office, residents without a car who need to get to a bus station and people with disabilities who need to be able to move through their neighborhoods. Investment in our active transportation infrastructure will make it safer and easier for residents to get around and be more physically active.

3. Does your organization have any specific priorities/goals for transit overall? (please check all that apply)

   - *Other: Funding for bike and pedestrian infrastructure, complete streets implementation*

4. Please provide a short description of the role your organization plays, if any, in advocating for increased funding for transit and/or other support for transit. Please also indicate if your organization is a 501(c)3.

   Horizon Foundation and community stakeholders with the Streets for All Coalition advocates for complete streets and funding for bike and pedestrian infrastructure, including bike paths, sidewalks, bike lanes, crosswalks and bus stop improvements. Horizon Foundation is a 501(c)3.

5. Are there items your transit-using stakeholders have identified as specific needs? (please check all that apply)

   - *More routes/access to more destinations*
   - *Later hours of service*
   - *More frequent service*
   - *More weekend service*

6. Are there any specific transit priorities in the Columbia Town Center to BWI Marshall Airport corridor that you feel need to be addressed? specific destinations to be served; vulnerable populations to be served; later hours of service; better frequency on existing service; better access to jobs; other.

   Priorities should be centered in equity that ensures historically marginalized communities are safely connected to transit to access the variety of institutions, jobs, services and supports in their community. This may translate to connected sidewalks, paths and crosswalks that will allow transit users to safely and conveniently access transit, expanding routes and destinations to key community locations, service hours and reassessing costs.

7. Are there other priorities that have not been brought up that you would like to bring to our attention?

   Other priorities include international focus on equity, investments in bike and pedestrian infrastructure that connects with transit and bus stop improvements that are accessible for all transit users.

3.2 Commercial Stakeholders Survey

3.2.1 Commercial Stakeholders Survey Questions

1. Overall, what role does transit play in providing access for employees, customers, other groups, to your business/location?

2. Please estimate the percent of employees that arrive at your business/location via transit.

   a. 0 to 5%
   b. 6 to 10%
   c. >10%

   Please also provide any additional relevant information.

3. Please estimate the percent of customers that arrive at your business/location via transit.

   a. 0 to 5%
   b. 6 to 10%
   c. >10%

   Please also provide any additional relevant information.

4. Please estimate the percent of other visitors to your business/location who arrive via transit.

   a. 0 to 5%
   b. 6 to 10%
   c. >10%

   Please also provide any additional relevant information.

5. Are there items your transit-using employees/visitors have identified as a specific need? (please check all that apply)

   a. More routes/access to more destinations
   b. Later hours of service
   c. More frequent service
   d. More direct routing
   e. More weekend service
   f. Other

6. Are there destinations/rider groups within the corridor that have been identified as targets for improved service by your organization?

7. Are there other priorities that have not been brought up that you would like to bring to our attention? Please comment.

3.1.2 Commercial Stakeholders Survey Results

Commercial survey results are outlined below by survey question.

1. Overall, what role does transit play in providing access for employees, customers, other groups, to your business/location? (5 responses)

    - *Respondent 1 - Connectivity is essential for employers and we can no longer rely so heavily on roads. Transit essential to the future economic vitality of the region.*
    - *Respondent 2 - Public Transit is a huge part!*
    - *Respondent 3 - Transit is primarily for employee access*
    - *Respondent 4 - Transit plays a minor for my organization directly. However, as a business membership organization, transit is meaningful to employers specifically those that have lower end wages or blue collar workers.*
    - *Respondent 5 - I believe transit for our location is most significant for employees getting to and from work in Downtown Columbia. Secondarily, transit provides access to other regional employment centers for residents of Downtown Columbia.*

2. Please estimate the percent of employees that arrive at your business/location via transit. (5 responses)

    Please also provide any additional relevant information.

    - *Respondent 1 – 6 to 10%*
    - *Respondent 2 – 6 to 10%*
    - *Respondent 3 – 6 to 10%*
    - *Respondent 4 – 0 to 5%*
    - *Respondent 5 – 0 to 5%*
        - *Respondent 5 Additional information: In the past we have estimated approximately 5% of employees use transit. Not sure how this has been affected by pandemic work and travel pattern changes.*

3. Please estimate the percent of customers that arrive at your business/location via transit. (5 responses)

   Please also provide any additional relevant information.

   - *Respondent 1 – 6 to 10%*
   - *Respondent 2 – 6 to 10%*
   - *Respondent 3 – 0 to 5%*
   - *Respondent 4 – 0 to 5%*
   - *Respondent 5 – 0 to 5%*

4. Please estimate the percent of customers that arrive at your business/location via transit.

   Please also provide any additional relevant information.

   - *Respondent 1 – 6 to 10%*
   - *Respondent 2 – 6 to 10%*
   - *Respondent 3 – 0 to 5%*
   - *Respondent 4 – 0 to 5%*
   - *Respondent 5 – 0 to 5%*
     - *Respondent 5 Additional information: The limited level of service of the transit to and from Downtown Columbia means there are very few riders of choice in and out of DTC. SOV transportation is just far more easy and convenient for those who can afford it.*

5. Are there items your transit-using employees/visitors have identified as a specific need (please check all that apply)? (5 responses)

   - *Respondent 1 – More routes/access to more destinations, more direct routing*
   - *Respondent 2 – Later hours of service, more frequent service, more direct routing*
   - *Respondent 3 – More frequent service, more direct routing*
   - *Respondent 4 – More routes/access to more destinations, later hours of service, more frequent service*
   - *Respondent 5 – Later hours of service, more frequent service, more direct routing, more weekend service*

6. Are there destinations/rider groups within the corridor that have been identified as targets for improved service by your organization? (3 responses)

    - *Respondent 1 – no response*
    - *Respondent 2 – no response*
    - *Respondent 3 – not currently*
    - *Respondent 4 - Retail restaurant, hospitality, and manufacturing/logistics workers could all benefit by having more transportation options complete with increased times of operations.*
    - *Respondent 5 - Destinations: Downtown Columbia, Gateway, Dorsey MARC Station, Fort Meade, BWI.*

7. Are there other priorities that have not been brought up that you would like to bring to our attention? Please comment. (1 response)

    - *Respondent 1 – no response*
    - *Respondent 2 – no response*
    - *Respondent 3 – no response*
    - *Respondent 4 – no response*
    - *Respondent 5 - Connection from Downtown Columbia to the South (to Silver Spring Metro Station) is the other key corridor to the DTC Activity Center. Preferably dedicated ROW throughout the connections, for BRT or automated vehicles*.

Appendix 2 – Roadway and Pedestrian Characteristics

Central Maryland Regional Transit Plan Pilot Corridor Analysis
Corridor #25: BWI Marshall Airport to Columbia Town Center
Roadway and Pedestrian Access Analysis and Evaluation

1. Introduction

There are multiple potential roadway paths to support a transit route or routes between Columbia Town Center and BWI Marshall Airport, as well as to other key activity centers within the study corridor. The purpose of this report section is to identify the roadway/pedestrian access characteristics of each of these potential roadways in order to act as a foundation for the evaluation of alternative routes in later steps of the planning process. All potential roadways were evaluated to ensure a comprehensive assessment to support later planning phases.

The review of characteristics is broken out by corridor segment between Columbia and the airport and other activity centers and focuses on five characteristics that will help determine each roadway's current suitability for transit service as well as future required improvements. The roadways evaluated are shown in Figures 1 through 3.

A review of potential roadway paths is outlined below by corridor segment, starting in Columbia.

2. Segment 1 – Leaving Columbia Town Center

There are three roadways leaving Columbia Town Center that could then connect to multiple east-west paths toward the airport and other key activity centers. Each Segment 1 roadway is described below and shown in Figure 1.

2.1 Broken Land Parkway (to Hickory Ridge Road) – Broken Land Parkway runs through Columbia Town Center on the east side of the mall and travels south/southwest toward Snowden River Parkway and MD Route 32. Roadway characteristics within Columbia Town Center are as follows:

- *Roadway cross section* – Broken Land Parkway is two lanes in each direction within Columbia Town Center.

- *Pedestrian accommodations* – The roadway has sidewalks on both sides for the entire length of this segment. Major intersections are signal protected but not all intersections are signalized.

- *Access to adjacent neighborhoods* – There is direct pedestrian access to adjacent land uses in this section of Broken Land Parkway. Land uses are predominantly residential but also some commercial properties as well.

- *Access to existing bus stops* – This section of Broken Land Parkway has transit service, and access to existing bus stops in this segment is via the existing sidewalk network.

- *Connections to east-west roadways* – Broken Land Parkway beyond this segment ultimately connects to MD 32 and Snowden River Parkway. Snowden Rive Parkway ultimately connects with Columbia Gateway Center.

2.2 Little Patuxent Parkway/MD Route 175 (to US 29) – Little Patuxent Parkway is the primary arterial roadway through the heart of Columbia Town Center and provides access to nearly all of the major destinations within Town Center as well as Howard Community College and Howard County Hospital, each east of Town Center. Roadway and pedestrian access characteristics within the Town Center corridor segment are as follows:

- *Roadway cross section* – Little Patuxent Parkway is two lanes in each direction for its entire length within this segment, with dedicated right and left turn lanes at major intersections.

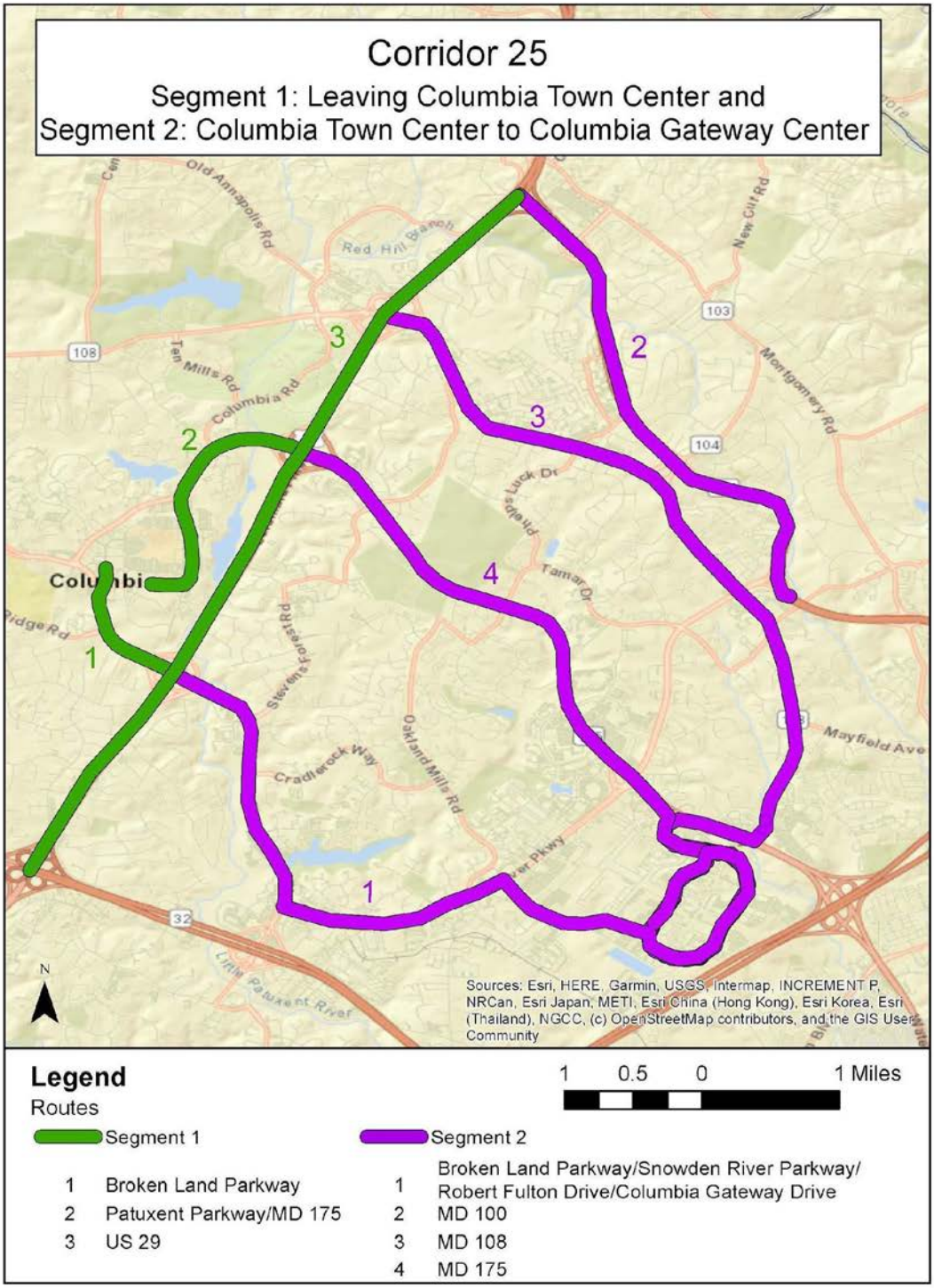
- *Pedestrian accommodations* – The roadway has sidewalks on at least one side for the entire length of this segment, with the majority of the segment with sidewalks on both sides. Most intersections within this segment are signal protected and equipped with crosswalks and pedestrian signals.

- *Access to adjacent neighborhoods* – There is direct access to adjacent land uses in this corridor segment. Adjacent land uses are predominantly residential in this segment.

- *Access to bus stops* – Access to bus stops in this segment is via the existing sidewalk network.

- *Connections to east-west roadways* – MD 175 connects to US 29 at the eastern end of this segment and also continues as a potential stand-alone eastbound route. It also connects farther east to other potential routes including MD 108, US 1, and Columbia Gateway Center Drive.

Figure 1 – Segment 1 and Segment 2 Roadways



2.3 US 29 – US 29 is a north/south roadway that bisects Columbia Town Center and would be a potential connection from Town Center to four potential east-west roadways: MD 100, MD 108, MD 175 and MD 32. Roadway and pedestrian access characteristics in the portion of the roadway that runs through Town Center are as follows:

- *Roadway cross section* – US 29 is three lanes in each direction along its entire length through Town Center. The roadway is a limited access highway along the entire length of this section.

- *Pedestrian accommodations* – As a limited access roadway, there is no pedestrian infrastructure along the roadway.

- *Access to adjacent neighborhoods* – As a limited access roadway, there is no pedestrian access to neighborhoods adjoining the highway.

- *Access to bus stops* – There are no bus stops along this limited access section of US 29.

- *Connections to east-west roadways* – US 29 would provide access from Columbia Town Center to MD 32, MD 175, MD 108, and MD 100.

Table 1 contains a summary of Segment 1 roadway/pedestrian access characteristics.

Table 1 – Segment 1 Roadway and Pedestrian Access Characteristics Summary

Roadway	Cross Section	Pedestrian Accommodations	Adjacent Neighborhood Access	Access to Bus Stops	East-West Roadway Connections
Broken Land Parkway	Three lanes in each direction	Sidewalk on both sides of street	Direct access	Via sidewalk network	MD 32, Snowden River Pkwy to Columbia Gateway Center
Patuxent Parkway/MD 175	Two lanes in each direction	Sidewalk on both sides of street for majority of section	Direct access	Via sidewalk network	US 29 MD 108, Columbia Gateway Center (farther east beyond this section)
US 29	Three lanes each direction	No pedestrian infrastructure	No direct access	No bus stops	MD 32, MD 175, MD 108, MD 100

3. Segment 2 – Columbia Town Center to Columbia Gateway Center/US Route 1

There are five primary roadways or roadway combinations that could provide access to Columbia Gateway Center, the Gateway Center vicinity or US 1 at the eastern end of this corridor segment. These are summarized below and shown in Figure 1.

3.1 Broken Land Parkway/Snowden River Parkway/Robert Fulton Drive/Columbia Gateway Drive - Broken Land Parkway continues in a southwest direction after it leaves Town Center to its intersection with Snowden River Parkway, with ultimate access to Columbia Gateway Center via Snowden River Parkway. The key roadway/pedestrian access characteristics for the series of roads leading to Columbia Gateway are as follows:

- *Roadway cross section* – Broken Land Parkway is predominantly three lanes in each direction between Columbia Town Center and Snowden River Parkway, with accommodations for left and right-turn only lanes. Snowden River Parkway is two lanes in each direction between Broken Land Parkway and Robert Fulton Drive, with right and left-turn only lanes included as part of the cross-section. Robert Fulton Drive is two lanes in each direction to the intersection with Columbia Gateway Drive and has left turn pockets along the alignment. Columbia Gateway Drive is also two lanes in each direction with left turn pockets.

- *Pedestrian accommodations* – The first section of this segment of Broken Land Parkway between Hickory Ridge Road and Stevens Forest Road has no sidewalks. Between Stevens Forest Road and the vicinity of Lake Elkhorn, there is a sidewalk on the east side of the roadway but not on the west side. For a short distance between Lake Elkhorn and Snowden River Parkway, there are sidewalks on both sides of the roadway. Most intersections along this section are signalized but not all have crosswalks or pedestrian signals.

  Snowden River Parkway has intermittent sidewalk infrastructure between Broken Land Parkway and Robert Fulton Drive. In those instances where there are sidewalks, they are typically on only one side of the street, though one short section has sidewalks on both sides. Major intersections are signalized, though there are others that are not signal protected. Not all signalized intersections are equipped with crosswalk or pedestrian signals.

  Robert Fulton Drive has a sidewalk on the south side of the street for most of its length. Major intersections are signal protected but are not equipped with crosswalks or pedestrian signals. Columbia Gateway Center Drive has a sidewalk on one side of the street for its entire length. Only a few intersections along the loop are fully signalized. In most instances a pedestrian crossing the street would be required to do so without signal protection and without a crosswalk.

- *Access to adjacent neighborhoods* – There is direct access to adjacent residential land uses at major intersections along Broken Land Parkway but pedestrian access from the neighborhoods will typically be difficult given the circular and indirect nature of the street

network in adjacent neighborhoods. Access to land uses along Snowden River is also available via major intersections, with land use being a mix of commercial and some residential. Direct access to adjacent commercial properties is available along both Robert Fulton Drive and Gateway Center Drive, although these properties are typically surrounded by large surface parking lots.

- *Access to existing bus stops* – Bus stops exist at some of the major intersections along this roadway segment. In some instances, stops are accessible via the existing sidewalk network though in other instances, neither sidewalk access nor an ADA compatible concrete pad is available at the stop.

- *Connections to east-west roadways* – Broken Land Parkway in this corridor segment will connect to MD 32 and Snowden River Parkway. Snowden River ultimately provides access to Columbia Gateway Center via Robert Fulton Drive.

3.2 MD 175 – In this segment, MD 175 continues east towards Columbia Gateway Center. Roadway and pedestrian access characteristics in the segment are summarized below:

- *Roadway cross section* – MD 175 in this corridor segment is two lanes in each direction with left and right-turn only lanes at major intersections.

- *Pedestrian accommodations* – There are no sidewalks in this section of MD 175. All intersections are signal protected and are equipped with crosswalks and pedestrian signals.

- *Access to adjacent neighborhoods* – There is direct pedestrian access to adjacent predominantly residential land uses at each major intersection along MD 175, though the indirect configuration of local residential neighborhood streets means many portions of adjacent neighborhoods would not be within walking distance of MD 175.

- *Access to existing bus stops* – There are no bus stops in this section of MD 175.

- *Connections to east-west roadways* – MD 175 continues east into the next corridor segment and also provides access to Columbia Gateway Center. Farther east it also connects to MD 108 and US 1.

3.3 MD 108 – MD 108 is an east-west roadway that runs parallel to both MD 175 and MD 100 and which would be accessed via US 29. The section of MD 108 described here is located between US 29 at its western end and its intersection with MD 175 at its eastern end. MD 108 roadway and pedestrian access characteristics are summarized below.

- *Roadway cross section* – MD 108 in this corridor segment is one lane in each direction with left and right-turn only lanes at major intersections.

- *Pedestrian accommodations* – There is a sidewalk on the north side of the roadway until the intersection with Waterloo Road. East of the Waterloo Road intersection and until the intersection with MD 175, there is intermittent sidewalk infrastructure but the majority of the roadway is without sidewalks. There are signals at some major intersections but there are a number of intersections with no signal protection. Some signalized intersections are equipped with crosswalks and pedestrian signals while others are not.

- *Access to adjacent neighborhoods* – There is direct pedestrian access to adjacent uses via intersections along this section of MD 108. Adjacent residential uses have curved/indirect streets so many locations in adjacent residential neighborhoods would be outside walking distance to MD 108. Land use on the northern side of the MD 108 is predominantly commercial and light industrial.

- *Access to existing bus stops* – There are bus stops at the western end of this section of MD 108 which are accessible from the existing sidewalk network.

- *Connections to east-west roadways* – This section of MD 108 connects to MD 100 via Waterloo Road. Farther east, MD 108 intersects and terminates at MD 175 in the vicinity of Columbia Gateway Center. Direct access to Gateway Center would be via entrance ramps from MD 175 that are located directly west of the intersection of the two roadways.

3.4 MD 100 – Access to MD 100 from Columbia Town Center would be via US 29. MD 100 is the northernmost east-west roadway being evaluated as part of the study. Its roadway and pedestrian access characteristics are summarized below.

- *Roadway cross section* – MD 100 is a limited access roadway with three lanes in each direction.

- *Pedestrian accommodations* – There is no pedestrian infrastructure along MD 100 in this section given its limited access configuration.

- *Access to adjacent neighborhoods* – There is no direct access to adjacent neighborhoods from MD 100 given its limited access nature.

- *Access to existing bus stops* – There are no bus stops on MD 100 given its limited access nature.

- *Connections to east-west roadways* – MD 100 continues east towards Arundel Mills Mall and ultimately the airport, and thus represents one potential route for transit service. It also connects to other roadways in this segment via Waterloo Road (MD 108) and via Snowden River Parkway (MD 108 and MD 175).

3.5 Oakland Mills Road/Guilford Road – The roadway combination of Oakland Mills Road and Guilford Road would provide a connection between Snowden River Parkway and US Route 1. The combined roadway and pedestrian access characteristics are summarized below.

- *Roadway cross section* – Both Oakland Mills Road and Guilford Road are predominantly one lane in each direction with some left and right-turn only lanes at key intersections.

- *Pedestrian accommodations* – Oakland Mills Road has a sidewalk on one side of the road or the other for the entire length between Snowden River Parkway and US 1. There are signals at some major intersections but there are a number of intersections with no signal protection. Some signalized intersections are equipped with crosswalks and pedestrian signals while others are not.

- *Access to adjacent neighborhoods* – There is direct pedestrian access to adjacent uses, both commercial and residential, via intersections along Oakland Mills and direct access to adjacent uses, predominantly residential, along Guilford Road.

- *Access to existing bus stops* – There are bus stops along Oakland Mills Road and a short portion of Guilford Road. Access to stops on Oakland Mills is predominantly via the existing sidewalk network, though some stops do not have direct sidewalk access where a sidewalk is only available on one side of the street. Generally, there is not sidewalk access to stops on Guildford Road given the lack of sidewalk infrastructure.

- *Connections to east-west roadways* – The combined Oakland Mills/Guilford Road roadway connects Snowden River Parkway and US 1.

A summary of the Segment 2 roadway and pedestrian access characteristics is provided is Table 2.

Table 2 – Segment 2 Roadway and Pedestrian Access Characteristics Summary

Roadway	Cross Section	Pedestrian Accommodations	Adjacent Neighborhood Access	Access to Bus Stops	East-West Roadway Connections
Broken Land Parkway	Three lanes each direction	Sidewalk – one side of street – signal protection at intersection with major streets. Intersections do not have crosswalks, pedestrian signals	Direct access at major intersections	Some via existing sidewalk network, some not connected to sidewalk infrastructure or without ADA compliant pads	MD 32, Snowden River Pkwy to Columbia Gateway Center
Snowden River Parkway	Two lanes each direction	Intermittent sidewalk infrastructure, major intersections signal protected but without crosswalks or pedestrian signals	Direct access at major intersections	Some via existing sidewalk network, some not connected to sidewalk infrastructure or without ADA compliant pads	Continuation of Broken Land Parkway route to Columbia Gateway
Robert Fulton Drive	Two lanes each direction	Sidewalk on south side of roadway. Some intersections signal protected but without pedestrian signals or crosswalks	Direct access at intersections and adjacent commercial properties	Via existing sidewalk network. Not all stops have ADA compliant pads	Connection to Columbia Gateway Center Drive
Columbia Gateway Drive	Two lanes each direction	Sidewalk along inner loop of roadway. Small number of intersections signal protected, but without crosswalks or pedestrian signals	Direct access via commercial property surface parking lots	Some via existing sidewalk network, some not tied to sidewalk infrastructure. Not all stops have ADA compliant pads	Columbia Gateway internal circulation
MD 175	Two lanes each direction	No sidewalk infrastructure. Major intersections are signal protected and equipped with crosswalks and pedestrian signals	Access at major intersections	No bus stops	Continue to next segment of MD 175, direct access to Columbia Gateway from MD 175

Table 2 – Segment 2 Roadway and Pedestrian Access Characteristics Summary ***(cont.)***

Roadway	Cross Section	Pedestrian Accommodations	Adjacent Neighborhood Access	Access to Bus Stops	East-West Roadway Connections
MD 108	One lane in each direction	Sidewalk on north side of roadway between US 29 and Waterloo Road – intermittent infrastructure east of Waterloo Road. Some signal protected intersections equipped with pedestrian signals and crossw	Access at major intersections and to directly adjacent properties	Stops at western end of segment – via sidewalk network. No stops at eastern end of segment	Connects to MD 175 in vicinity of Columbia Gateway. Connections to MD 100 via Waterloo Road and Snowden River Parkway
MD 100	Three lanes in each direction – limited access	No sidewalk infrastructure	No direct access to adjacent neighborhoods	No bus stops	MD 100 farther east Connections to MD 108 (Waterloo Road) and MD 175 (Snowden River Parkway)
Oakland Mills Road/Guilford Road	One lane in each direction	Sidewalk infrastructure on at least one side on Oakland Mills, no sidewalk infrastructure on Guilford.	Access predominantly at major intersections of Oakland Mills, direct access on Guilford.	Some via existing sidewalk network, some not tied to sidewalk infrastructure. Not all stops have ADA compliant pads	Access between Snowden River Parkway and US 1.

