LATR

Local Area Transportation Review Guidelines

July 2021

MotorVehicleMetrorailBicycleBusRapidTransitMARCTrainPedestrian

MARYLAND - NATIONAL CAPTIAL PARK AND PLANNING COMMISSION

The Planning Board approved this version of the LATR Guidelines on March 7, 2024 to correct errors that previously appeared in Appendix 4.

Abstract

Local Area Transportation Review Guidelines
Planning Board Updates: May 13, 2010, June 17, 2011, February 9, 2012, January 24, 2013, May 25, 2017, September 28, 2017 and July 1, 2021. These guidelines are to be used for preparation and review of transportation impact studies for development in Montgomery County. This information should be used by transportation engineers, planners, public agency reviewers and community members participating in the development review process.

Source of Copies

The Maryland-National Capital Park and Planning Commission
Montgomery County Planning Department
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Wheaton, MD 20902
http://montgomeryplanning.org/planning/transportation/

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I. Executive Summary

The Local Area Transportation Review (LATR) and Policy Area Mobility Review (PAMR) Guidelines were updated by the Planning Board on May 13, 2010; June 17, 2011; and February 9, 2012. The Local Area Transportation Review (LATR) and Transportation Policy Area Review (TPAR) Guidelines were updated by the Planning Board on January 24, 2013. The Local Area Transportation Review (LATR) Guidelines were updated by the Planning Board on May 25, 2017 and September 28, 2017.

On November 15, 2016, the County Council adopted changes to the Subdivision Staging Policy, eliminating the Transportation Policy Area Review as an area-wide test for transportation adequacy. The Planning Board approved the revision of the Local Area Review and Transportation Policy Area Review Guidelines to incorporate the Council's action on April 20, 2017 – naming the resultant document as the Local Area Transportation Review Guidelines.

On November 16, 2020, the County Council adopted changes to the Growth and Infrastructure Policy (formerly known as the Subdivision Staging Policy). Accordingly, the Planning Board approved the revision of the Local Area Transportation Review Guidelines on July 1, 2021. This document reflects that action. The LATR Guidelines are to be used for preparation and review of transportation impact studies for development in Montgomery County. This document should be used by transportation engineers, planners, public agency reviewers and community members participating in the development review process.

The new guidelines refine the context-sensitive and multi-modal procedures and analysis