4. Segment 3 – Columbia Gateway Center to Baltimore-Washington Parkway

There are three primary east-west roadways in this corridor segment: MD 32, MD 175, and MD 100 as well as four additional east-west minor arterials. In addition, two major roadways, US 1 and the Baltimore-Washington Parkway, run north-south in this segment and connect each of the east-west roadways. Finally, there are five additional north-south minor arterials that connect different east-west roadways within the segment. Each roadway is summarized below and shown in Figure 2, starting first with the major roadways.

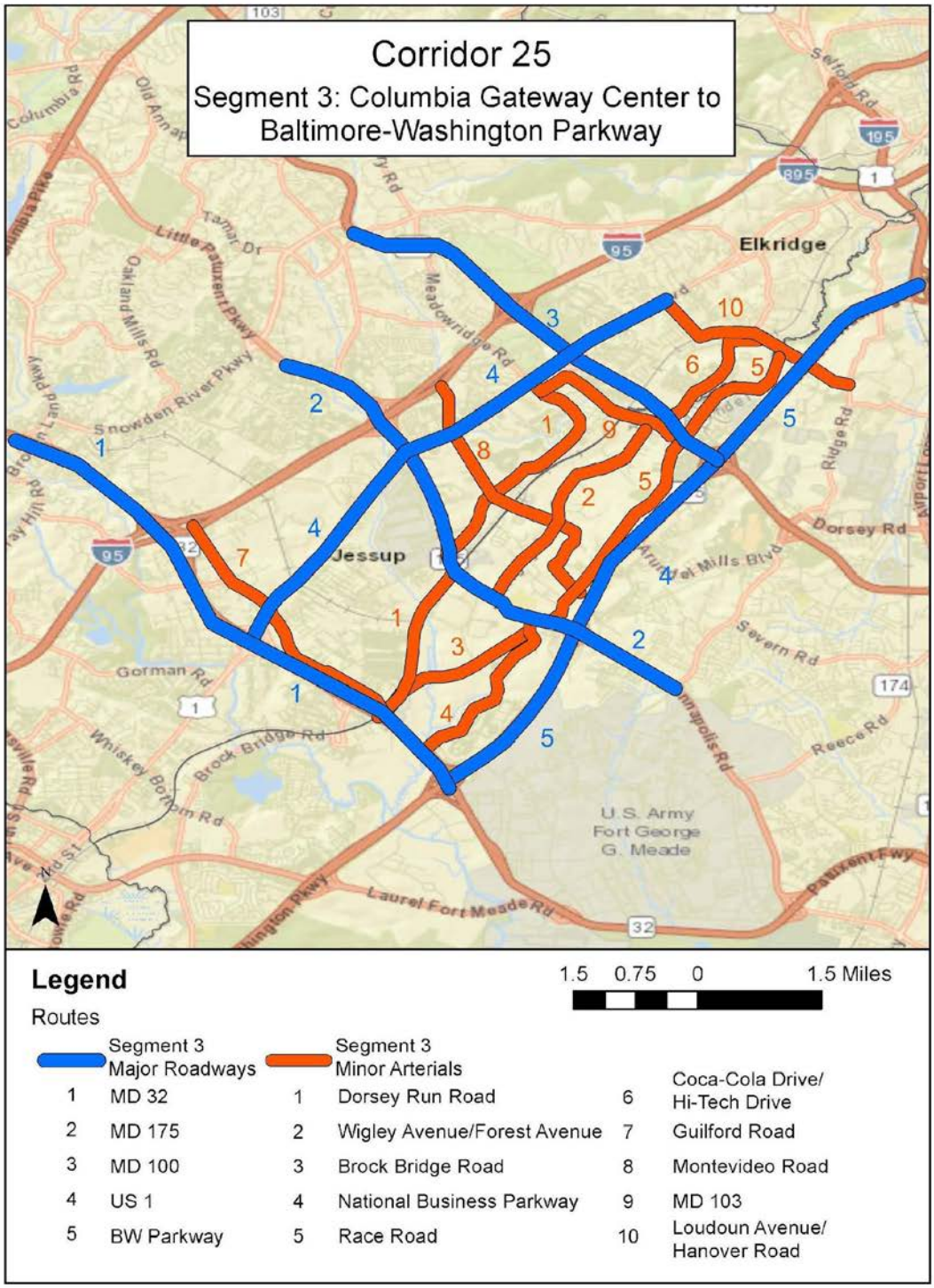
4.1 MD 32 (east-west) – MD 32 is the southernmost roadway evaluated in the study area and would be accessed via Broken Land Parkway. Roadway and pedestrian access characteristics for MD 32 within this segment are summarized below.

- *Roadway cross section* – MD 32 is a limited access highway between Broken Land Parkway and the Baltimore/Washington Parkway with three lanes in each direction.

- *Pedestrian accommodations* – There is no pedestrian access along MD 32 given its limited access configuration.

- *Access to adjacent neighborhoods* – There is no direct access to adjacent neighborhoods from MD 32 given its limited access configuration.

Figure 2 – Segment 3 Roadways



- *Access to existing bus stops* – There are no bus stops along this segment of MD 32 given its limited access configuration.

- *Connections to east/west and north/south roadways* – This section of MD 32 would continue east to segment four and additional north-south connections within that segment. Fort Meade is also located in the northeast quadrant of the intersection of MD 32 and the Baltimore- Washington Parkway. North/south connections within this segment include US 1, Dorsey Run Road, Brock Bridge Road, and the Baltimore-Washington Parkway.

4.2 Maryland 175 (east-west) – MD 175 continues east into Segment 3 and runs through the full segment length. Roadway and pedestrian access characteristics within this segment are summarized below.

- *Roadway cross section* – MD 175 has three lanes in each direction between Columbia Gateway Center and US 1. East of US 1 the roadway transitions to one lane in each direction, which continues to a point just west of the intersection of National Business Parkway and MD 175. From this point to the end of the segment at the intersection with MD 713 (Ridge Road), the roadway is two lanes in each direction. This section of MD 175 includes a center bi-directional turn lane to accommodate turns into non-signal protected business and residential entrances as well as left and right turn only lanes at major intersections.

- *Pedestrian accommodations* – Sidewalk infrastructure is intermittent along this entire roadway section, with some sections of disconnected sidewalks but much longer lengths of the section without sidewalks. Major intersections are signal protected, with some equipped with crosswalks and pedestrian crossing signals while others are not.

- *Access to adjacent neighborhoods* – There is direct access to residences and business along this entire roadway section. Commercial and residential driveways enter directly onto the roadway.

- *Access to existing bus stops* – There are no bus stops along this segment of MD 175.

- *Connections to east/west and north/south roadways* – This section of MD 175 would continue into Segment 4 and also intersects with multiple north-south roadways including US 1, Brock Bridge Road, National Business Parkway, Baltimore-Washington Parkway, and MD 713 (Ridge Road).

4.3 MD 100 (east/west) – MD 100 in this segment continues as a limited access highway with no direct access to adjacent neighborhoods and no pedestrian infrastructure. MD 100 intersects with the following north/south roadways in this segment: US 1, the Baltimore Washington Parkway and Arundel Mills Boulevard. It also continues east into Segment 4.

4.4 US 1 (north-south) – US 1 is a major north-south roadway that traverses the entire length of the study area from MD 32 in the south to MD 100 in the north. Its roadway and pedestrian access characteristics are outlined below.

- *Roadway cross section* – US 1 has two lanes in each direction with left and right turn-only lanes for its entire length from MD 32 in the south to MD 100 in the north. Major intersections are signal protected but there are long distances between intersections with no signal protection.

- *Pedestrian accommodations* – Sidewalk infrastructure is intermittent along this entire roadway section, with some sections of disconnected sidewalks but much longer lengths of the roadway without sidewalks. Some signal protected intersections are equipped with crosswalks and pedestrian crossing signals while others have no pedestrian infrastructure.

- *Access to adjacent neighborhoods* – There is direct access to residences and business along this entire roadway section. Commercial driveways enter directly onto the roadway.

- *Access to existing bus stops* – Bus stops are located along the length of this roadway section. Some stops are accessible from the existing sidewalk network and have ADA compliant concrete pads while other stops are not connected to an existing sidewalk nor have a pad for waiting passengers.

- *Connections to east/west roadways* – This section of US 1 connects to major east-west roadways MD 32, MD 175 and MD 100. In addition, it connects with Guilford Road, Montevideo Road, MD 103, and Loudon Avenue, four east-west minor arterials within Segment 3.

4.5 Baltimore Washington Parkway (north-south) – The Baltimore Washington Parkway is a north-south limited access highway that traverses the entire length of the study area from MD 32 in the south to the Interstate-195 in the north (Interstate-195 provides direct access into BWI-Marshall Airport). Due to its limited access configuration, the Baltimore-Washington Parkway has no direct access to adjacent neighborhoods and has no pedestrian infrastructure. The Parkway intersects with each of the major east=west roadways in the study area: MD 32, MD 175, MD 100, and also connects to Interstate 195.

4.6 East-West Minor Arterials – In addition to the three major east-west roadways summarized above, there are four east-west minor arterials that traverse portions of Segment 3. Each is summarized below, from south to north.

4.6.1 Guilford Road – Guilford Road is an east-west minor arterial that runs between US 1 and National Business Parkway and intersects with north-south minor arterials Dorsey Run Road, Brock Bridge Road and National Business Parkway. The roadway is one lane in each direction between US 1 and Dorsey Run Road and two lanes in each direction

between Dorsey Run Road and National Business Parkway. The roadway is equipped with left and right turn only lanes along its length and it provides direct access to adjacent neighborhoods. Major intersections are signal protected but there are long stretches with no signals. Intersections with signals also have crosswalks and pedestrian signals. There is intermittent sidewalk infrastructure but significant alignment sections without sidewalks. There is no existing transit service. The roadway can connect to MD 32 at the National Business Parkway interchange.

4.6.2 Montevideo Road - Montevideo Road runs east-west between US 1 and Race Road and intersects with north-south minor arterials Dorsey Run Road, Forest Avenue and Race Road. The roadway is one lane in each direction for its entire length, with very limited right and left turn only lanes. There are no signal protected intersections and there is very intermittent sidewalk infrastructure. There is direct access to adjacent land uses. There is no direct connection to east-west roadways but connections via north-south minor arterials provide connections to MD 32, MD 175, and MD 100. There is no existing transit service.

4.6.3 MD 103 – MD 103 runs east-west between US 1 and Race Road, just south of MD 100, and intersects with north-south minor arterials Dorsey Run Road, Forest Avenue, Coca-Cola Drive, and Race Road. The roadway is generally one lane in each direction with right and left turn only lanes along most of its length. There is one signalized intersection at Coca-Cola Drive but it is not equipped with crosswalks or pedestrian signals. There is very intermittent sidewalk infrastructure and there is direct access to adjacent land uses. There is no direct connection to east-west roadways but connections via minor north-south arterials provide connections to MD 32, MD 175, and MD 100. There is no existing transit service.

4.6.4 Loudon Avenue/Mound Street/Anderson Avenue/Hanover Road – This combination of streets run east-west between US 1 and the intersection of Hanover Road and Ridge Road and intersects with north-south minor arterial Coca Cola Drive/Hi Tec Drive. The roadway is one lane in each direction and is not equipped with left or right turn only lanes. There are no signalized intersections. There is a sidewalk on the south side of the road at the western end of the roadway but farther east there is no sidewalk infrastructure. There is direct access to adjacent land uses. There is no connection to east-west roadways but connections are available to MD 100 via Coca Cola Drive/Hi Tec Drive and further south to MD 175 and MD 32 via Race Road and Forest Road/Wigley Avenue. There is no existing transit service.

4.7 North-South Minor Arterials – In addition to the two major north-south roadways summarized above, there are six north-south minor arterials that traverse portions of Segment 3. Each is summarized below, from east to west.

4.7.1 **Dorsey Run Road** – Dorsey Run Road runs north-south between MD 32 at the southern end of the study area and MD 103, one of the east-west minor arterials described above. The roadway is generally one lane in each direction with a bi-directional center turn lane north of MD 175 and a limited number of left and right turn only lanes south of MD 175. There are three signalized intersections at MD 32, Guildford Road and MD 175. The Guildford Road and MD 175 intersections are equipped with crosswalks and pedestrian signals. The section north of MD 175 has sidewalks on both sides of the street and there is a sidewalk on one side of the street at the southern end near MD 32. The remainder of the roadway does not have sidewalk infrastructure. There is direct access to adjacent land uses along the entire length of the roadway. There is no existing transit service. The roadway provides direct connections to major east-west roadways MD 32 and MD 175 and east-west minor arterials Guilford Road, Montevideo Road, and MD 103.

4.7.2 **Brock Bridge Road** – Brock Bridge Road runs north-south between MD 32 at the southern end of the study area and merges and terminates at the intersection with National Business Parkway just south of MD 175. The roadway is one lane in each direction with a very limited number of left and right turn only lanes. There are no signalized intersections along the roadway and there is no sidewalk infrastructure. There is direct access to adjacent land uses. There is no transit service. The roadway provides direct connections to major east-west roadways MD 32 and MD 175.

4.7.3 **National Business Parkway** – National Business Parkway runs north-south between MD 32 at the southern end of the study area and terminates at MD 175 just after merging with Brock Bridge Road. The roadway is two lanes in each direction and is equipped with left turn only lanes at most driveways or intersections. There are sidewalks on both sides of the road for its entire length. Some intersections and driveways are also equipped with right turn only lanes. Major intersections are signalized and are equipped with crosswalks and pedestrian signals. There is direct access to adjacent land uses. There is no existing transit service. The roadway provides direct connections to major east-west roadways MD 32 and MD 175.

4.7.4 **Wigley Road/Forest Avenue** – Wigley Road/Forest Avenue are a combined north-south roadway that runs between MD 175 and MD 103, just south of MD 100. The roadway is one lane in each direction and does not have left or right turn only lanes. There are no signalized intersections and there is no sidewalk infrastructure. There is direct access to adjacent land uses and there is no existing transit service. The roadway provides connections to major east-west roadways MD 175 and MD 100 (via MD 103) and east-west minor arterial Montevideo Road.

4.7.5 **Race Road –** Race Road runs north south between MD 175 in the south and Hanover Road in the north. The roadway is one lane in each direction with very limited right and left turn only lanes. There are no signalized intersections and there are only small sections of sidewalk along the roadway length. There is direct access to adjacent land

uses and there is no existing transit service. The roadway provides connections to major east-west roadways MD 175 and MD 100 and minor east-west arterials MD 103 and Hanover Road.

4.7.6 Coca Cola Drive/Hi Tec Drive – Coca Cola Drive and Hi Tec Drive are a combined north-south roadway that runs between MD 100 and Hanover Road. The roadway is two lanes in each direction between MD 100 and the intersection with Park Circle Drive, with no sidewalk infrastructure. This section is equipped with left and right turn only lanes. The intersection with Park Circle is signal protected and is equipped with crosswalks and pedestrian signals.

North of Park Circle the roadway cross section is one lane in each direction with a center bi-directional turn lane. This section has sidewalks along its entire length, with most of the length with sidewalks on both sides of the street. There is direct access to adjacent land uses and there is no existing transit service. The roadway provides connections to major east-west roadway MD 100 and east-west minor arterial Hanover Road.

Table 3 – Segment 3 Roadway and Pedestrian Access Characteristics Summary

Roadway	Cross Section	Pedestrian Accommodations	Adjacent Neighborhood Access	Access to Bus Stops	East-West Roadway Connections
MD 32 (east-west)	Three lanes in each direction – limited access highway	No sidewalk infrastructure	No direct access to adjacent neighborhoods	No bus stops	Continues east into Segment 4
MD 175 (east-west)	Mixture of one, two, and three lanes in each direction	Intermittent sidewalk infrastructure	Direct access to adjacent residential and commercial properties	No bus stops	Continues east into Segment 4
MD 100 (east-west)	Combination of two and three lane in each direction – limited access highway	No sidewalk infrastructure	No direct access to adjacent neighborhoods	No bus stops	Continues east into Segment 4

Table 3 – Segment 3 Roadway and Pedestrian Access Characteristics Summary (cont.)

Roadway	Cross Section	Pedestrian Accommodations	Adjacent Neighborhood Access	Access to Bus Stops	East-West Roadway Connections
US 1 (north-south)	Two lanes in each direction	Intermittent sidewalk infrastructure	Direct access to adjacent residential and commercial properties	Some stops accessible from existing sidewalk network and with ADA compliant pads. Others not connected nor ADA compliant	Connects to major roadways MD 32, MD 175 and MD 100, and minor arterials Guildford Road, Montevideo Road, MD 103 and Loudon Avenue/Hanover Road
Baltimore Washington Parkway (north-south)	Combination of two and three lanes in each direction – limited access highway	No sidewalk infrastructure	No direct access to adjacent neighborhoods	No bus stops	Connects with MD 32, MD 175, MD 100 and Interstate 195
East-West Minor Arterials					
Guilford Road	One lane between US 1 and Dorsey Run Road and two lanes in each direction between Dorsey Run Road and National Business Parkway	Intermittent sidewalk infrastructure. Major intersections are signal protected with pedestrian signals.	Direct access to adjacent land uses	No bus stops	Connect to MD 32 at National Business Parkway interchange
Montevideo Road	One lane in each direction	Intermittent sidewalk infrastructure, no signalized intersections	Direct access to adjacent land uses	No bus stops	No direct connections; connections via north-south roadways
MD 103	One lane in each direction	Intermittent sidewalk infrastructure. One signalized intersection; no pedestrian signals	Direct access to adjacent land uses	No bus stops	No direct connections; connections via north-south roadways
Loudon Avenue/ Hanover Road	One lane in each direction	Western end – sidewalk on north side; farther east no sidewalks	Direct access to adjacent land uses	No bus stops	No direct connections; connections via north-south roadways
Dorsey Run Road	One lane in each direction	Sidewalks on both sides of street north of MD 175 and sidewalk on one side of street at southern end. Signalized intersections at MD 32 and MD 175 but no pedestrian signals	Direct access to adjacent land uses	No bus stops	Direct connections to MD 32 and MD 175, and minor arterials MD 103, Montevideo Road, and Guilford Road

Table 3 – Segment 3 Roadway and Pedestrian Access Characteristics Summary (cont.)

Roadway	Cross Section	Pedestrian Accommodations	Adjacent Neighborhood Access	Access to Bus Stops	East-West Roadway Connections
North-South Minor Arterials					
Brock Bridge Road	One lane in each direction	No sidewalks, no signalized intersections	Direct access to adjacent land uses	No bus stops	Direct connections to MD 32 and MD 175
National Business Parkway	Two lanes in each direction	Sidewalks on both sides of street for entire length. Major intersections signalized with crosswalks and pedestrian signals	Direct access to adjacent land uses	No bus stops	Direct connections to MD 32 and MD 175
Wigley Road/Forest Avenue	One lane in each direction	No sidewalk infrastructure, no signalized intersections	Direct access to adjacent land uses	No bus stops	Direct connections to MD 32 and MD 175
Race Road	One lane in each direction	One small section of sidewalk only. No signalized intersections	Direct access to adjacent land uses	No bus stops	Direct connections to MD 175 and MD 100 and minor east-west arterial MD 103
Coca Cola Drive/Hi Tec Drive	Two lanes in each direction between MD 100 and Park Circle Drive. One lane in each direction north of Park Circle Drive	No sidewalk infrastructure south of Park Circle; sidewalks on both sides of street north of Park Circle. Park Circle intersection signal protected with pedestrian signals	Direct access to adjacent land uses	No bus stops	Direct connections to MD 100 and minor east-west arterial Hanover Road

5. Segment 4 – Baltimore-Washington Parkway to Arundel Mills/BWI Marshall Airport

There are three primary east-west roadways in this corridor segment: MD 32, MD 175, and MD 100, each continuing east from Segment 3. There is also one major north-south roadway, MD 170. In addition, there are seven minor arterials, generally north/south in alignment. Each roadway is summarized below and shown in Figure 3.

5.1 Maryland 32 (east-west) – Maryland 32 in this segment continues as a limited access highway with no direct access to adjacent neighborhoods and no pedestrian infrastructure. In this segment, MD 32 intersects with major roadways MD 170 and MD 175.

5.2 MD 175 (east-west) – MD 175 Segment 4 roadway and pedestrian access characteristics are comparable to those at the eastern end of Segment 3, specifically two lanes in each direction, some sidewalk infrastructure, and direct access to adjacent land uses, including commercial driveways entering directly onto the roadway. MD 175 in this segment connects to major roadways MD 32 and MD 170 as well as minor arterial MD 713.

5.3 MD 100 (east-west) - MD 100 in this segment continues as a limited access highway with no direct access to adjacent neighborhoods and no pedestrian infrastructure. In this segment, MD 100 has direct connections to MD 713 and MD 170.

5.4 MD 170 (north-south) – Maryland 170 runs the full north-south length of the study corridor from MD 32 in the south to BWI Marshall Airport in the north. Its roadway and pedestrian access characteristics are outlined below.

- *Roadway cross section* – MD 170 has one lane in each direction between MD 32 and a point just south of MD 100, where the cross section changes to two lanes in each direction. Major intersections are signal protected but there are long distances between intersections with no signal protection.

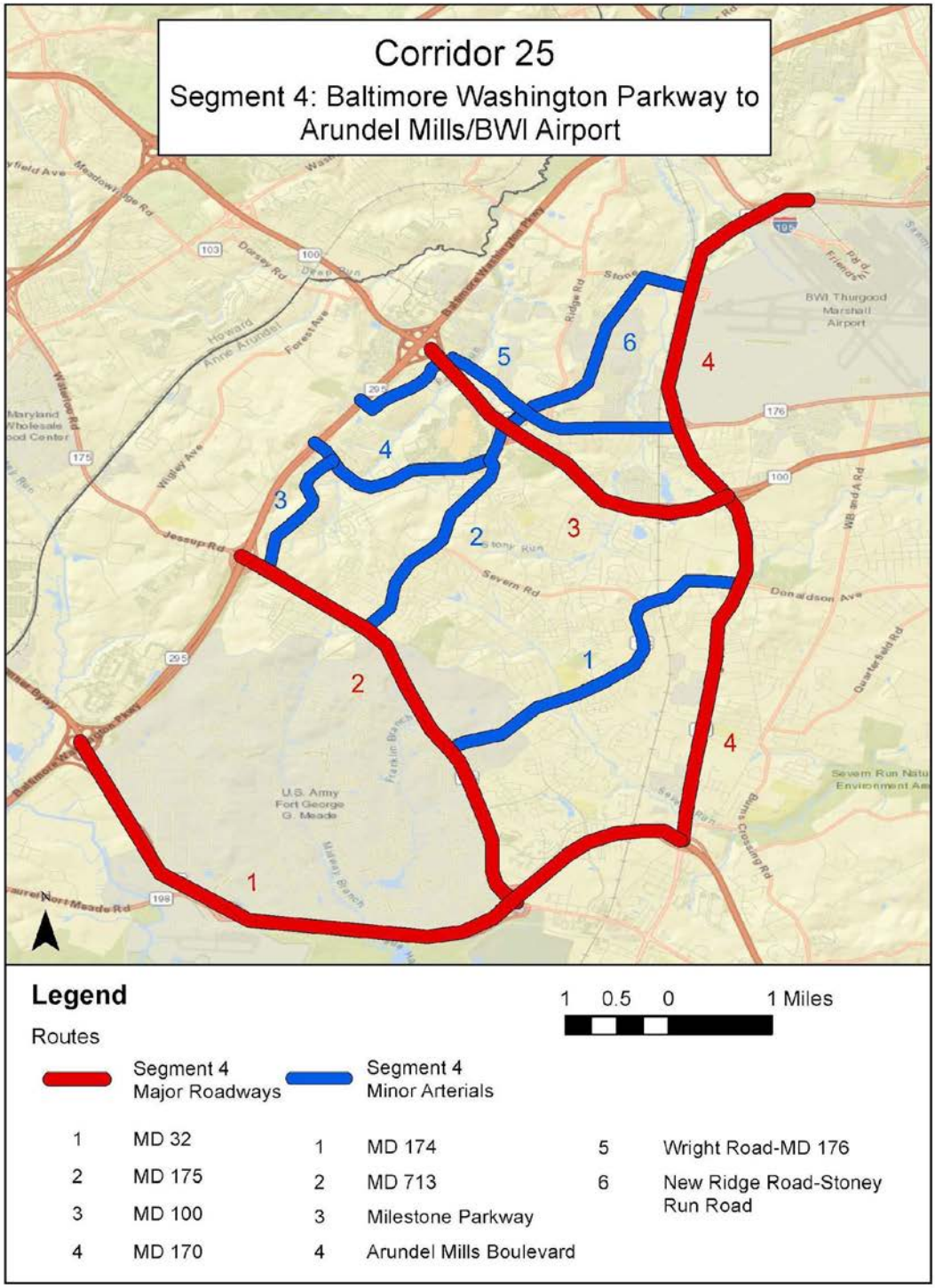
- *Pedestrian accommodations* – There is no sidewalk infrastructure except in very limited locations along the entire length of this roadway section. None of the signal protected intersections have crosswalks or pedestrian signals installed.

- *Access to adjacent neighborhoods* – There is direct access to residences and business along this entire roadway section. Commercial driveways enter directly onto the roadway.

- *Access to existing bus stops* – There are no bus stops located along this length of roadway

Connections to east/west roadways – This section of MD 170 provides direct connections to MD 32 and MD 100 as well as minor arterials MD 174, MD 176 and New Ridge Road/Stoney Run Road.

Figure 3 – Segment 4 Roadways



5.5 Minor Arterials - In addition to the four major roadways in Segment 4 summarized above, there are seven minor arterials that traverse Segment 4 and provide connections between the major roadways. Each of these is summarized below.

5.5.1 MD 174 - MD 174 provides a connection between MD 175, on the east side of Fort Meade, and MD 170. The roadway is one lane in each direction except for a small section at the west end where there are two lanes in each direction. The roadway is equipped with left and right turn only lanes along its entire length. There are three signalized intersections of which one, Pioneer Drive, is equipped with a crosswalk and pedestrian signals. There is intermittent sidewalk infrastructure but the majority of the length of the roadway is without sidewalks. There is direct access to adjacent land uses but there is no transit service. The roadway connects to major roadways MD 175 and MD 170.

5.5.2 MD 713 – MD 713 runs north-south and provides a connection between MD 175 and Arundel Mills Boulevard, and MD 175 and MD 100. The roadway is predominantly one lane in each direction with wider cross sections at each end in the vicinity of the intersections with MD 175 and Arundel Mills Boulevard. The entire length is equipped with right and left turn only lanes. Signalized intersections at MD 175, Teague Road and Arundel Mills Boulevard (at each end of the roadway section) are equipped with crosswalks and pedestrian signals but other signalized intersections along the roadway are not. There is intermittent sidewalk infrastructure but the majority of the roadway is without sidewalks. There is direct access to adjacent land uses but there is no transit service. In addition to connections with MD 175, Arundel Mills Boulevard and MD 100, the roadway also provides access to MD 176.

5.5.3 Milestone Parkway – Milestone Parkway is a parallel north-south roadway to MD 713, connecting MD 175 and Arundel Mills Boulevard. The roadway is two lanes in each direction, with right and left turn only lanes along the full length of the roadway. The signalized intersection with MD 175 is not equipped with crosswalks or pedestrian signals but the signalized intersection at Arundel Mills Boulevard is. There are no other signalized intersections. The majority of the roadway length has sidewalks, in some instances on both sides of the street. There is direct access to adjacent land uses but there is no transit service. There are no additional connections beyond MD 175 and Arundel Mills Boulevard.

5.5.4 Arundel Mills Boulevard – Arundel Mills Boulevard runs between the Baltimore-Washington Parkway and MD 713 and provides direct access to the Arundel Mills Mall and Live Casino. This roadway section is two lanes in each direction, with right and left turn only lanes along the full length of the roadway. There are five signalized intersections, each equipped with crosswalks and pedestrian signals. There are sidewalks on both sides of the roadway for its entire length. There is direct access to adjacent land uses for one portion of the roadway length and in the other portion there

is access at major intersections. There is no transit service. The roadway connects to the Baltimore-Washington Parkway, Milestone Parkway, MD 713, and MD 176.

5.5.5 Wright Road/MD 176 – The combination of Wright Road and MD 176 is an east-west roadway that runs between minor north-south arterial Race Road (located in Segment 3) and MD 170. The roadway is one lane in each direction between Race Road and MD 713, and then transitions to two lanes in each direction between MD 713 and MD 170. The roadway is equipped with left and right turn only lanes in the MD 176 portion of the roadway but not along Wright Road. None of the signal protected intersections is equipped with crosswalks or pedestrian signals. Wright Road has sidewalks on at least one side for its full length but sidewalk infrastructure on MD 176 is intermittent. There is direct access to adjacent land uses for much of the roadway length. There is no transit service. The roadway connects to major north-south roadway MD 170 and minor arterials Race Road and MD 713.

5.5.6 New Ridge Road/Stoney Run Road – New Ridge Road is a north-south extension of MD 713, north of MD 176. The connection between New Ridge Road and MD 170 is via Stoney Run Road. New Ridge Road is two lanes in each direction and Stoney Run Road is one lane in each direction. Neither is equipped with left or right turn only lanes. The intersection of Ridge Road and New Ridge Road is signalized and has crosswalks and pedestrian signals. The intersection of New Ridge Road and Stoney Run Road is also signalized and is equipped with crosswalks but not pedestrian signals. New Ridge Road has sidewalks for most of its length but Stoney Run Road does not have sidewalks. There is direct access to adjacent land uses. There is no transit service. The roadway connects to major roadway MD 170 and minor arterials MD 713 and MD 176.

Table 4 – Segment 4 Roadway and Pedestrian Access Characteristics Summary

Roadway	Cross Section	Pedestrian Accommodations	Adjacent Neighborhood Access	Access to Bus Stops	East-West Roadway Connections
MD 32 (east-west)	Three lanes in each direction – limited access highway	No sidewalk infrastructure	No direct access to adjacent neighborhoods	No bus stops	Connections to MD 170 and MD 175
MD 175 (east-west)	Mixture of one, two, and three lanes in each direction	Intermittent sidewalk infrastructure	Direct access to adjacent residential and commercial properties	No bus stops	Connections to MD 32 and minor arterials MD 713 and 174
MD 100 (east-west)	Combination of two and three lane in each direction	No sidewalk infrastructure	No direct access to adjacent neighborhoods	No bus stops	Connections to MD 170 and minor arterials MD 713 and New Ridge Road
MD 170 (north-south)	Combination of one and two lanes in each direction	Very limited locations of sidewalk infrastructure. Signalized intersections do not have crosswalks or pedestrian signals	Direct access to adjacent land uses	No bus stops	Direct connections to MD 32 and MD 100 and to minor arterials MD 174, MD 176, and New Ridge Road/Stoney Run Road
Minor Arterials					
MD 174	Predominantly one lane in each direction	One of three signalized intersections equipped with crosswalk and pedestrian signals. Intermittent sidewalk infrastructure	Direct access to adjacent land uses	No bus stops	Direct connections to MD 175 and MD 170
MD 713	Predominantly one lane in each direction	Three of five signalized intersections equipped with crosswalk and pedestrian signals. Intermittent sidewalk infrastructure.	Direct access to adjacent land uses	No bus stops	Direct connections to MD 175 and MD 100 and minor arterials MD 176 and Arundel Mills Boulevard

Table 4 – Segment 4 Roadway and Pedestrian Access Characteristics Summary (cont.)

Roadway	Cross Section	Pedestrian Accommodations	Adjacent Neighborhood Access	Access to Bus Stops	East-West Roadway Connections
Milestone Parkway	Two lanes in each direction	Sidewalks along entire length, generally on both sides of street. Signalized intersection at MD 175 not equipped with crosswalk or pedestrian signals. Signalized intersection with Arundel Mills Blvd. equipped with crosswalk and pedestrian signals	Direct access to adjacent neighborhoods.	No bus stops	Connects to MD 175 and Arundel Mills Boulevard
Arundel Mills Boulevard	Two lanes in each direction	Sidewalks along entire length, both sides of street. All signalized intersections equipped with crosswalks and pedestrian signals	Direct access to adjacent land uses in portion of roadway section; other portion access at major intersections	No bus stops	Connects to Baltimore Washington Parkway and minor arterials Milestone Parkway, MD 713 and MD 176
Wright Road/MD 176	One lane in each direction between Race Road and MD 713. Two lanes in each direction between MD 713 and MD 170	Wright Road has sidewalks on one or both sides its entire length. Intermittent sidewalk infrastructure on MD 176. Signalized intersections are not equipped with crosswalks or pedestrian signals	Direct access to adjacent land uses.	No bus stops	Connects to MD 170 and minor arterials Race Road and MD 713
New Ridge Road/Stoney Run Road	New Ridge Road is two lanes in each direction; Stoney Run Road is one lane in each direction	New Ridge Road has sidewalks on both sides of the street for its full length. Stoney Run Road does not have sidewalks. New Ridge Road and Stoney Run Road is signalized and equipped with crosswalks but no pedestrian signals	Direct access to adjacent land uses.	No bus stops	Connects to MD 170 and minor arterial MD 176

Appendix 3 - Commuter and Demographic Analysis

Central Maryland Regional Transit Plan Pilot Corridor Analysis
Corridor #25: BWI Marshall Airport to Columbia Town Center
Review of Relevant Plans and Studies

1. Introduction

The purpose of the commuter and demographic analysis outlined in this technical report is to utilize the analysis findings to identify both potential transit need and transit demand within the BWI to Columbia Town Center study corridor. These analysis results will, in turn, be used as an input into the development of route and service alternatives and the evaluation of these alternatives as final route and service recommendations are developed.

The analysis of each study corridor demographic analysis is outlined below by section. A summary of findings is provided at the end of the document in Section 7.

2. Population Density Forecasts

The first set of data evaluated is forecasted population density within the study area. Since a large majority of people using a transit service will be walking to their stop, population density is an important indicator of the accessibility of transit and thus potential demand. The maps in this section represent a time series that shows anticipated study area forecasted population density in five year increments between 2025 and 2040 based on Baltimore Metropolitan Council population and employment forecasts. Evaluating population density and population density changes through this forecasted time series supports the goals of the overall study, which is to develop short, mid, and long-term route, service, and capital improvement recommendations.

The first map in the series (Figure 1) shows forecasted population density in the near future, in 2025. The highest forecasted population density concentrations, moving from west to east include:

- **Columbia Town Center Vicinity -** this concentration includes Columbia Town Center and neighborhoods to the west and north of Town Center.
- **Central Columbia** – This area is located east of Columbia Town Center, between Broken Land Parkway to the south and MD 108 to the north.
- **Between MD 100 and MD 108** – This area is located between MD 100 and MD 108, west of Interstate 95, at the northern edge of Columbia.
- **US 1, North of MD 175 –** This area is located along US 1, north of MD 175 and located between US 1 and Interstate 95.
- **US 1 and MD 32 Intersection –** This area is located east of US 1 on both the north and south sides of MD 32.
- **Milestone Parkway –** This area is located along Milestone Parkway, just east of the Baltimore-Washington Parkway and between MD 175 to the south and Arundel Mills Boulevard to the north.
- **Maryland 713 at MD 175** – This area is located east of MD 713 in the vicinity of the intersection of MD 713 and MD 175, north of Fort Meade.

- **East of Fort Meade** – This area is located east of Fort Meade and north of MD 175.

The following changes in forecasted population density between analysis years are as follows:

- **2025 (Figure 1) to 2030 (Figure 2) –** There are forecasted increases in population density within Columbia Town Center north of MD 175 in Central Columbia, and east of Fort Meade near the intersection of MD 175 and MD 32.

- **2030 to 2035 (Figure 4) and 2035 to 2040 (Figure 4)** - After 2030, forecasted population density patterns within the study corridor remain in place through 2040.

Figure 1 - Study Area Population Density Forecast – 2025

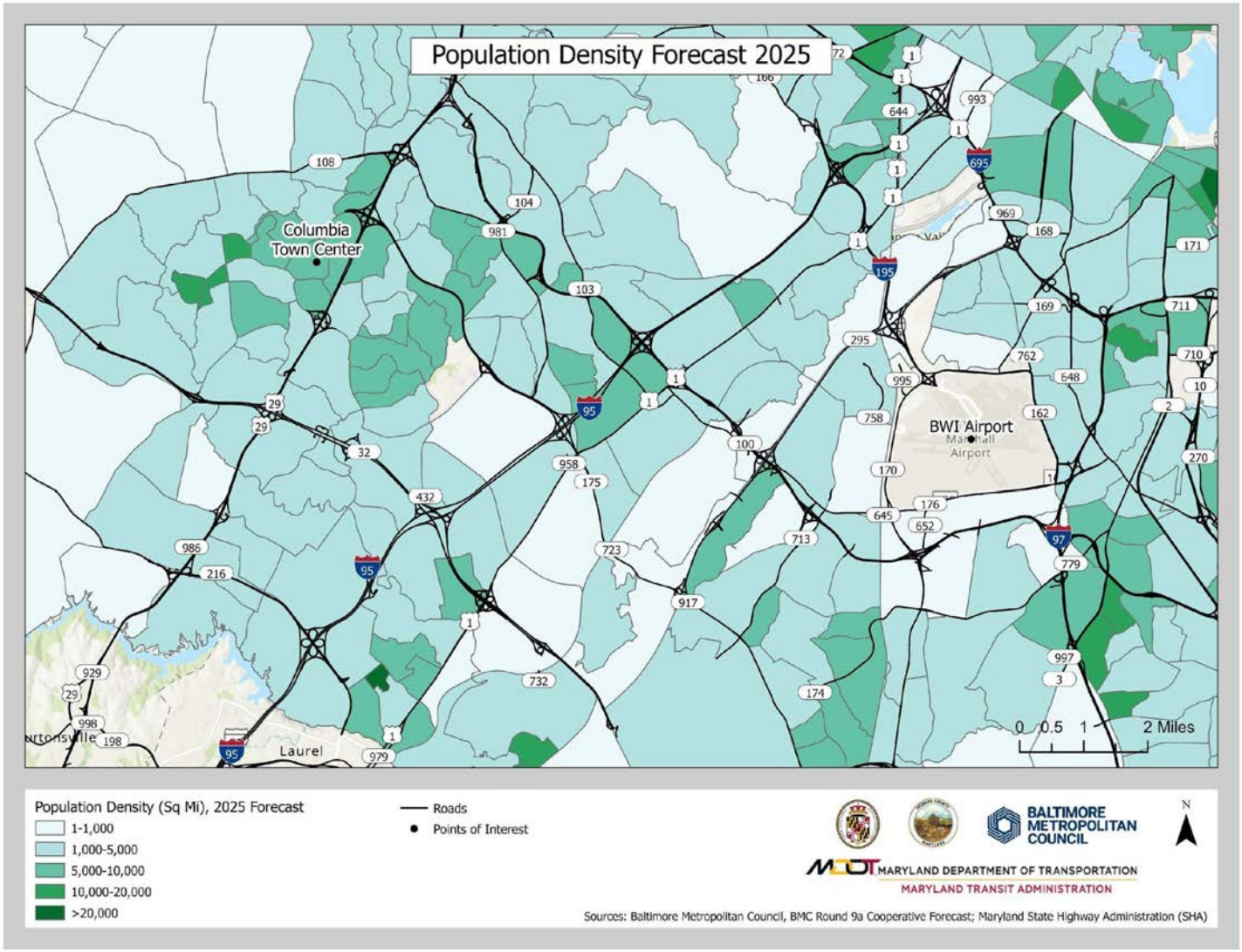


Figure 2 - Study Area Population Density Forecast – 2030

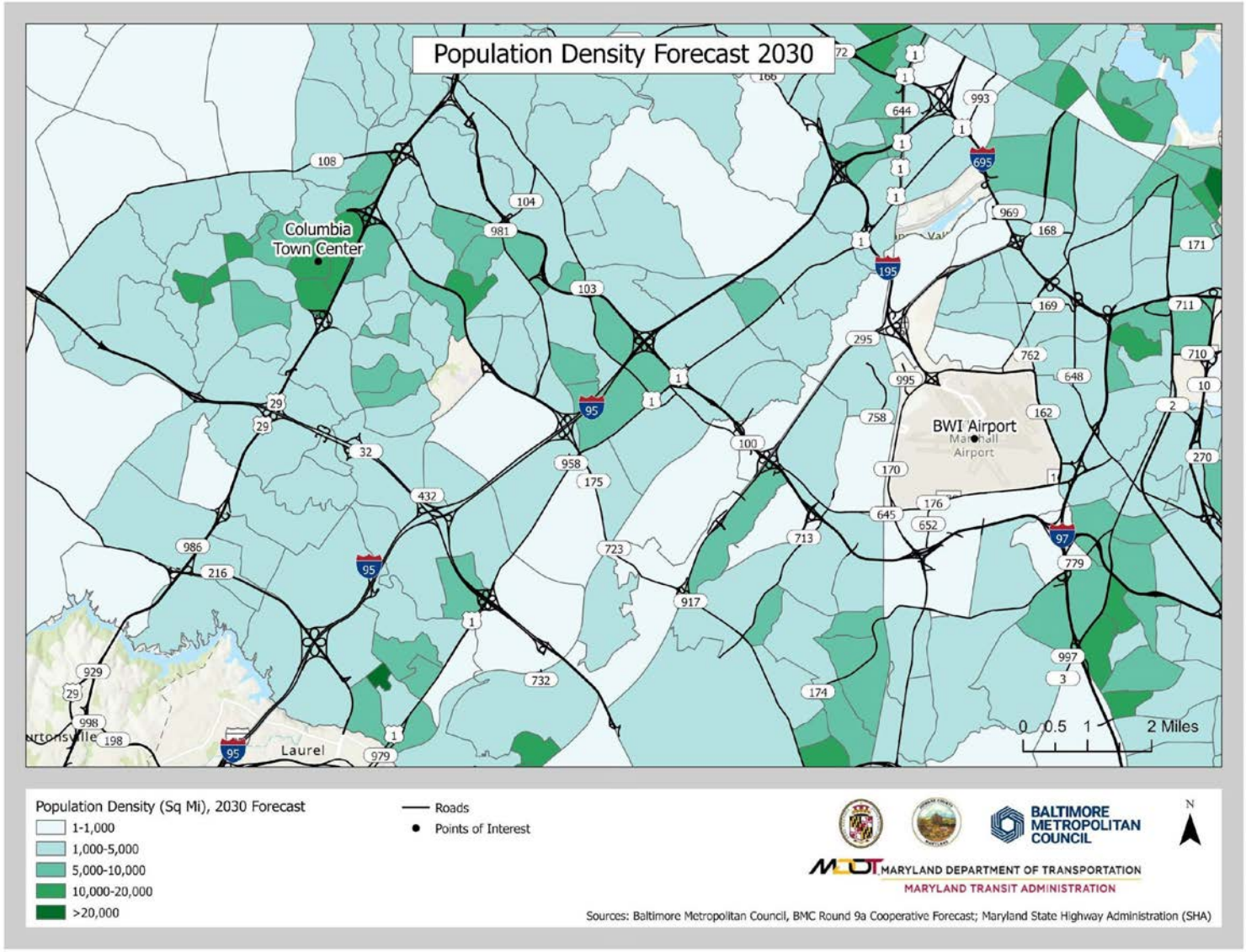


Figure 3 - Study Area Population Density Forecast – 2035

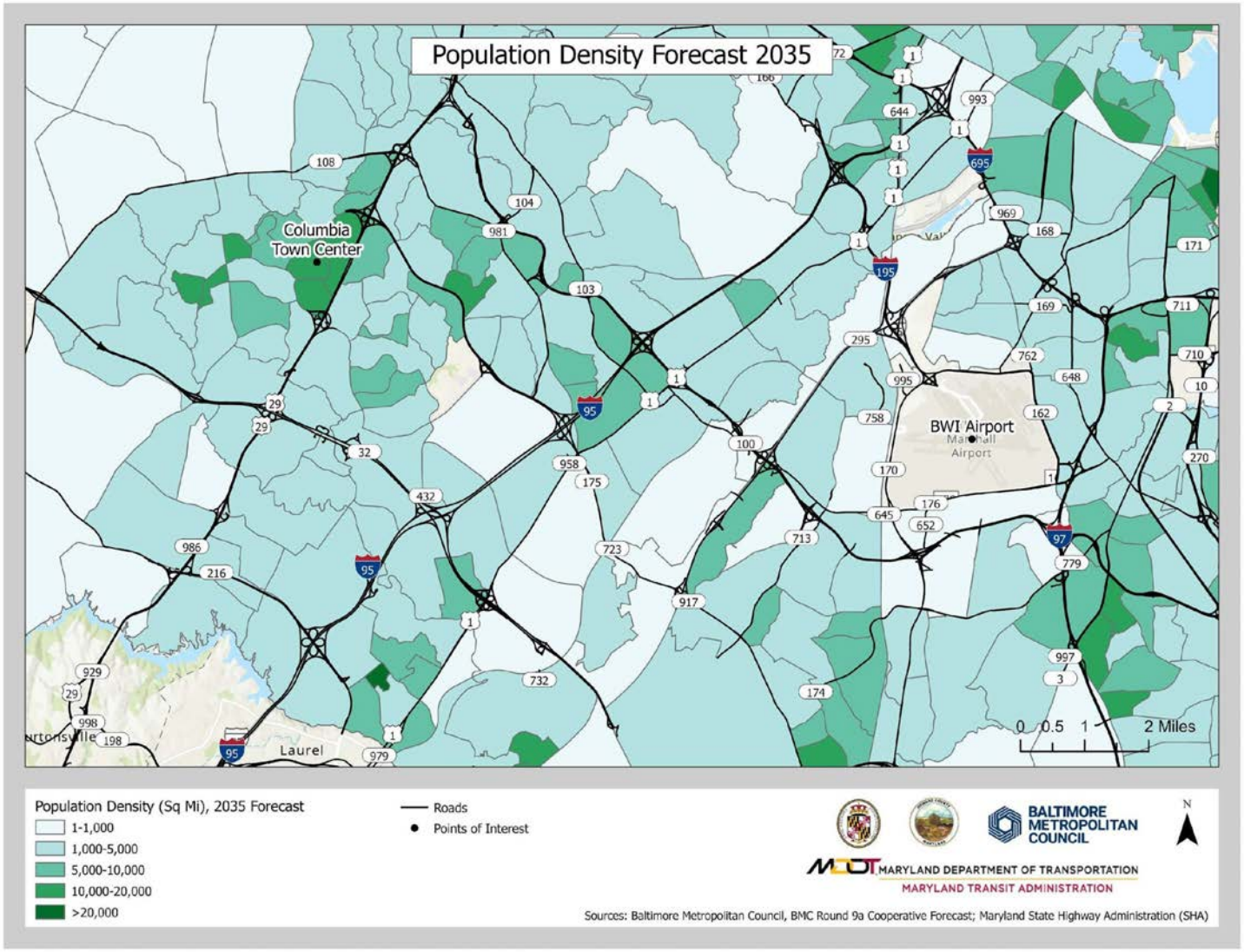
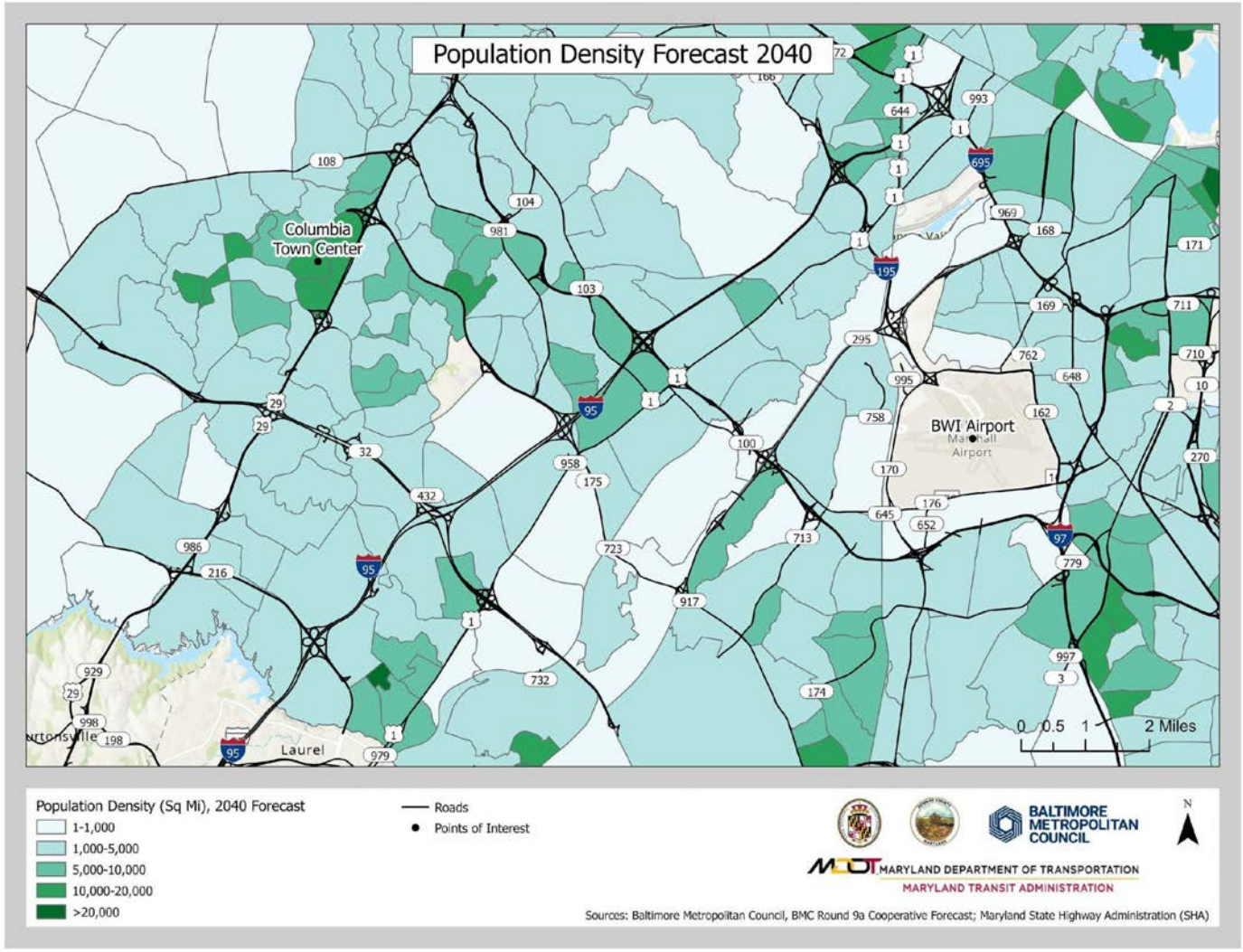


Figure 4 - Study Area Population Density Forecast – 2040



3. Employment Density

The second set of data evaluated to identify transit need and demand is forecasted employment density within the study area. As with the population density maps evaluated in the previous section, the employment density maps represent a time series that shows forecasted employment density between 2025 and 2040 in five year increments based on Baltimore Metropolitan Council population and employment forecasts.

Forecasted 2025 employment density, as presented in Figure 5, shows the highest employment density concentrations located in Columbia Town Center, in the southwest sector of the intersection of MD 175 and Snowden River Parkway in Columbia, Columbia Gateway Center, and Arundel Mills Mall/Live Casino.

Additional concentrations of high employment density are located in the following areas:

- East of US 29, along MD 108 in Columbia.
- North of MD 32 and east of Snowden River Parkway in Columbia.
- Along US 1 in the vicinity of the intersection of US 1 and MD 175, including the Maryland Food Center.
- South of MD 32, between US 1 and Dorsey Run Road, in the vicinity of the Savage MARC train station.
- North and south of MD 100 near the intersection of 100 and the Baltimore-Washington Parkway.
- Along New Ridge Road, west of BWI Marshall Airport.
- North of BWI Marshall Airport in the BWI Business District.

The following changes in forecasted employment density between analysis years are as follows:

- **2025 (Figure 5) to 2030 (Figure 6) -** There are small changes in forecasted employment density between 2025 and 2030, with increases occurring in Columbia Town Center and along US 1 north of MD 32.

- **2030 to 2035 (Figure 7) -** Employment density is forecasted to grow in Columbia Town Center between 2030 and 2035 and also along US 1, south of MD 100, but otherwise employment density patterns remain largely unchanged within the study corridor.

- **2035 to 2040 (Figure 8) -** Employment density is forecasted to change between 2035 and 2040 in the light industrial area in the northwest quadrant of the intersection of MD 100 and the Baltimore-Washington Parkway and also at Fort Meade. Forecasted employment density patterns otherwise stay the same relative to 2035.

Figure 5 - Study Area Employment Density Forecast – 2025

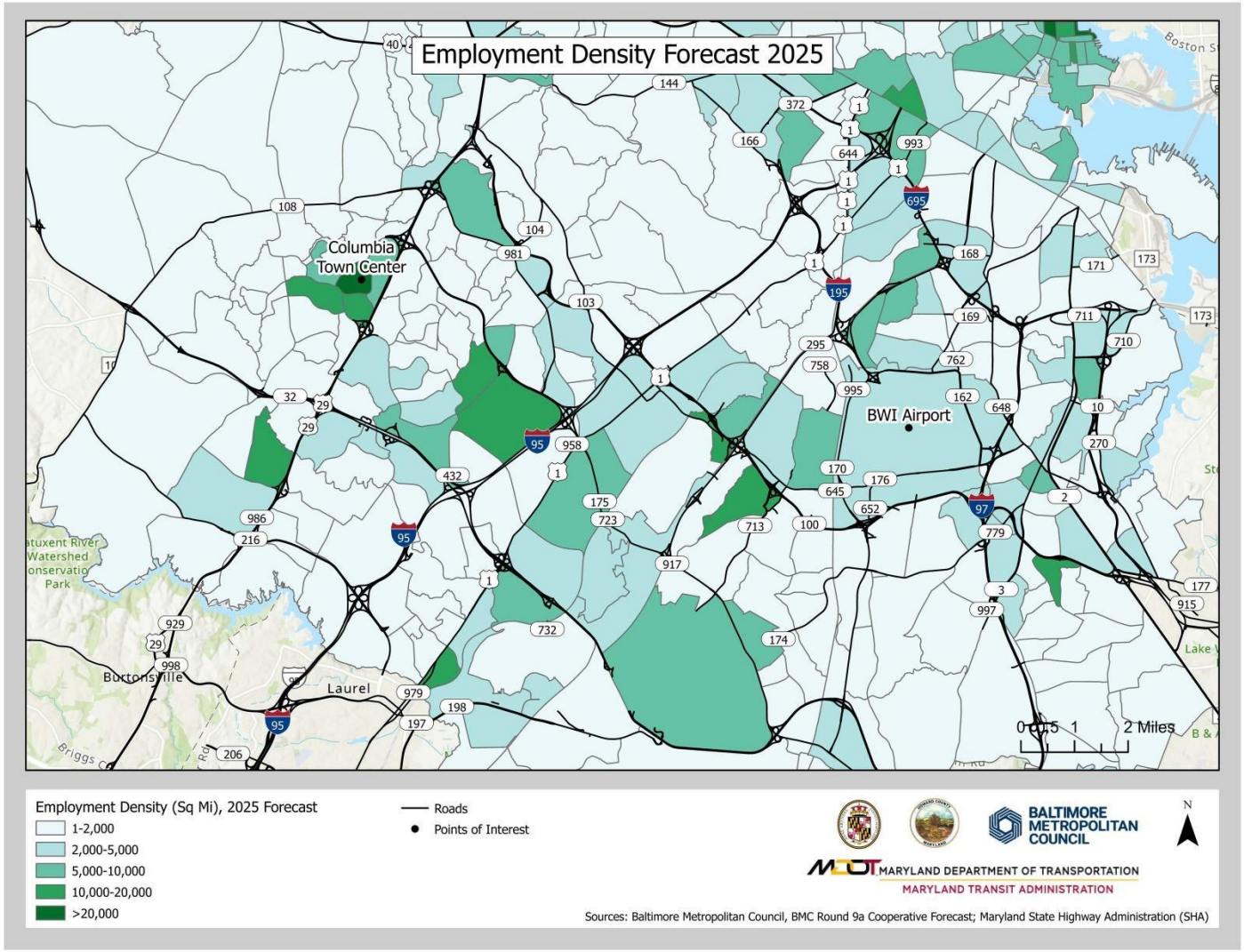


Figure 6 - Study Area Employment Density Forecast – 2030

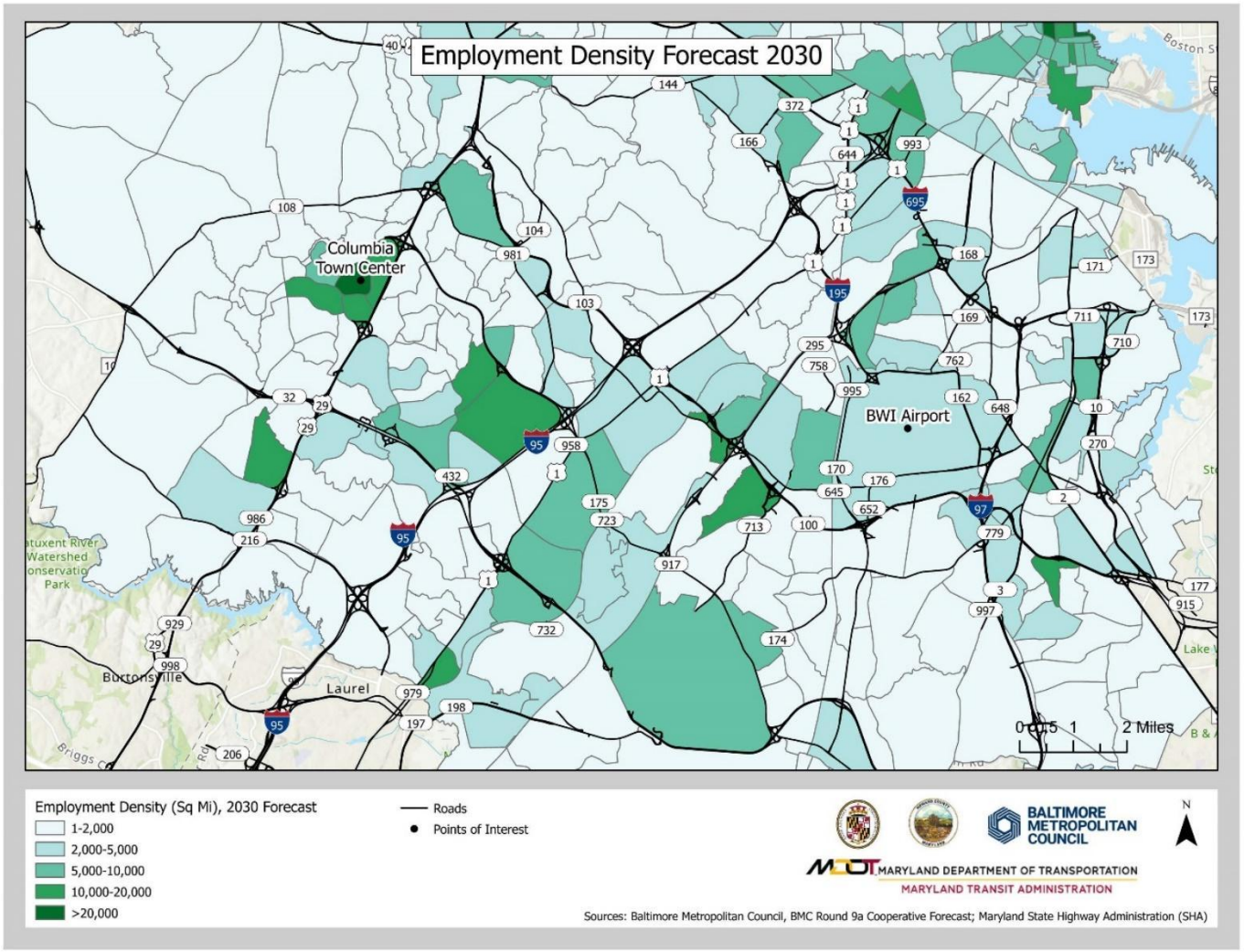


Figure 7 - Study Area Employment Density Forecast – 2035

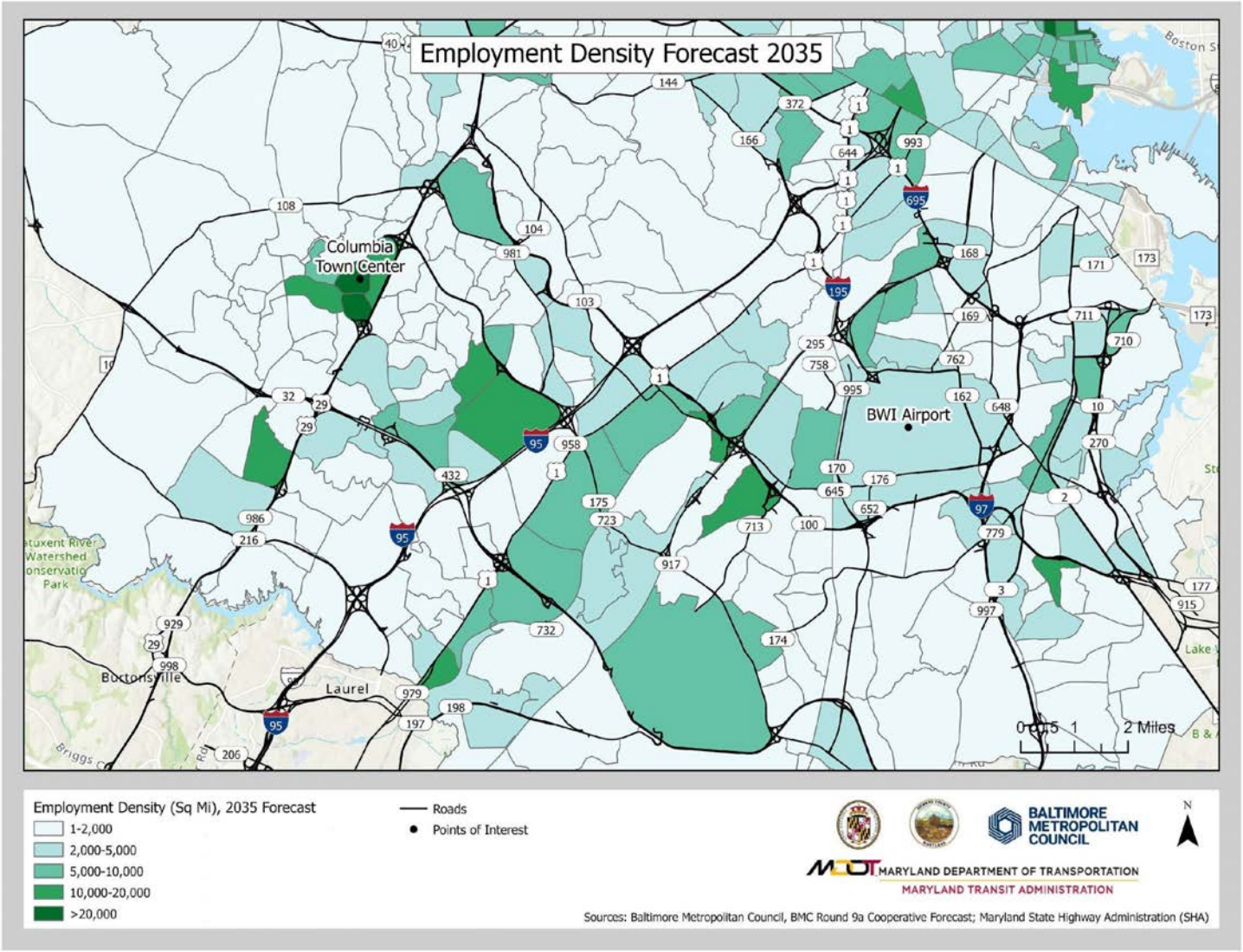
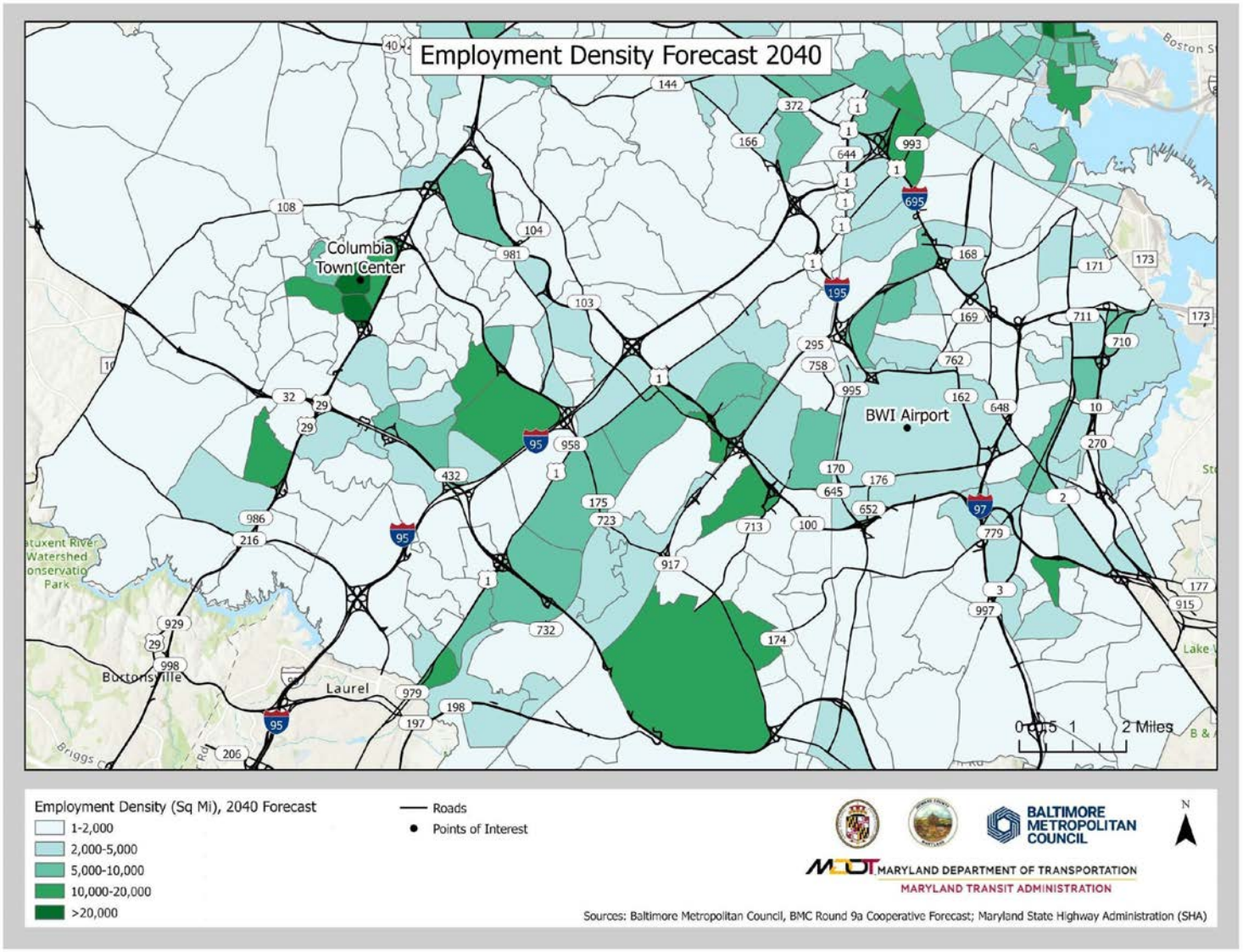


Figure 8 - Study Area Employment Density Forecast – 2040



4. Work Trip Flows to Major Activity Centers

An additional means of assessing transit demand and need is to identify work trip flows to major study area activity centers from origin Transit Analysis Zones (TAZs) within the study area. This analysis provides an understanding of work trip flows to major activity centers as well as the geographic origin of these flows. Both analysis factors will be important inputs into the development of route and service alternatives as well as the evaluation of each alternative for use in the development of final recommendations.

The activity centers chosen for this analysis include Columbia Town Center, Columbia Gateway Center, the Maryland Food Center, Arundel Mills Mall/Live Casino, BWI Marshall Airport, the BWI Business District, and Fort Meade.

Figure 9 shows origin TAZs within the study area for work trips destined to Columbia Town Center. The highest concentration of origins for trips to Columbia Town Center include:

- In the immediate vicinity of Town Center
- From Columbia overall
- Along the US 29 corridor (both north and south of Town Center).

Secondary origin concentrations include the US 1 corridor north of MD 175 and then scattered concentrations farther east, many that correspond to areas of high population density as identified in Figures 1 through 4. These areas farther east include along Milestone Parkway (just east of Baltimore-Washington Parkway and north of MD 175) and areas east of Fort Meade.

Figure 10 shows study area origin TAZs for trips destined to Columbia Gateway Center. The highest concentration of origins include:

- Within Columbia
- The portions of Ellicott City closest to Columbia
- Along US 1 from Laurel to Elkridge.

Additional concentrations of origins are located farther east along MD 175, including Milestone Parkway and residential areas around Arundel Mills, as well as to the northeast of Fort Meade. In general, the data presented in Figure 10 shows a large catchment area for work trips to Columbia Gateway Center.

Figure 9 – Origin Transportation Analysis Zones for Work Trips to Columbia Town Center

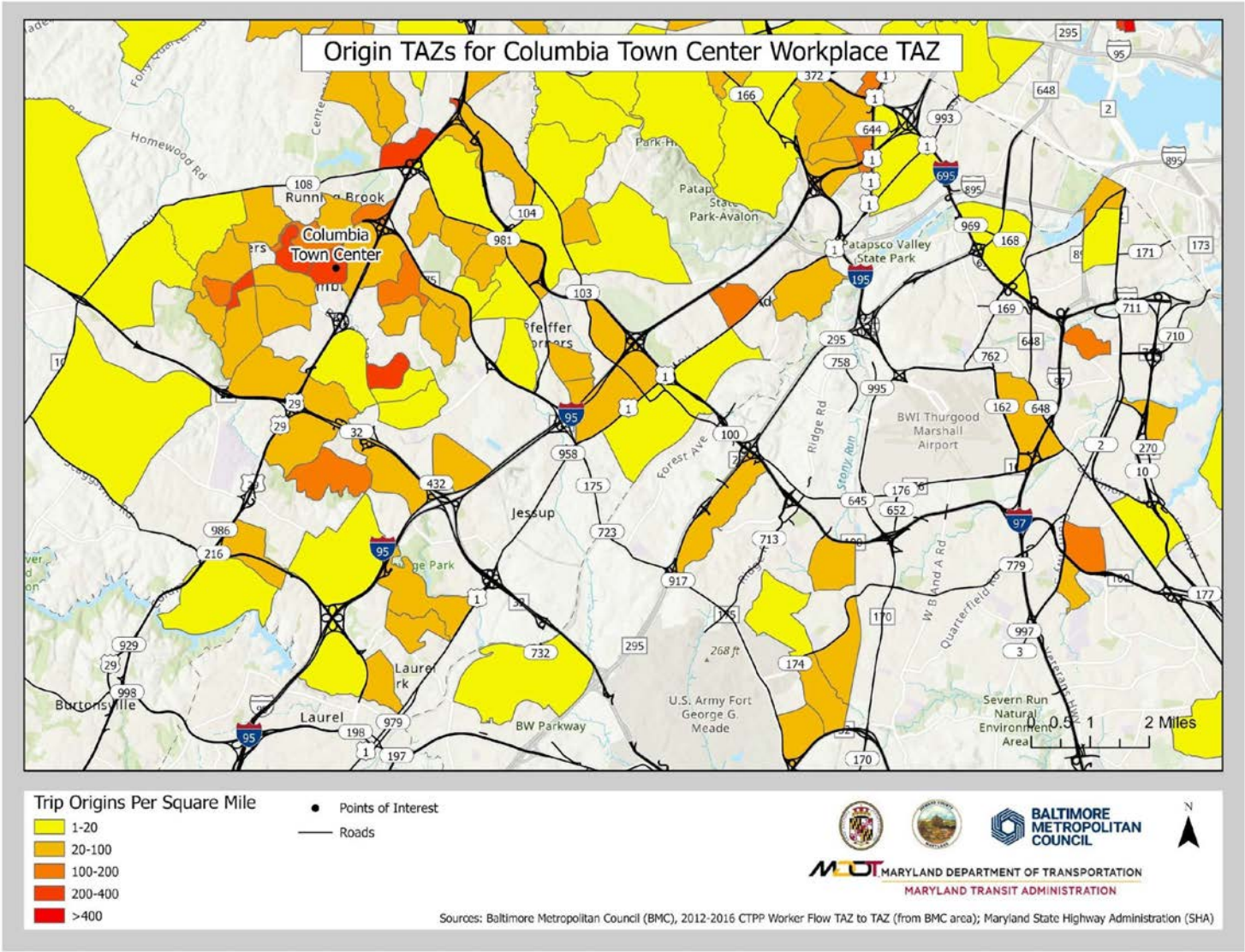


Figure 10 – Origin Transportation Analysis Zones for Work Trips to Columbia Gateway Center

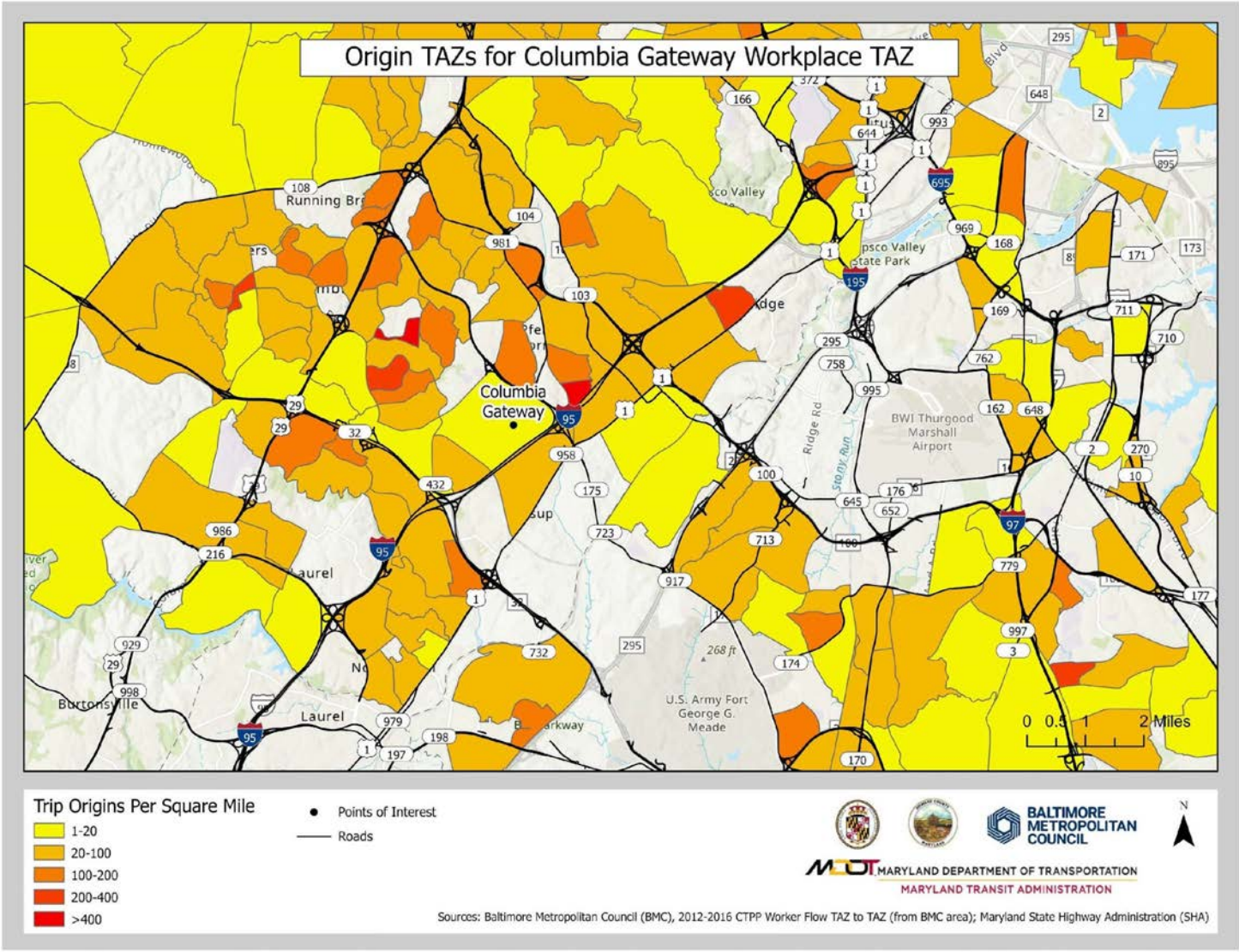


Figure 11 shows origin TAZs within the study area for trips destined to the Maryland Food Center. The Food Center is not as large an activity center as Columbia Town Center or Columbia Gateway Center and therefore there are not as many work trips destined for this destination. The highest concentration of origins to the Food Center are from different locations within Columbia and along the US 1 Corridor north of MD 175. Farther east, there are trips originating from residential areas located along Milestone Parkway (east of the Baltimore-Washington Parkway/north of MD 175) and further east toward Fort Meade.

Figure 12 presents origin TAZs within the study area for work trips destined to the Arundel Mills Mall and Live Casino. The data shows the highest concentrations of origins to the mall and casino are in close proximity, located between MD 175 and MD 100 on a north-south axis and the Baltimore-Washington Parkway and MD 170 on an east-west axis. There are also concentrations of origins farther east in Glen Burnie and Pasadena, outside the study area. Finally, there are origin concentrations in central Columbia, just east of Columbia Town Center.

Figure 11 – Origin Transportation Analysis Zones for Work Trips to the Maryland Food Center

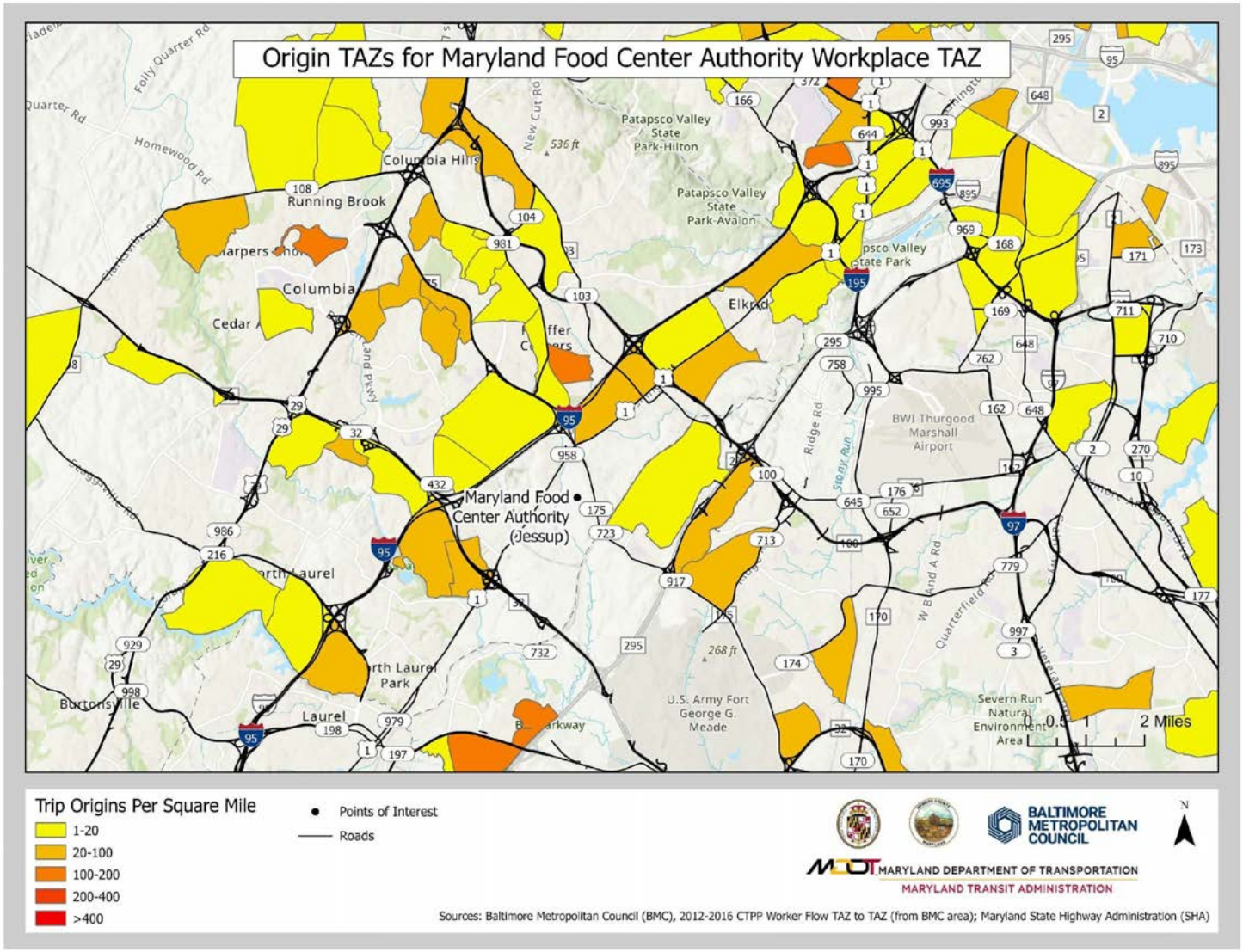


Figure 12 – Origin Transportation Analysis Zones for Work Trips to Arundel Mills

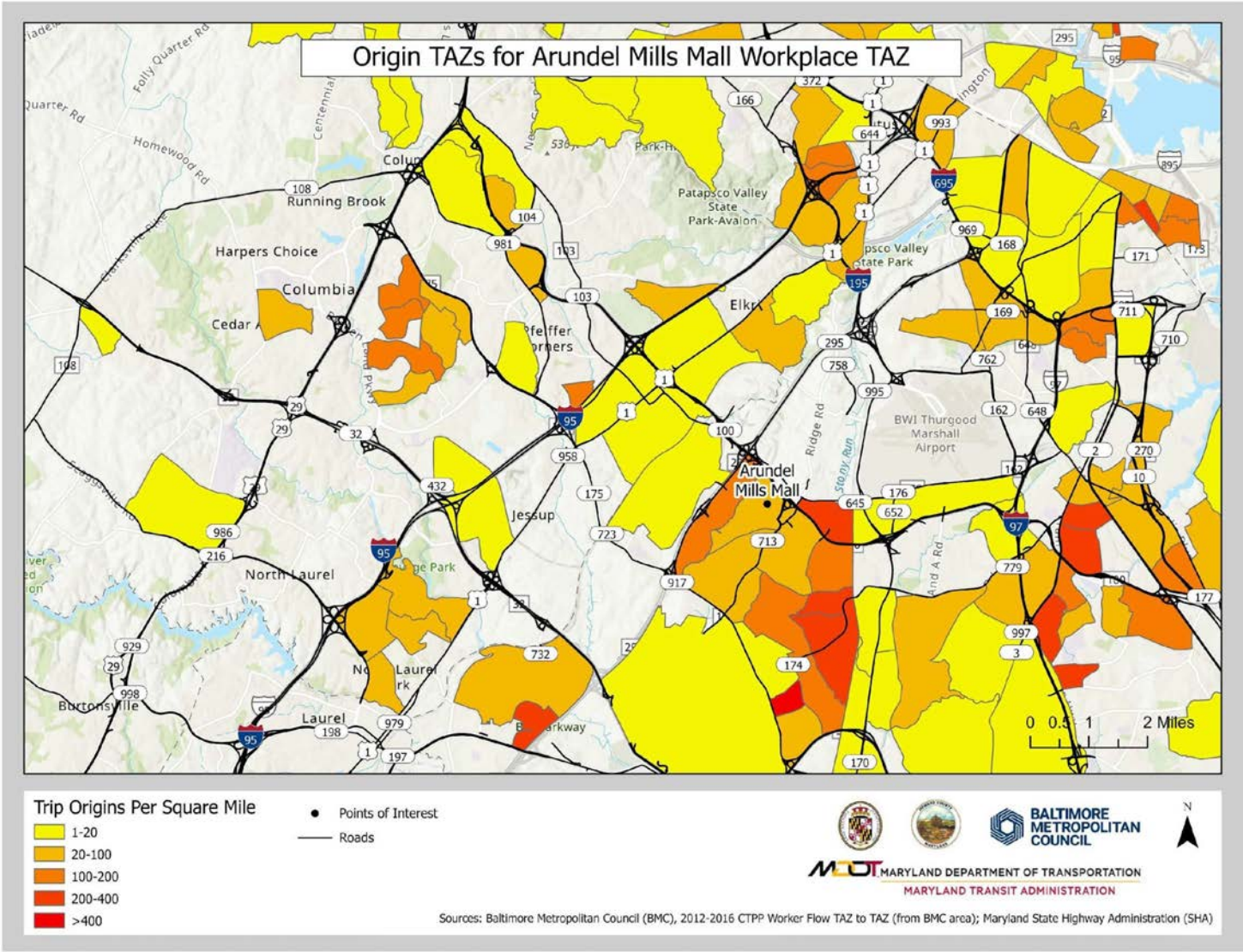


Figure 13 shows origin TAZs within the study area for trips destined to BWI Marshall Airport. The data show the highest concentrations of origins to BWI are located to the east of the airport, outside the study area. Additional origin concentrations include scattered Transit Analysis Zones in Columbia and to the south of the Arundel Mills Mall, east of MD 713.

Figure 14 shows origin TAZs within the study area for trips destined to the BWI Business District. The data show the highest concentrations of origins to the Business District are located along MD 108 with smaller concentrations located in the vicinity of Columbia Town Center throughout Columbia, and along US 1.

Figure 15 shows origin TAZs within the study area for trips destined to Fort Meade. The data show the highest concentration of origins to Fort Meade are located along MD 108 and around Columbia Town Center. Smaller concentrations are distributed throughout Columbia and along US 1.

Figure 13 – Origin Transportation Analysis Zones for Work Trips to BWI Marshall Airport

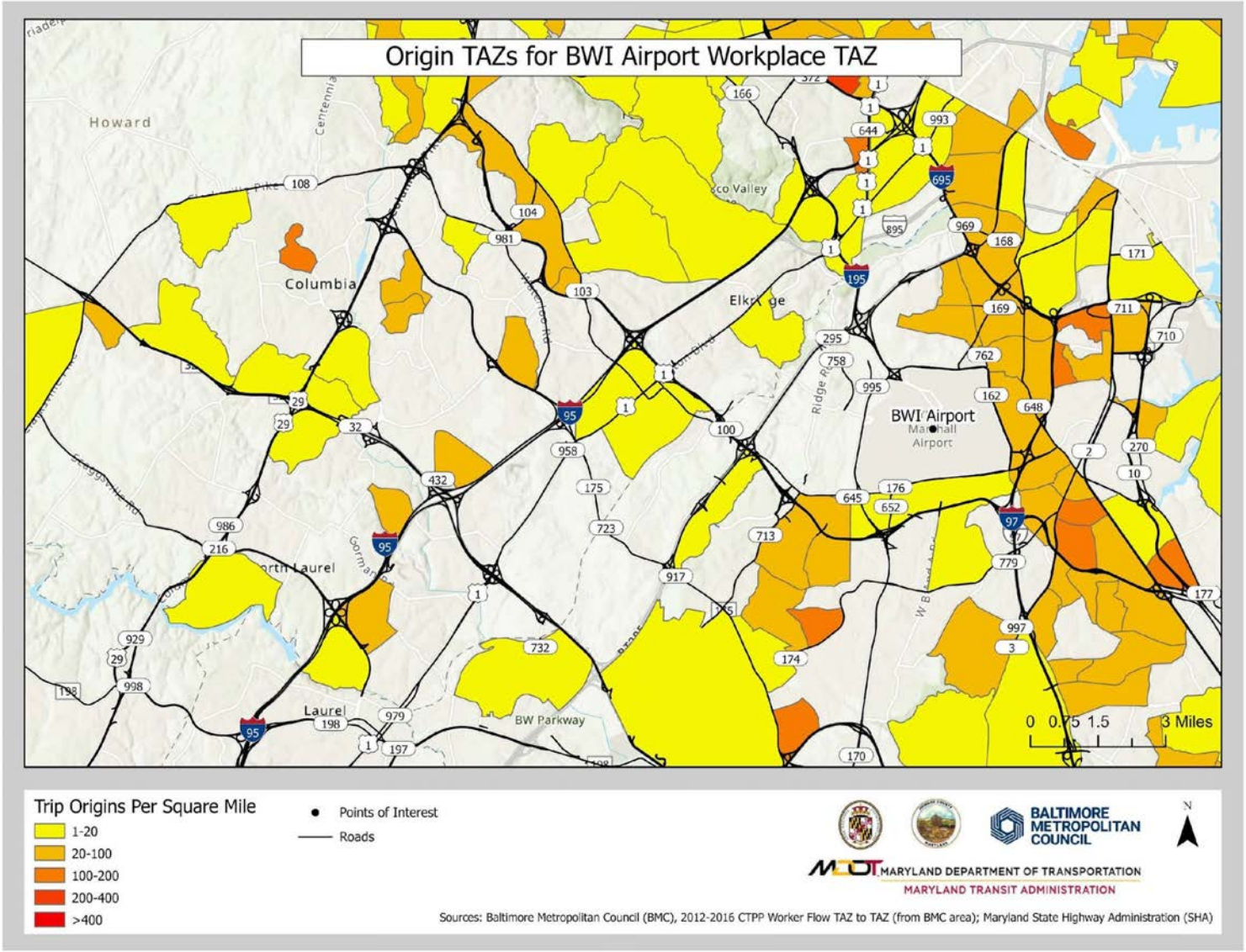


Figure 14 – Origin Transportation Analysis Zones for Work Trips to BWI Business District

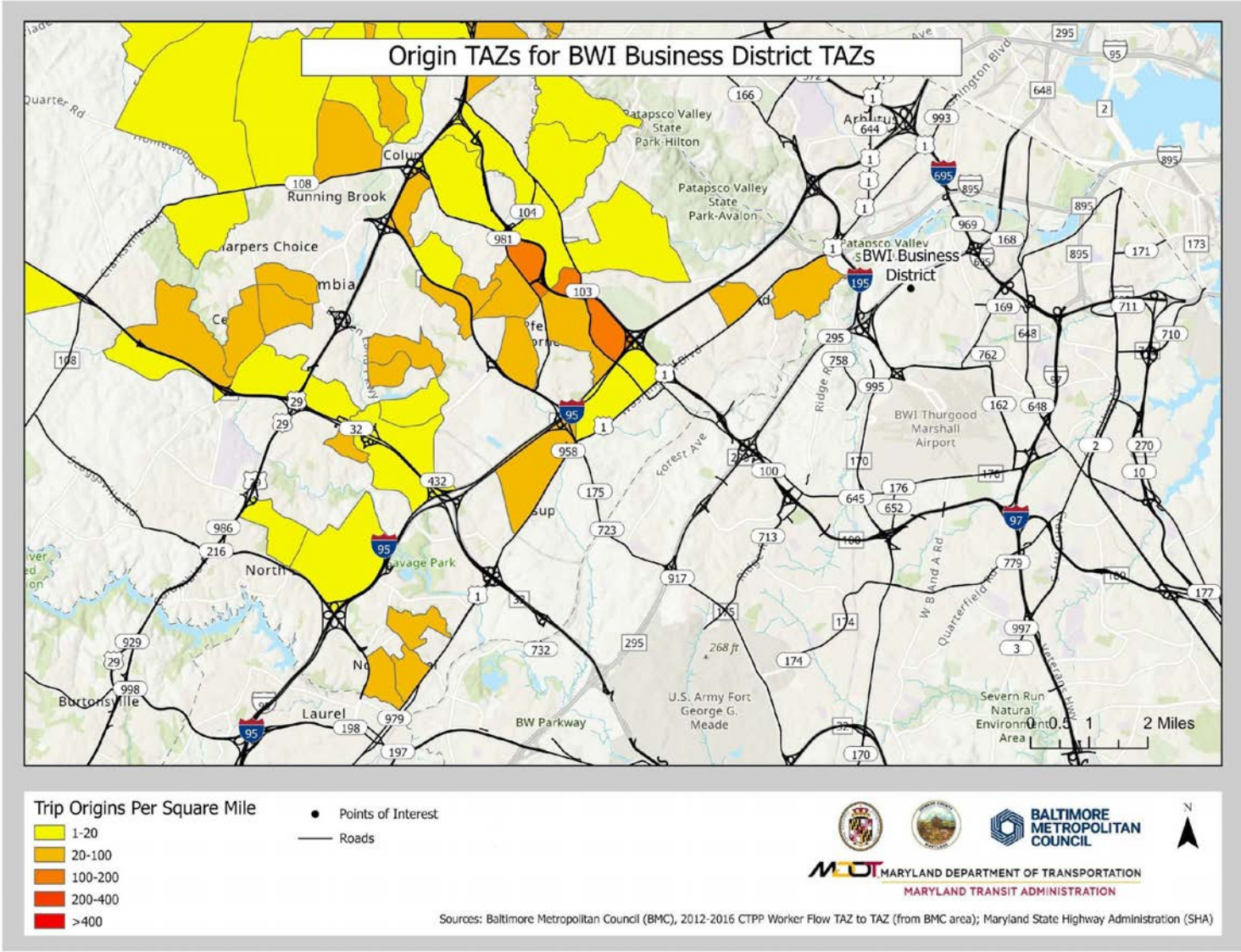
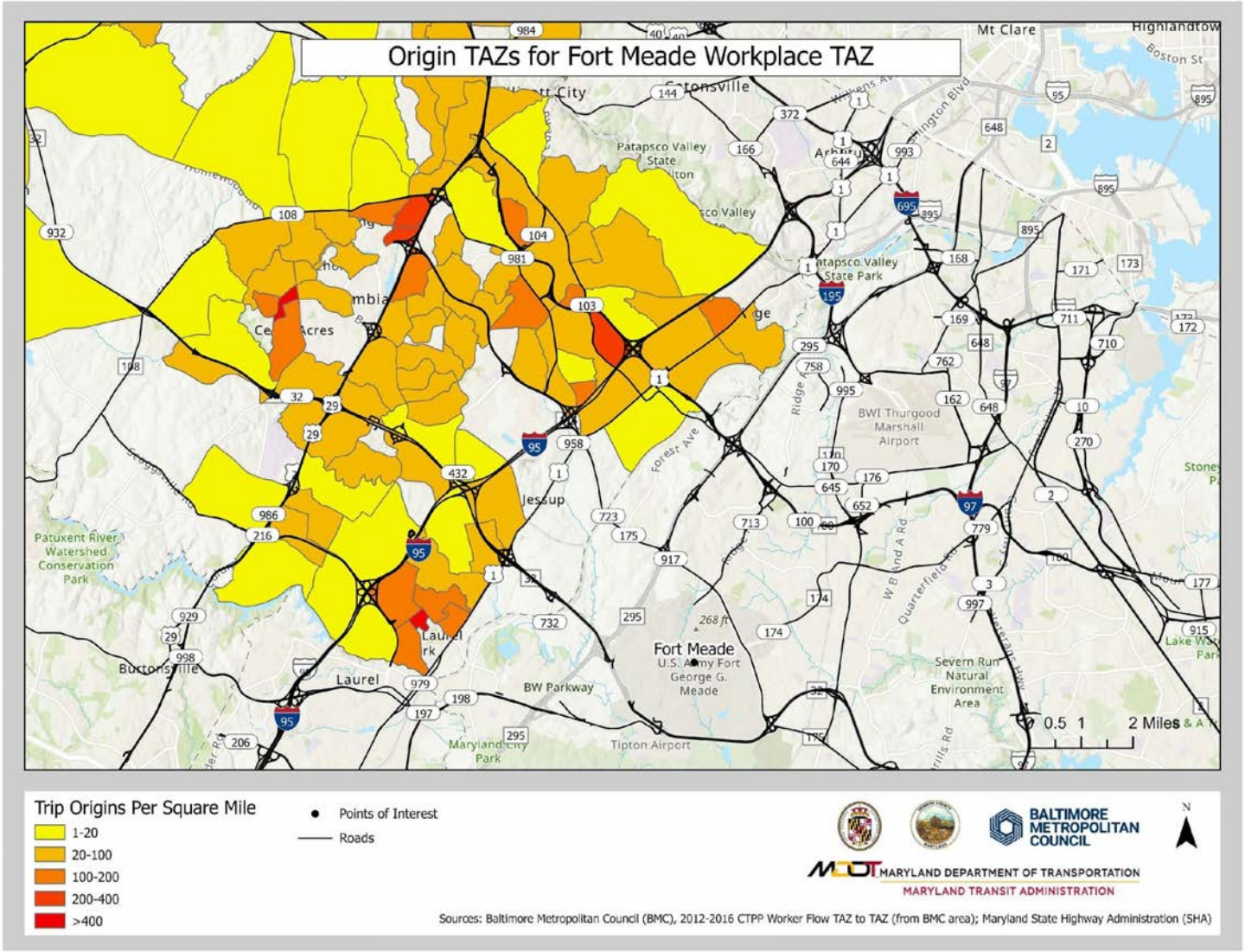


Figure 15 – Origin Transportation Analysis Zones for Work Trips to Fort Meade



5. Transit Need Indicators

The data and maps evaluated in this section focus on identifying potential transit needs through an evaluation of demographic characteristics that point to communities and populations that would have a greater likelihood of relying on transit for their mobility. The demographic characteristics evaluated in this section are based on the U.S. Census and are reported by U.S. Census Block Group. Demographic characteristics to identify potential transit need include percentage of zero car households, percentage of low income households, public transit usage, the density of population over 65, and multi-unit housing density. The results of this Census-based evaluation are outlined below.

Figure 16 presents data on the percentage of zero car households by Census Block Group. Given the overall suburban nature of the study corridor, it is not surprising that the large majority of the study area has a low percentage of households without at least one automobile. The locations with the highest zero car households are scattered throughout Columbia, with two additional smaller concentrations along MD 175 north and east of Fort Meade. There are also concentrations east of BWI Marshall Airport that are outside the study area.

Figure 17 presents data on the percentage of households living below the poverty line, by Census Block Group. The largest concentrations are scattered throughout Columbia, with a smaller concentration along US 1, north of MD 175, and along MD 175, north and east of Fort Meade. There is some degree of correlation between Census Block Groups with high percentages of zero car households and percentages of households living below the poverty line, though not exact.

Figure 16 – Percent of Zero Car Households by Census Block Group

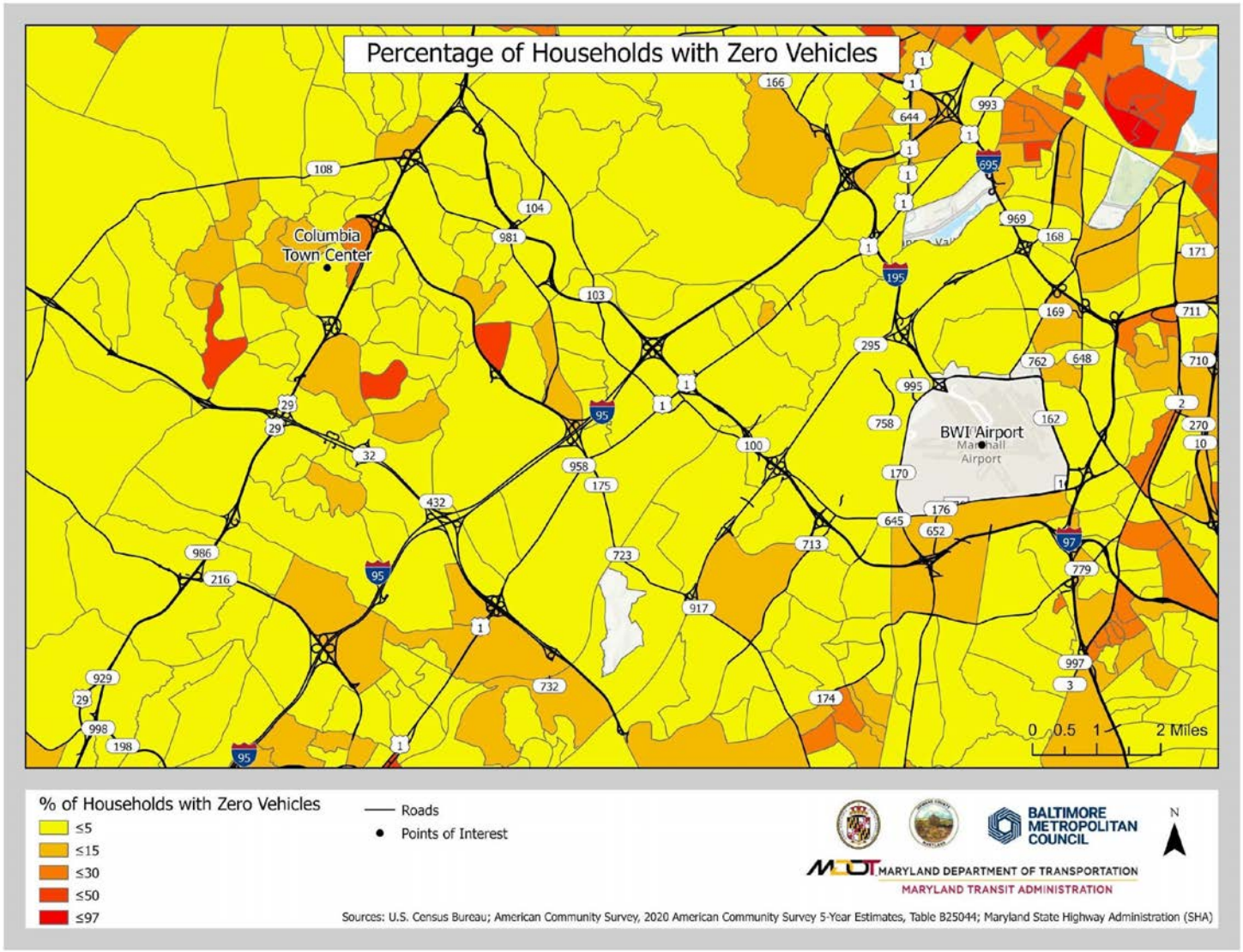


Figure 17 – Percent of Low Income Households by Census Block Group

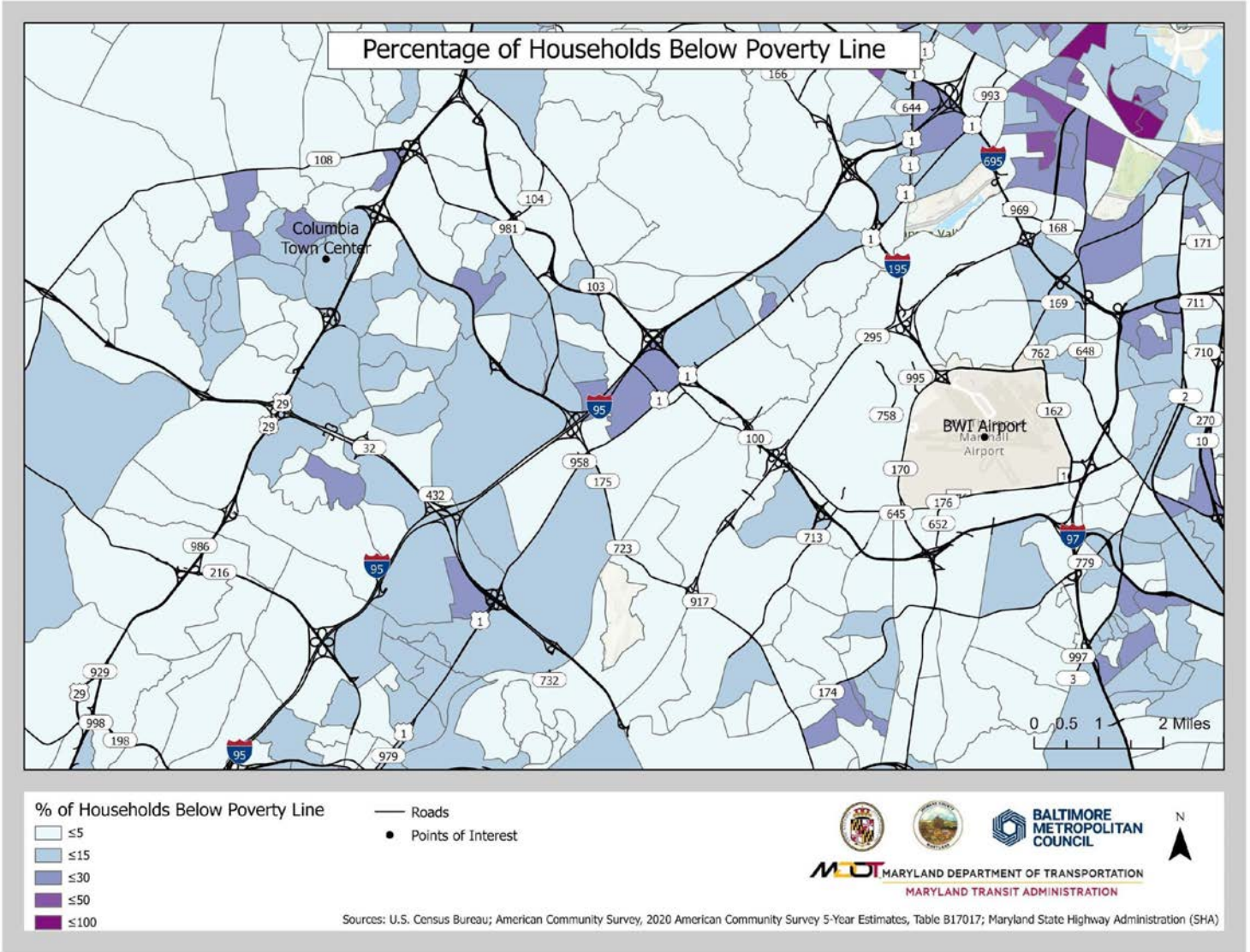


Figure 18 presents data on the percent of commuters who use transit to make their trip to work. The highest concentration of transit users occurs in Columbia, especially in the vicinity of Columbia Town Center. Other portions of the study area with relatively high transit usage include along MD 175 north and east of Fort Meade and also around BWI Marshall Airport. At least one factor in the relatively small use of transit within the study area is the relative lack of transit, both in terms of geographic service coverage and the lack of convenience in terms of long travel times and service frequencies that make transit use for trip makers with mobility choices unattractive.

Figure 19 shows population density of persons over 65 within the study area. The data presented in the map shows a high concentration of older adults in Columbia, with especially high concentrations west of Columbia Town Center. Smaller concentrations of older adults occur along MD 175, north and east of Fort Meade. There are also large concentrations of older adults in Glen Burnie and Pasadena, east of the study area.

The final census-based data set evaluated includes the locations of multi-unit housing, as outlined in Figure 20. Concentrated housing would support transit service by making the service more accessible to riders. The data in the map show the highest concentrations of multi-unit housing in the vicinity of Columbia Town Center and along the US 29 corridor as well as in other scattered locations throughout the remainder of Columbia. A smaller concentration of multi-unit housing can be found in the vicinity of Fort Meade.

Figure 18 – Percent of Commuters Who Use Transit for Work

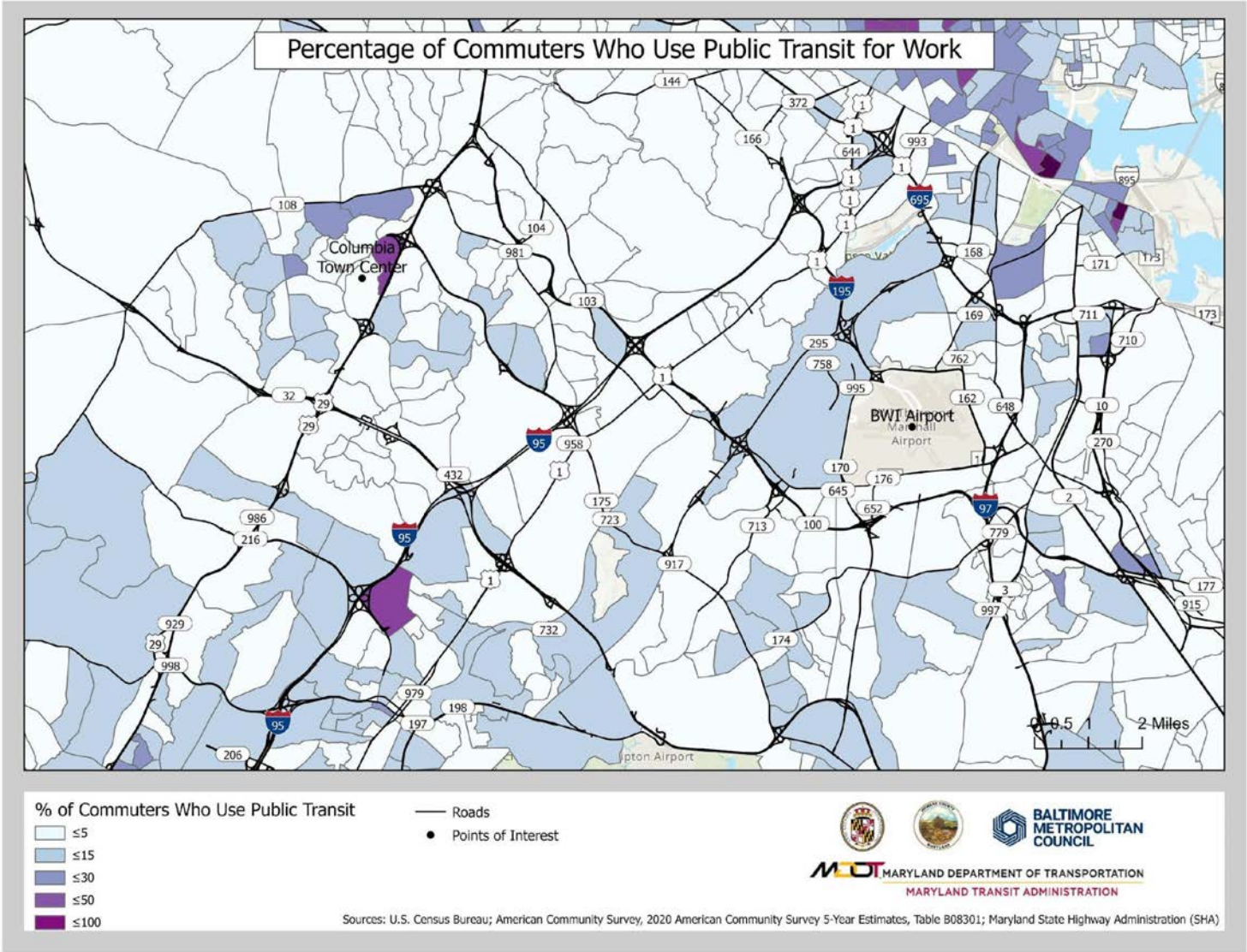


Figure 19 – Over-65 Population Density

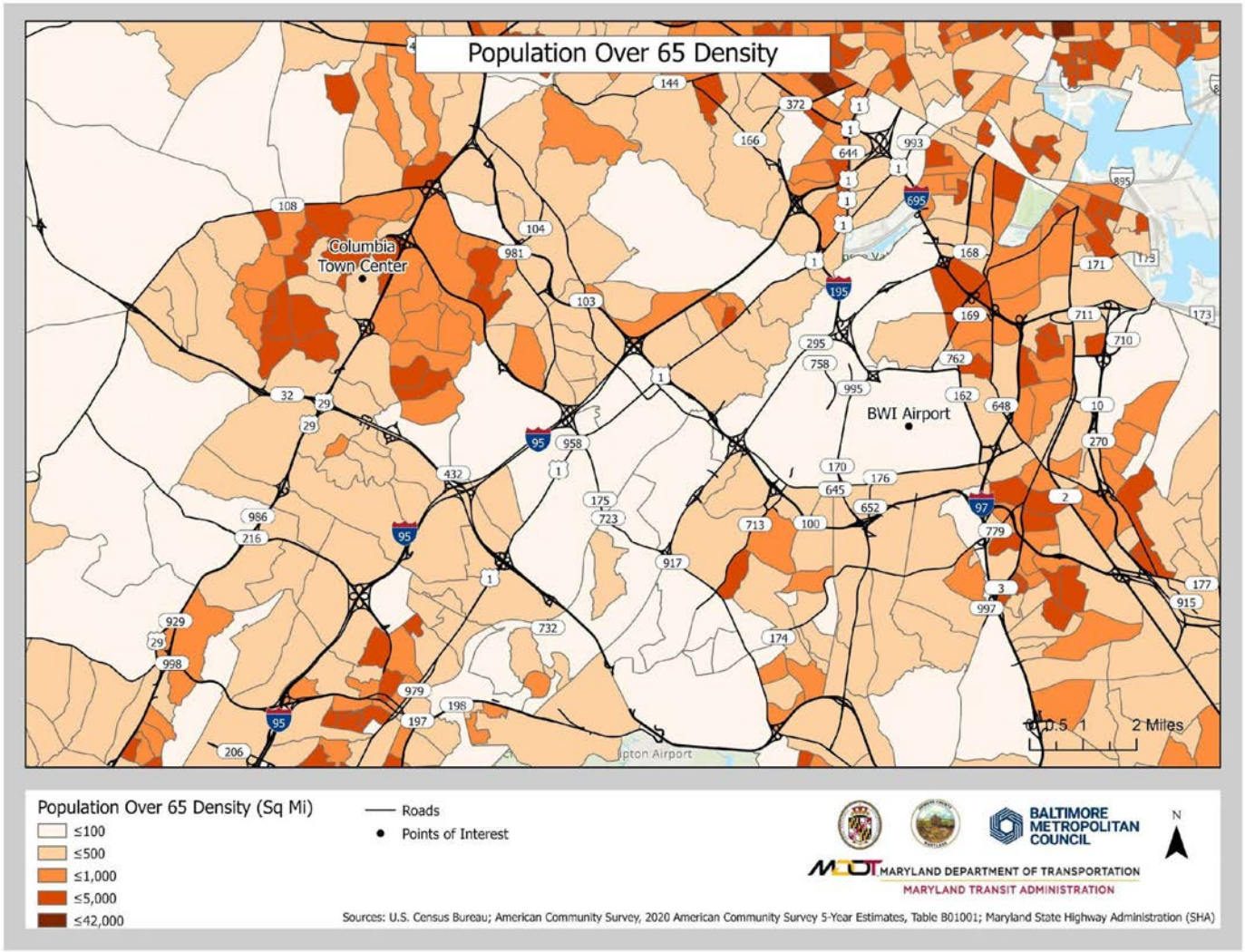
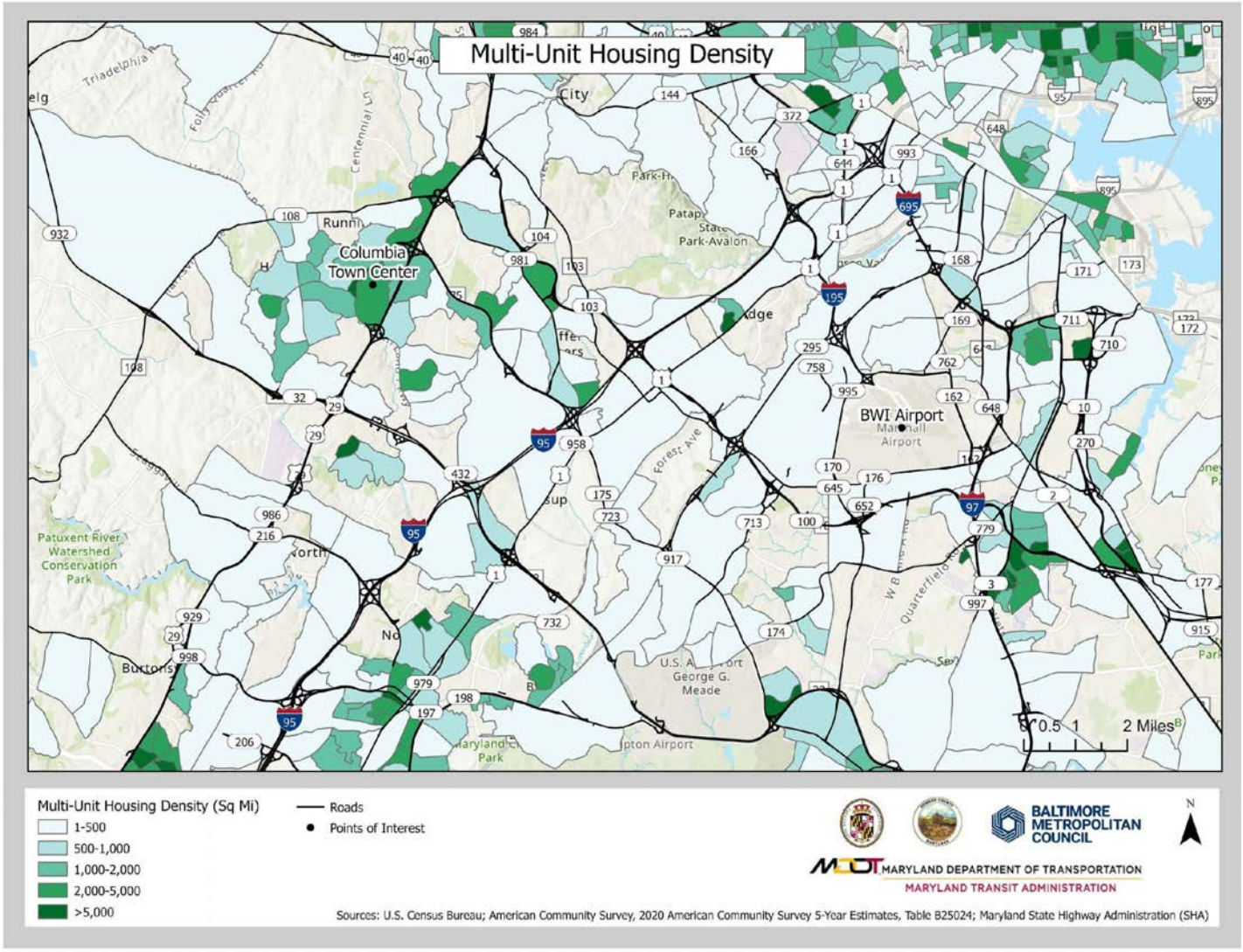


Figure 20 – Multi-Unit Housing Density



6. Indexed Demographic Information

This report section presents two indexes that combine a range of demographic data into a single measure that can be used to identify both potential transit need and potential transit demand.

The first combined measure is a transit propensity metric that incorporates a range of demographic data that highlight locations within the study area with both high potential transit need and demand. The data inputs incorporated into the transit propensity index analysis presented in Figure 21 include census statistics zero car households, households below the poverty level, transit usage for work commute, and populations of adults over 65. The largest concentrations of areas with high transit propensity are located predominantly in Columbia, including in the vicinity of Columbia Town Center. A smaller concentration is located just east of Fort Meade.

The second combined measure to identify potential transit need, presented in Figure 22, is the Baltimore Metropolitan Council (BMC) Vulnerable Populations Index, which incorporates demographic data covering poverty, non-Hispanic, non-White populations, Hispanic populations, limited English proficiency populations, disabled populations, elderly populations, and carless populations. Concentrations of vulnerable populations based on the BMC index include Columbia, along US 1, and north and east of Fort Meade.

Figure 21 – Transit Propensity

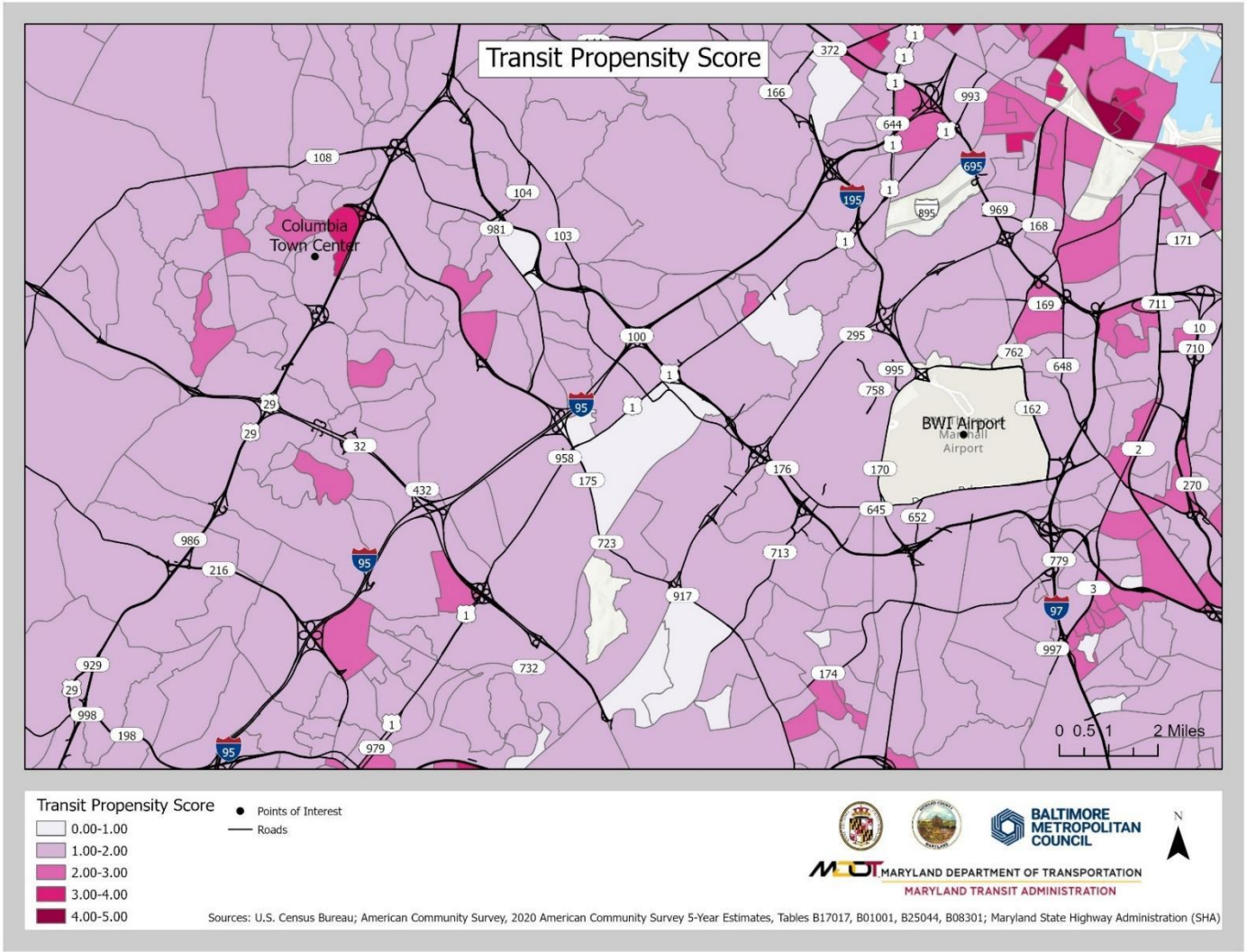
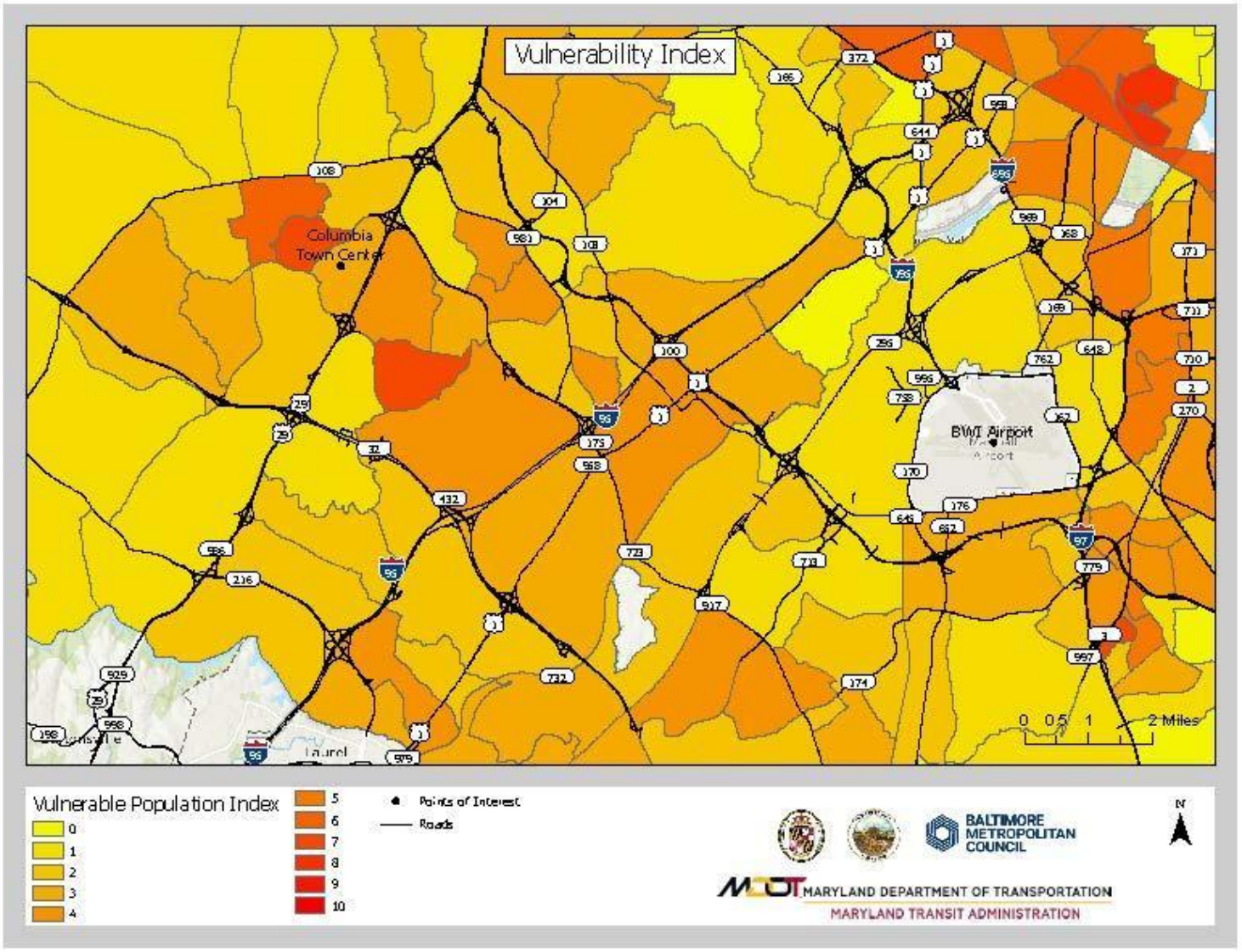


Figure 22 – Baltimore Metropolitan Council Vulnerable Populations Index



7. Findings Summary

A summary of findings from the demographic and trip flow analysis described in the previous sections is provided here.

7.1 **Population Density** – Study area concentrations of high population density include Columbia Town Center as well as other parts of central Columbia, along US 1, north of MD 175, along Milestone Parkway, south of Arundel Mills Boulevard and along MD 175 north and east of Fort Meade. Forecasted increases in population density over the 15 years evaluated occur within Columbia Town Center, central Columbia, and east of Fort Meade.

7.2 **Employment Density –** Study area concentrations of high employment density include Columbia Town Center, Columbia Gateway Center, in the vicinity of the intersection of MD 175 and Snowden River Parkway in Columbia, and the Arundel Mills Mall/Live Casino complex. Smaller concentrations occur in other portions of Columbia, along US 1, south of MD 32 near the Savage MARC train station, along MD 100 near the interchange with the Baltimore-Washington Parkway and north and west of BWI Marshall Airport. Increases in forecasted employment density over the 15 years evaluated occur in Columbia Town Center, along US 1 and in the light industrial area near the interchange of MD 100 and the Baltimore-Washington Parkway.

7.3 **Work Trip Flows to Major Study Area Activity Centers –** The study area activity centers with the largest work trip flows from origins within the study area are Columbia Town Center and Columbia Gateway Center. Columbia Gateway center has the largest catchment area for origin trips within the study area, with high origin concentrations from within Columbia, Ellicott City, US 1, along MD 175 east of the Baltimore-Washington Parkway, and residential areas around Arundel Mills. For the other activity centers evaluated, the highest origin concentrations are generally in closer proximity to the activity center.

7.4 **Transit Needs Analysis –** Demographic characteristics that identify potential transit need generally follow the same geographic distribution, with transit-need concentrations scattered throughout Columbia and along MD 175 north and east of Fort Meade.

Appendix 4 – Plans and Studies Review

Central Maryland Regional Transit Plan Pilot Corridor Analysis
Corridor #25: BWI Marshall Airport to Columbia Town Center
Review of Relevant Plans and Studies

1.0 Introduction

The purpose of this technical report is to provide a summary of key plans and studies undertaken by the jurisdictions within the RTP Corridor #25 study area that are relevant to the development of transit routing, service, and capital improvement alternatives and final recommendations. The range of plans and studies evaluated and summarized cover a range of subjects that include transportation and transit, land use, economic development, community planning, and bike and pedestrian infrastructure.

The project team worked with Steering Committee members to identify the plans and studies most applicable to the Corridor #25 planning process in order to ensure a fully comprehensive set of relevant plans. Each plan is summarized below, by jurisdiction.

2.0 Howard County Plans and Studies Summary

2.1 *Howard County General Plan (Plan 2030 and HoCo by Design)*

The current Howard County General Plan is 'Plan 2030', which was adopted in 2012 and amended in 2018. The County is currently in the planning process for a new plan, 'HoCo by Design', which will have a planning horizon of approximately 20 years.

Key takeaways from Plan 2030, which are also carried through to early materials for 'HoCo by Design' include:

- Population forecasts project continued growth for the County. Given limited availability of open land for building, growth will need to be accommodated through redevelopment at higher densities. Both plans highlight the US 1 corridor as an especially important redevelopment area.
- The County is diversifying demographically, with growth in minority populations as well as an aging population.
- Four target redevelopment areas identified in the plan are located within Corridor #25, including Columbia Town Center, Snowden River Parkway, Columbia Gateway Center, and the US 1 corridor.
    - Plan 2030 highlights the need for stronger connections between the redevelopment areas within Columbia and the US 1 Corridor.
- 'Plan 2030' and early 'HoCo by Design' materials highlight the importance of continued economic development to maintain the County's quality of life as well as workforce development to support economic development.
- 'Plan 2030' identifies transit as an important element in meeting the plan's goals, given that roadway expansion will become a less viable option as traffic volumes and congestion increase.

Each of these key takeaways are directly relevant to RTP Corridor #25, especially the need to support continued economic development, improve connectivity to, and between, target redevelopment areas, and the importance of improved connectivity between Columbia and the US 1 corridor.

2.2 *Route 1 Corridor Master Plan*

The 'Route 1 Corridor Master Plan' is a sector plan that is currently being completed in conjunction with the completion of the overall Howard County General Plan, 'HoCo by Design'. The intent once the master plan is complete is to fold its results into the overall General Plan.

At this point in time three assessments have been completed to provide a current conditions baseline for developing land use, revitalization, and capital improvement strategies for the corridor. The assessments completed include a Market and Demographic Analysis, a Transportation and Transit Assessment, and a Land Use and Urban Design Assessment.

In addition to the assessments noted, there has been an extensive community involvement effort. Key desired improvements identified through the involvement effort relative to transit and transportation include:

- Widened and connected sidewalks with streetlights.
- Safer intersections.
- Additional transit opportunities.
- Solve congestion during rush hours and more traffic calming.

Each of these desired improvements align with a transit-supportive corridor alignment and, therefore, would support recommendations developed as part of the Corridor #25 planning process.

2.3 WalkHoward

'WalkHoward' is Howard County's Pedestrian Master Plan, which was completed and adopted in 2020. The intent of the plan is to improve walkability within the County, both for accessing jobs and other activities as well as for recreation. Access to transit and bus stops is also specifically identified as a final goal of a more robust pedestrian network. The plan was based on a detailed field assessment that yielded overall infrastructure and program recommendations as well as specific structured projects.

Recommendations directly relevant to the Corridor #25 planning process include adding new sidewalks to US 1, MD 175, MD 108, Snowden River Parkway, Broken Land Parkway, Columbia Gateway Drive and Robert Fulton Drive, each a candidate for a potential transit route within the study corridor. The analysis completed in the 'Roadway and Pedestrian Access' technical report, one of the current conditions analyses completed for this plan, shows a significant lack of pedestrian infrastructure along these roadways and thus the

identification of new sidewalks along these corridors would provide important pedestrian access to transit that is not currently available.

Improvements to the existing sidewalk network in Columbia Town Center are also recommended. Finally, high priority improvements have been identified along Snowden River Parkway and Broken Land Parkway.

2.3 BikeHoward

'BikeHoward' is Howard County's Bicycle Master Plan, which was completed and adopted in 2016. The plan's goals and objectives are as follows:

- Identify and develop a countywide system of bike facilities.
- Facilitate recreational and transportation trips by bike.
- Recommend County policies to support bicycling.

The plan includes recommendations on the installation of bike facilities by time frame (short, mid, long-term) throughout the County. Bicycle improvement recommendations have been made for each of the candidate corridors for transit service including US 1, MD 175, MD 108, Snowden River Parkway, Broken Land Parkway, Columbia Gateway Drive, and Robert Fulton Drive. Improvements in each of these corridors have been identified for implementation in either the mid or long-term time frame.

2.4 Howard County Transit Development Plan

The current version of the 'Howard County Transit Development Plan' was completed in 2009 but an update is currently underway. The TDP is a short-term plan to guide transit system development in Howard County.

The framework for the plan is an evaluation of existing services, bus fleet and remaining useful remaining life by vehicle, budget and funding sources, and system and route performance. These analyses then became the basis for developing service, fleet replacement/expansion, and capital improvement recommendations.

No major changes were identified to the one service, Route 501, that runs in the corridor between Columbia Town Center and Arundel Mills Mall. One recommendation relevant to Corridor #25 was to implement new service between Columbia/Clarksville, and Savage, NSA and Fort Meade. A second relevant new-service recommendation was to provide a transit connection linking Columbia Gateway, US 1, the Dorsey MARC station and NSA/Fort Meade. Neither of these services, which were recommended in response to BRAC expansion, has been implemented but they are directly relevant to this study and will be revisited as part of the Corridor #25 planning process.

2.5 Howard County US 1 Corridor Small Area Plan

The 'US 1 Corridor Small Area Plan' was based on the results of the Central Maryland Regional Transit Plan (RTP) planning process and is meant to complement the RTP findings and recommendations. As noted in the US 1 plan Executive Summary "the RTP identified specific areas in Central Maryland that demonstrated a need for small, localized, or express transit network improvements". Other Small Area Plans identified based on the RTP results include:

- Fort Meade / Odenton (Anne Arundel County)
- Northwest Bel Air / Forest Hill (Harford County)
- Tradepoint Atlantic (Baltimore County)
- Inner Harbor (Baltimore City)

The key recommendations made in the US 1 Small Area plan include:

- Extend the current Route 409 from its current terminus at Elkridge Corners to Lansdowne Station in Baltimore County (the current 409 alignment runs along US 1 from Laurel Towne Centre in Prince George's County to Elkridge Corners in Howard County. Lansdowne Station is five miles north of Elkridge Corners).
- Increase weekday service frequency on the 409 from its current 60 minutes to 30 minutes.
- Implement an app-based demand response micro transit service. This would expand local transit coverage and provide first-mile, last-mile connections to the regional transit network.

2.5 Downtown Columbia Plan Amended – A General Plan Amendment

As noted on the introduction page of the Downtown Plan website, "The Downtown Columbia Plan Amended is an amendment to the Howard County General Plan and creates a 30-year master plan for the revitalization and redevelopment of Downtown Columbia".

The Plan contains four chapters related to land use, transportation, environment, and community engagement. The land use chapter is the plan element guiding the current downtown redevelopment toward a denser, more mixed use land use that incorporates commercial, residential, and cultural uses into a more urban context.

The transportation chapter outlines a new connected street network and a new pedestrian and bicycle system, with downtown Columbia as a destination for an expanded county wide pedestrian and bicycle network. The plan also identifies transit improvement recommendations, which include a new Downtown Columbia Transit Center, a new

Downtown Columbia shuttle service, and a multimodal connector to the Oakland Mills neighborhood to the east of Downtown Columbia.

Supporting documents to the plan include design guidelines for the downtown redevelopment, by neighborhood within downtown, as well as transportation improvement technical reports. Transit related technical reports include analysis covering the multi-modal connection to Oakland Mills and the Downtown Transit Center/Downtown Shuttle. Each of the transit technical reports represents early stage feasibility analysis.

3.0 Anne Arundel County Plans and Studies Summary

3.1 Anne Arundel General Plan (Plan2040)

The Anne Arundel County General Plan, 'Plan2040,' was adopted in May 2022. As noted in the Plan2040 Executive Summary "Plan2040 recognizes and supports the diverse landscapes and communities of Anne Arundel County. The scale and character of natural features, neighborhoods, and activity centers varies across the County. While the needs and priorities of each community may vary, in general, Plan2040 takes the following approaches:

- Targeted Development, Redevelopment and Revitalization Areas promote public and private investment in designated Town Centers, Commercial Revitalization Areas and Sustainable Communities.
- Neighborhood Preservation Areas primarily limits new development, with public investments in walking and biking infrastructure, parks, and schools.
- Peninsulas supports protection of natural shorelines, road improvements, stormwater management, adaptation to sea level rise, and decreases development potential on the planned land use map:
- Rural and Agricultural continues policies to protect rural lands, support the agricultural economy, and improve public transportation and services.

Plan2040's policies work together to shape a future for Anne Arundel County that is Green, Smart, and Equitable".

The portion of Anne Arundel County within the Corridor #25 study corridor falls almost exclusively within the 'Targeted Development, Redevelopment and Revitalization' and 'Neighborhood Preservation' areas noted above. More specifically, the portions of the study area in the vicinity of Fort Meade (generally south of MD 175) and BWI Marshall Airport (generally north of MD 100) fall into the 'Targeted Development, Redevelopment, and Revitalization Area', while the portion of the study area between MD 175 to the south and MD 100 to the north generally fall into the 'Neighborhood Preservation' area.

The capital improvement, development, and land use strategies associated with each of the two policy areas covering the Corridor #25 study area align closely with potential transit routing, service, and capital improvement alternatives/recommendations to be developed as part of the Corridor #25 project, especially increased residential and commercial development and improvements to pedestrian and bike infrastructure.

3.2 Move Anne Arundel! County Transportation Master Plan

The County Transportation Master Plan, 'Move Anne Arundel County!' was adopted in 2019 and is a supporting/companion document to 'Plan2040', the County's comprehensive plan. The plan's analysis and recommendations are structured around five modal themes:

- Making communities more walkable.
- Building a low stress bicycle network.
- Upgrading County corridors and strengthening community cores.
- Improving regional corridors to make commutes more reliable.
- Advancing a new model of transit services.

Relevant recommendations under each modal theme are as follows:

- **Making communities more walkable** – The recommendations here are focused on strengthening the pedestrian networks around public facilities and schools as well as in town centers. No specific recommendations are made relative to improved access to transit stops but there should be benefits to transit from the improvements recommended.

- **Building a low stress bicycle network** - Recommendations are generally focused on expanding the County's existing bike trail network. Any expansion to the existing strengthened bicycle network should provide benefit to transit as well.

- **Upgrading county corridors and strengthening community cores -** This area of improvements focuses on major corridors within the county, including many of the corridors that are candidates for new or expanded transit service within the Corridor #25 study area. Proposed improvements include enhanced pedestrian and bicycle safety and filling in gaps in the sidewalk network. Closing gaps in the roadway network also fall into this area and include extensions of Hanover Road and Arundel Mills Boulevard.

- **Improving regional corridors to make commutes more reliable** – This area of improvements are multi-modal in nature and include new roadway improvements, proposed commuter bus service to the Washington DC region and a new transit center at Fort Meade.

- **Advancing a new model of transit service –** This theme covers recommended improvements to transit throughout the County, not just in Corridor #25. One relevant recommendation made is strengthened transit connections between Columbia and the Fort Meade area.

3.3 Unlocking the Potential for Inclusive Transit-Oriented Development in Anne Arundel County

This report, published in December 2020, was developed by the Greater Washington Partnership and is a companion document to the "Transit Oriented Development Plan for the Washington Region', also developed by the Greater Washington Partnership.

The report evaluates TOD opportunities at rail stations throughout the County. One station, the Odenton MARC Station, is adjacent to the study area. The other stations evaluated are outside the study area (note: TOD at the Dorsey MARC station and its vicinity is of great interest to both Anne Arundel County and Howard County. The Dorsey MARC station is located in Howard County, adjacent to the border with Anne Arundel County).

Overall, the development scenario for the Odenton station outlined in the document envisions a denser residential community with a more defined commercial presence. Key elements of the evaluation include:

- Construct a new parking garage at the station to make space for development at the existing surface lots.
    - Consider methods for managing parking demand and creative financing to construct the garage.
- Improve connectivity to Fort Meade via transit in order to make the Odenton station into a two-way commuter hub.
- Create a pedestrian-oriented environment with more amenities incorporating leading practices for suburban retrofitting.

3.4 Anne Arundel County Small Area Plans

Small Area Plans were completed for different areas within the county in order to support the county's 1997 General Plan. These plans were superseded by the adoption of the 2009 Genera Plan and the subsequent adoption of Plan2040, described above.

Recommendations outlined in the plans continue to be relevant, however, so a summary of the plans for areas within the Corridor #25 study area is provided here. Three areas for

which plans were developed are located within the RTP Corridor #25 study area: BWI/Linthicum, Jessup/Maryland City, and Severn.

Key relevant recommendations by plan are summarized below.

BWI/Linthicum Plan

- Provide a new interchange at the BW Parkway and Hanover Road, serving new industrial park development west of BWI Marshall Airport.
- Study, identify, and protect an alignment to extend Light Rail service from the BWI Business District station to MD 295.
- Provide Light Rail service to the Arundel Mills development area.
- Provide sidewalks and pathways to better connect existing neighborhoods and improve overall pedestrian access throughout area communities.

Jessup/Maryland City

- Strongly urge State representatives to negotiate for more reliable commuter rail service. More capacity should be offered and commuter train reliability should be improved.
- Establish additional public bus transportation in the area. Implement bus transit recommendations in the Transit Development Plan for the Jessup/Maryland City Planning Area.
- Request that the State Highway Administration require southbound truck traffic to exit MD 295 at MD 100 instead of MD 175. This will reduce the volume of heavy truck traffic using MD 175 through Jessup.
- Address drainage issues on several local roads in the planning area, including Montevideo Road, Race Road, and Forest Avenue (all potential transit routes).

Severn

- Provide a public transportation network to meet the needs of all Severn residents. Provide access to education, training, employment, health care, social services, shopping, parklands, cultural events, entertainment, and dining.
    - Establish a special interagency team to focus all possible financial and logistical resources toward meeting the urgent immediate need for better public transportation in the high-density residential neighborhoods near Pioneer Drive and Van Bokkelen Elementary School, where a substantial part of the residents lack vehicles.
- Establish and maintain a network of pathways and roadways that are accessible to pedestrians and bicycles, linking neighborhoods, parks, schools, workplaces, stream valleys, greenspaces, and activity centers.

- Widen MD 170 from MD 32 to MD 100.

3.5 Anne Arundel County Transit Development Plan

The current version of the Anne Arundel County Transit Development Plan was completed in 2010 but an update is currently underway. The TDP is a short-term plan to guide transit system development in Howard County.

The framework for the plan follows the same structure as the Howard County TDP and includes an evaluation of existing services, bus fleet and remaining useful remaining life by vehicle, budget and funding sources, and system and route performance. These analyses then became the basis for developing service, fleet replacement/expansion, and capital improvement recommendations.

Relevant recommendations include the restructuring of existing routes providing connections between Fort Meade, Arundel Mills, and BWI and creating connections between Odenton, Fort Meade, and Arundel Mills. Some recommendations have been implemented but others have not.

3.6 Anne Arundel County Green Infrastructure Master Plan

As noted on the introduction page of the 'Green Infrastructure Master Plan' website "the County Council adopted the Green Infrastructure Master Plan on April 4, 2022. The Green Infrastructure Master Plan guides voluntary actions to conserve a network of connected natural areas and to add trees and green spaces in underserved communities in Anne Arundel County. Conservation of green infrastructure supports public health, recreation, tourism, wildlife, and water quality. The Plan includes a bold goal to conserve 5,000 more acres of open space by 2030".

There are a number of corridors and natural areas within the Corridor #25 study area, some already preserved, with other corridors candidates for preservation. Though no specific recommendations are made relative to transit connectivity, the proximity of potential transit routes to the green corridors and natural areas would provide transit access to this green infrastructure.

3.7 Fort Meade/Odenton Small Area Plan

As with The 'US 1 Corridor Small Area Plan' in Howard County, the 'Fort Meade/Odenton Small Area Plan' was based on the results of the 'Central Maryland Regional Transit Plan' (RTP) planning process and is meant to complement the RTP findings and recommendations. As noted in the Fort Meade/Odenton plan Executive Summary "the RTP identified specific areas in Central Maryland that demonstrated a need for small, localized, or express transit network improvements". Other Small Area Plans identified based on the RTP results include:

- US 1 Corridor (Howard County)
- Northwest Bel Air / Forest Hill (Harford County)
- Tradepoint Atlantic (Baltimore County)
- Inner Harbor (Baltimore City)

The key recommendations made in the 'Fort Meade/Odenton Small Area Plan' include:

- Focus fixed-route service on the corridors and destinations with the greatest transit potential, including the Jacobs Road / Meade Village Area, the Arundel Mills Mall area, and the Annapolis Road corridor.
- Consolidate the three AAC routes in the study area (Meade Village Shopper Shuttle, Crofton Connector, AAC Route 202) into two interlined routes offering higher frequencies and streamlined one-seat service to key ridership generators like Walmart, the Odenton MARC Station, Giant, and the Odenton Medical Pavilion.
- Overlay fixed-route service with app-based demand response service known as micro transit, to expand local transit coverage and complement the regional transit network through first- and last-mile connections.

4.0 MDOT Maryland Transit Administration Plans and Studies Summary

4.1 Connecting Our Future: A Regional Transit Plan for Central Maryland

As noted in the 'A Regional Transit Plan for Central Maryland' Executive Summary, "The Central Maryland Regional Transit Plan is a plan for improving public transportation in the region over the next 25 years. The Plan presents goals, objectives, and initiatives to enhance transit service, support the economy, and reduce impacts to the environment".

Further, the Executive Summary states "the Plan includes deliverables for customers, such as:

- Improving on-time performance.
- Increasing service on the most congested bus routes.
- Rail and bus fleet replacement, including the advancement of a zero emissions bus program.
- One fare platform for all transit providers in the region.
- Full ADA accessibility of all bus stops and rail stations".

Finally, as stated in the Executive Summary "while the Plan identifies a broad array of strategies, many of these require additional research and analysis before they can be implemented and will require coordination with local jurisdictions and other partners. To this end the plan does not include in-depth planning, design or engineering, or detailed cost estimates or the identification of funding options for any of the initiatives or strategies".

The planning process consisted of the following steps:

- Public outreach
- Existing conditions analysis
- Peer analysis
- Goals and objectives development
- Development and evaluation of improvement strategies
- Final recommendations development

The Plan includes over 130 strategies relating to the plan objectives, transit network improvements for each Central Maryland jurisdiction, and 30 Regional Transit Corridors that work together to achieve the Plan's goals and objectives. Corridor #25, BWI to Columbia Town Center, is one of the 30 corridors identified and evaluated in the Plan.

Each of the 30 corridors was categorized as either an Early Opportunity, Mid-Opportunity, or Long-Term Opportunity Corridor. Corridor #25 is a Mid-Opportunity Corridor.

As noted in the RTP document, "corridor identification and prioritization is the first step in the overall process. This plan does not:

- Identify what mode of transit would be used.
- Define specific routes or alignment.
- Develop specific levels of service.
- Identify where stations would be located.

These work elements are the focus of the Corridor #25 planning process. MDOT Maryland Transit Administration is also moving forward with planning and preliminary design for early opportunity corridors concurrent with the work being completed on Corridor #25.

Other corridors adjacent, or in close proximity, to Corridor #25 include:

- Ellicott City to Silver Spring (Early Opportunity)
- BWI Marshall Airport to Greenbelt (Medium Opportunity)
- Odenton to Clarksville (Long-Term Opportunity)
- Ellicott City to BWI Marshall Airport (Long-Term Opportunity)

4.2 Maryland Statewide Transit Plan

As noted in the plan Executive Summary "the Maryland Statewide Transit Plan provides a vision for improving public transportation over the next 50 years, with attention to regional context and mobility needs across the state. The vision and goals of the Plan will be achieved through the strategies identified by the Maryland Department of Transportation Maryland Transit Administration (MDOT MTA) with input from the public and collaboration with local and regional stakeholders, jurisdictions, and transit providers".

The plan is centered around seven key goals regarding transit service in Maryland:

- Be equitable, accessible, and affordable
- Ensure a safe and healthy transit environment
- Provide mobility between regions
- Connect people to jobs and opportunities
- Deliver reliable and convenient service
- Be sustainable, nimble, and innovative
- Invest wisely and sustainably

The plan identifies 31 actionable strategies to help meet the goals as outlined above. These strategies cover areas such as better accessibility for disabled and underserved populations, transition to zero emission buses, the expanded use of micro transit on-demand services in less dense areas of the state, integrated fare platforms to support more efficient transfers, and transit service that better meets all trip purposes, not just commute to work.

In addition to the 31 strategies noted above, the plan also identifies key intercity and regional transit connections that will help Maryland meet future travel needs. The intent is that investments both by the state and local jurisdictions will enhance intercity and regional transit throughout the state and support the vision and goals outlined in the Statewide Transit Plan.

Appendix 5 – Existing Transit Service

Central Maryland Regional Transit Plan Pilot Corridor Analysis
Corridor #25: BWI Marshall Airport to Columbia Town Center
Existing Transit Analysis and Evaluation

1. Introduction

Existing transit service in the BWI Marshall Airport to Columbia Town Center study area is provided by three different operators, the Regional Transportation Agency of Central Maryland (RTA), the service operator in Howard County and portions of Anne Arundel County, Anne Arundel County Office of Transportation Transit, and MDOT Maryland Transit Administration.

The purpose of this report section is to provide a brief summary of the study area services operated by each system in order to provide an understanding of the existing study corridor transit and identify those existing routes that may be candidates for modification as part of the overall study recommendations. Each system's service is summarized below.

2. RTA Service in Howard County

RTA fixed route service in Howard County is summarized below in Table 1. The majority of the Howard County routes are centered on the Columbia Mall, with a pulse transfer system in place to allow convenient transfers between routes on the hour throughout the day. If a route is not anchored at the mall, it is noted in Table 1.

Of note, **RTA Route 501** currently covers a portion of the Regional Transit Plan (RTP) Corridor #25 between BWI Marshall Airport and Columbia Town Center, running between Town Center and the Arundel Mills Mall.

RTA ADA Mobility provides door-to-door or curb-to-curb shared ride services for residents who are unable to use fixed-route transit due to disability. Trips must begin and end within ¾ mile, same day and same time, of RTA fixed route service. RTA General Paratransit (GPT) provides on-demand curb-to-curb, shared ride transportation service for Howard County residents who are unable to use the RTA fixed route system due to a disability or age. Riders may take one round trip per day and trips are limited to medical appointments, senior centers, social service agencies, employment, and colleges. Eligibility is required and trips must be reserved as least one day in advance for ADA Mobility and 48 hours in advance for GPT Mobility.

The current Howard County Transit Development Plan (TDP), completed in 2009, is currently being updated. The TDP update will be monitored during the BWI Marshall Airport to Columbia Town Center planning process and any relevant TDP recommendations will be incorporated into the final report.

Table 1 – RTA Howard County Fixed Route Service

Route	Service Area Description	Service Frequency	Weekday Hours of Service	Days of Week Service Provided
401	Harper's Choice/Clary's Forest neighborhoods in Columbia	60 minutes all day	15 hours	7 days/week
402A	Long Reach neighborhood, Columbia Crossing and Dobbin Center shopping centers in Columbia	60 minutes all day	10 hours	7 days/week
403	Dorsey's Search neighborhood, Columbia 100 Parkway and MD 108 business parks in Columbia	60 minutes all day	9 hours	7 days/week
404	Hickory Ridge neighborhood, Atholton High School in Columbia	60 minutes all day	11 hours	7 days/week
405	Ellicott City, Howard County Government Center	60 minutes all day	14 hours	7 days/week
407	Owen Brown and Kings Contrivance neighborhoods in Columbia	60 minutes all day	15 hours	7 days/week
408	Long Reach neighborhood, Dobbin Center and Snowden Square shopping Centers in Columbia	60 minutes all day	15 hours	7 days/week
409	US Route 1 – Laurel Town Center to Elkridge including Maryland Food Center (not anchored at Columbia Mall)	60 minutes all day	11 hours	Weekday, Saturday
501	Columbia Mall to Arundel Mills Mall – Dobbin Center and Snowden Square shopping centers, US Route 1 Maryland Food Center, Arundel Mills Mall	60 minutes all day	15 hours	7 days/week
503	Columbia Mall to Laurel Town Centre – Savage, North Laurel	60 minutes all day	11 hours	Weekday, Saturday

Source: Public Timetables - RTA website

3. Anne Arundel County Office of Transportation - Transit

Transit fixed route service in Anne Arundel County is summarized in Table 2. The large majority of the fixed routes summarized in the table are outside the BWI to Columbia Town Center corridor but are identified to provide an overall understanding of the County's transit system.

The Anne Arundel County Office of Transportation also runs two paratransit services for older residents and residents with disabilities. **Complementary Paratransit** is similar to the fixed route system in terms of hours of service and locations served. Origins and destinations for this service must be within ¾ mile of the fixed route system. **General Paratransit** provides demand-response service to and from locations throughout the entire county (Complementary service riders can make a reservation up to a day before the trip, while General Paratransit riders must make their reservation at least two days prior to their trip).

The Office of Transportation also runs the South County Call 'N' Ride, a demand response service open to all riders. The service operates on weekdays between 7 AM and 7 PM. Reservations must be made 2 hours in advance of the trip. The service covers origins and destinations within the southern portion of the County and also feeds into the **AA Gold** fixed route at the Edgewater Library.

In addition to the Anne Arundel County Office of Transportation run services, **RTA Route 502** runs between Laurel Towne Centre and Arundel Mills Mall via Maryland City. This service runs seven days per week at a 60 minute service frequency. Weekday hours of service provided is 15 hours.

The Anne Arundel County Office of Transportation Transit Development Plan (TDP), completed in 2009, is currently being updated. The TDP update will be monitored during the BWI Marshall Airport to Columbia Town Center planning process and any relevant TDP recommendations will be incorporated into the final report.

Table 2 – Anne Arundel RTA Howard County Fixed Route Service

Route	Service Area Description	Service Frequency	Weekday Hours of Service	Days of Week Service Provided
Shopper Shuttle	Meade Village, Freetown Village, Quarterfield Crossing shopping centers in Severn	n/a	9 hours	Saturday only
Brooklyn Park Connector	Brooklyn Park, Ferndale, Glen Burnie Light Rail station	Approx. 55 minutes all day	11 hours	Weekday/Saturday
AA-201	Freetown, Glen Burnie, Glen Burnie Light Rail station, Arundel Mills Mall (within corridor)	30 minutes peak 45 minutes off peak	17 hours	7 days/week
AA-202	Odenton, Fort Meade, Severn, Arundel Mills (within corridor)	30-45 minutes throughout day	17 hours	7 days/week
AA Gold Line Extension	Ritchie Highway Corridor – Glen Burnie Light Rail station to Westfield Mall via Annapolis	60 minutes all day	15 hours	7 days/week
AA Gold Edgewater	Edgewater, Parole, Annapolis, Westfield Mall Annapolis	60 minutes all day	14 hours	7 days/week
AA – Yellow Bus Route	Parole, Loretta Heights, Westfield Mall Annapolis	60 minutes all day	12 hours	Weekday/Saturday
Crofton Express	Crofton to Westfield Mall Annapolis	60 minutes all day	11 hours	Weekday only
Crofton Connector	Crofton, Odenton, Odenton MARC Station	15-60 minutes throughout day	12 hours	Weekday only
County Connector	BWI Light Rail Station, BWI MARC Station, Hanover Amazon warehouse, Arundel Mills Mall, Arundel Reserve (within corridor)	30 minutes peak approx. 55 minutes off-peak	18 hours	7 days/week

Source: Public Timetables – Anne Arundel County Office of Transportation Transit website

4. MDOT Maryland Transit Administration

Four MDOT Maryland Transit Administration (MDOT MTA) modes operate in the BWI Marshall Airport to Columbia corridor. Each is summarized below.

4.1 Fixed Route Bus Service

The MDOT MTA's fixed route bus network is focused on Baltimore City and Baltimore County, however there are four local fixed route services that run into either Howard County or Anne Arundel County from those two jurisdictions. Each is summarized below.

The **LocalLink 69** route runs from the Patapsco Light Rail Station and serves Pasadena and Glen Burnie, predominantly centered on MD 3 (Crain Highway). The route runs seven days per week with a weekday service frequency of 60 minutes throughout the day. Weekday hours of service are 21 hours per day. This route is located east of the study corridor.

The **LocalLink 70** route runs from the Patapsco Light Rail Station and serves Glen Burnie, Pasadena, Severna Park and Annapolis via MD 2 (Ritchie Highway). The route runs seven days per week, with a weekday service frequency of 50 minutes during the peak and 60 minutes in the off peak. Weekday hours of service are 20 hours per day. This route is located east of the study corridor.

The **LocalLink 75** route runs from the Patapsco Light Rail Station and serves the eastern end of the study corridor, including serving the BWI Business District, BWI Marshall Airport proper, the Northrop Grumman complex, the BWI Midfield Cargo Complex, Arundel Mills Mall, and Parkway Center (on select trips). The route runs seven days per week, with a weekday service frequency of 35 minutes during the peak and 45 to 50 minutes in the off peak. Weekday hours of service are 24 hours per day.

The **Express BusLink 150** runs between Inner Harbor East in downtown Baltimore and Columbia Town Center via US 29 and US 40. This is a weekday peak period service only, with three trips in the peak direction (AM peak inbound toward Baltimore City and PM peak outbound toward Columbia) and two trips in the off-peak direction.

4.2 Commuter Bus Service

MDOT MTA runs a series of commuter bus services in both Howard and Anne Arundel County that are generally centered on service to Baltimore City or Washington DC, that start or end in the study corridor. Each of these commuter bus routes is summarized in Table 3.

Table 3 – Study Corridor MDOT MTA Commuter Bus Services

Route #	Terminal Points	Days of Week	# of Trips/Frequency	Hours of Service	Stops in Corridor?
201	Gaithersburg P&R and BWI Business District via MD 200, US 29, I-95 and BW Parkway. Serves Park and Rides along route, Arundel Mills Mall and BWI Marshall Airport. Also serves the Dorsey and BWI MARC Stations.	7 days/week	60 minutes throughout day	5:00 AM to 6:00 PM – eastbound trips 5:00 AM to 11:00 PM – westbound trips	Yes
203	Sowden River Parkway in Columbia (off MD 175) and Medical Center Metrorail Station in Bethesda via MD 175, US 29, and the Capital Beltway. Serves Columbia Town Center, park and rides along US 29, the Food and Drug Administration campus in White Oak and the National Naval Medical Center in Bethesda.	Weekday only	Five AM peak trips: all trips inbound toward Bethesda Five PM peak trips: all trips outbound toward Columbia	Peak period, peak direction only	Yes
210	Kent Island and downtown Baltimore via Annapolis.	Weekday only	Five AM peak trips: all trips inbound toward Baltimore (three start on Kent Island, two at Westfield Annapolis Mall) Five PM peak trips: all trips outbound toward Westfield Mall and Kent Island	Peak period, peak direction only	No

Table 3 – Study Corridor MDOT MTA Commuter Bus Services (cont.)

Route #	Terminal Points	Days of Week	# of Trips/Frequency	Hours of Service	Stops in Corridor?
215	Baltimore and Annapolis	Weekday only	Three AM trips from Baltimore to Annapolis Three PM trips from Annapolis to Baltimore	Peak period, reverse peak direction only	No
305	Columbia Town Center and downtown Washington DC via Oakland Mills in Columbia, Broken Land P&R, and Silver Spring Metrorail Station. Travels on US 29 and 16th Street in DC.	Weekday only	11 AM peak trips: all trips inbound toward Washington DC 12 PM trips: all trips outbound toward Columbia (first trip leaves at 1:00 PM)	Peak period, peak direction only	Yes
310	Columbia Town Center to downtown Baltimore and Johns Hopkins Hospital via I-95	Weekday only	Seven AM peak trips: all trips inbound toward Baltimore Seven PM peak trips: all trips outbound toward Columbia	Peak period, peak direction only	Yes
315	Ellicott City to downtown Washington DC via US 29 and 16th Street (stops at Columbia Town Center and Silver Spring Metrorail station.	Weekday only	10 AM peak trips: all inbound to Silver Spring and DC (three trips begin in Ellicott City – others start at Columbia Town Center) 10 PM peak trips: all outbound to Columbia (three trips terminate in Ellicott City – others terminate in Columbia Town Center)	Peak period, peak direction only	Yes

Table 3 – Study Corridor MDOT MTA Commuter Bus Services (cont.)

Route #	Terminal Points	Days of Week	# of Trips/Frequency	Hours of Service	Stops in Corridor?
325	Columbia Town Center to Downtown DC via US 29 and 16th Street	Weekday only	Seven AM trips, all from Columbia toward DC Seven PM trips, all from DC toward to Columbia	Peak period, peak direction only	Yes
335	Clarksville and Downtown DC via MD 32, I-95, and BW Parkway (does not serve Columbia Town Center)	Weekday only	Seven AM peak trips: all trips inbound toward Washington DC Eight PM trips: all trips outbound toward Clarksville	Peak period, peak direction only	Yes
345	Ellicott City (Long Gate P&R) via Long Reach neighborhood in Columbia and Broken Land Park and Ride. DC accessed via MD 32, I-95, and BW Parkway (does not service Columbia Town Center)	Weekday only	Seven AM peak trips: all trips inbound toward Washington DC Eight PM trips: all trips outbound toward Ellicott City	Peak period, peak direction only	Yes

4.3 Light RailLink

MDOT MTA Light RailLink runs from Hunt Valley, through downtown Baltimore, and then to two different branches in Anne Arundel County, one branch to Glen Burnie and one branch to BWI Marshall Airport. The BWI branch serves two stations within the study corridor, the BWI Business District Station and the BWI Marshall Airport Station located on Airport property. The service runs seven days per week, with 21 hours of service on weekdays. Weekday service frequencies to BWI Marshall Airport are 20 minutes in the peak period and 30 minutes in the off-peak.

4.4 MARC Commuter Rail Service

MARC Commuter Rail service runs between Baltimore and Washington DC via two different routes, the Camden Line and the Penn Line. There are multiple station stops on each line within the study corridor. Each line is summarized below.

The **MARC Camden Line** runs between Camden Station in downtown Baltimore and Union Station in Washington DC. The Camden Line is predominantly peak period bi-directional service. In the AM peak there are six southbound trips and four northbound trips. In the PM peak there are seven northbound trips and three southbound trips.

The northernmost Camden Line station in the study area is the **Dorsey MARC Station**, which is located east of US 1 off of MD 100. There is direct access to the station off of MD 100 from both directions. The station is currently served by RTA Route 501 and MTA Commuter Route 201.

Moving south, the next Camden Line station in the study area is the **Jessup MARC Station,** which is located on Old Jessup Road, east of US 1, off of MD 175. Access to Old Jessup Road is directly from MD 175. No current transit routes serve the station.

The southernmost Camden Line station in the study area is the **Savage MARC Station**, which is located just south of MD 32 and east of US 1 on Dorsey Run Road. There is direct access to the station from MD 32 via the Dorsey Run Road exit. The station is served by the RTA Route 409.

The **MARC Penn Line** runs between Penn Station, north of downtown Baltimore, and Union Station in Washington DC. The Penn Line runs approximately 20 hours a day, with 29 daily trips in each direction. Trips run every 15 to 30 minutes in both directions during the peak period. There are two Penn Line stations in the study area. The northernmost is the **BWI-Marshall MARC Station**, which is located in close proximity to BWI Marshall Airport off of MD 170. The station is served by the MTA LocalLink 75 route and the MTA Commuter Route 201. The BWI station is also served by AMTRAK Northeast Corridor service.

The second Penn Line station in the study area is the **Odenton MARC Station,** which is located just south of MD 175 in Odenton. The station is accessed via Telegraph Road and Odenton Road.

Appendix 6 – Land Use, Development, and Zoning

Central Maryland Regional Transit Plan Pilot Corridor Analysis
Corridor #25: BWI Marshall Airport to Columbia Town Center
Land Use, Development, and Zoning

1. Introduction

Land use within the BWI Marshall Airport to Columbia Town Center is generally suburban in nature but within that overall suburban context there are a range of land uses, from lower single family residential to light industrial and warehouse properties, to large regional activity centers. The purpose of the technical analysis contained in this Appendix is to review corridor land use, zoning and development priorities within the corridor, with a focus on how these characteristics would impact potential future transit alignments and levels of service.

2. Generalized Zoning

Figure 1 presents a study corridor generalized zoning map from the Maryland Office of Planning. Key corridor zoning characteristics to highlight include:

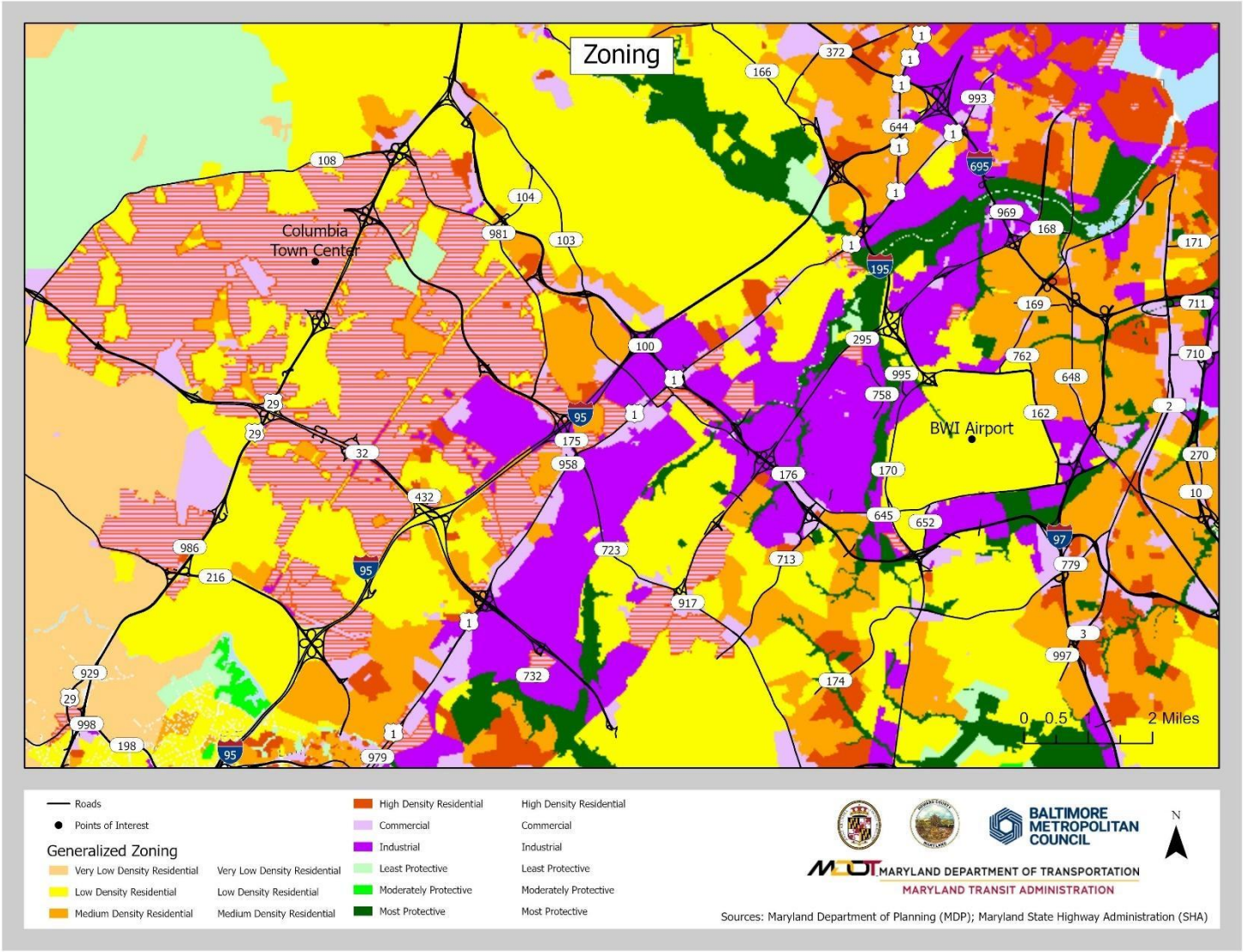
1. Higher Density Residential in Columbia – In general Columbia is zoned for higher residential density than much of the remainder of the corridor. This higher density zoning is reflected in the mix of single family, townhouse, garden apartment, and mid to high rise development throughout Columbia versus more single family residential development throughout much of the remainder of the corridor.

   Other areas of the corridor with higher residential zoning includes along US 1 both north and south of MD 175, MD 175 in the vicinity of Milestone Parkway, and along MD 100.

2. Commercial, Warehouse, and Light Industrial Properties - On the generalized zoning map the large sections of the corridor colored purple are identified as industrial though in reality these locations represent commercial, warehouse and light industrial properties. Key concentrations include:

   a. Columbia Gateway, located in the southwest quadrant of the intersection of I-95 and MD 175.
   b. Both sides of US 1 between MD 32 and MD 100. This concentration includes the Maryland Food Center.
   c. West of BWI Marshall Airport, representing the warehouse and light industrial district centered on Coca-Cola Drive and New Ridge Road.
   d. North of the BWI Marshall Airport, representing the BWI Business District.

Figure 1 – Corridor Zoning



3. Land Use

This section outlines more detail on specific types of land use in the corridor, with a specific focus on the types of land use that should be considered as alternative alignments are developed and evaluated.

a. Large Activity Centers – In additional to the overall land uses described in Section 2, the corridor is characterized by seven large activity centers that are both major trip attractors and trip generators. Connecting these activity centers will be of high importance in developing and evaluating alternative transit alignments. These activity centers include Columbia Town Center, Columbia Gateway, the Maryland Food Center, Fort Meade, Arundel Mills Mall and Live Casino, BWI Marshall Airport, and the BWI Business District.

b. Shopping Centers and Corridor Shopping Concentrations – There are a mix of shopping centers of different size within the corridor that may be important destinations for transit riders. In addition, there are shopping concentrations along key corridors within the study area. These shopping centers and corridor concentrations include:

   i. Columbia Town Center
   ii. Owen Brown Village Center off of Broken Land Parkway in Columbia
   iii. Snowden River Parkway Corridor
   iv. Snowden Square Shopping Center off of Robert Fulton Drive and Snowden River Parkway
   v. Dobbin Center Shopping Center south of MD 175 on Dobbin Road in Columbia
   vi. Columbia Crossing north of MD 175 on Dobbin Road in Columbia
   vii. Gateway Overlook at the intersection of MD 108 and MD 175
   viii. US 1 corridor, south of MD 175
   ix. MD 175 corridor between US 1 and Milestone Parkway
   x. MD 175 corridor between Milestone Parkway and MD 713
   xi. MD 175 corridor between MD 713 and Fort Meade
   xii. Shopping concentration at intersection of Milestone Parkway and Arundel Mills Road
   xiii. Arundel Mills Mall and surrounding shopping

c. Warehouse and Light Industrial Concentrations – There are two major warehousing and light industrial concentrations within the corridor. The first is along the US 1 corridor, running the full length between the north/south boundaries of the study corridor from MD 32 to MD 100. The second is west of BWI Marshall Airport, centered on Coca Cola Drive and New Ridge Road. Smaller concentrations include the large industrial park with mixed uses located off of MD 108 in Columbia, a comparable concentration east of Snowden River Parkway, also in Columbia, and along MD 103 between US 1 and Race Road.

d. Large Commercial Concentrations – There are four large commercial concentrations in the corridor. These include Columbia Town Center, Columbia Gateway, in the area surrounding Arundel Mills, and the BWI Business District.

4. Development and Policy Priorities

Discussions with key staff from each of the jurisdictions within the study corridor as well as a review of key plans and studies identified the following development priorities for each jurisdiction. These priorities will be a key input as alignment alternatives are developed and evaluated.

a. Howard County

i. Redevelopment of US 1 and stronger connections between US 1 and Columbia.
ii. Continued redevelopment of Columbia Town Center as well as redevelopment along the Snowden River Parkway Corridor in Columbia.
iii. Continued redevelopment of Gateway Center, including increasing densities and creating mixed uses.
iv. Improving multimodal connections to MARC rail stations within the corridor.

b. Anne Arundel County

i. Stronger connections to targeted growth areas within the County, including Fort Meade, the Arundel Mills vicinity, the BWI Marshall Airport area, including the warehouse/light industrial district west of the airport, and to the BWI Business District.
ii. Improving multimodal connections to MARC rail stations.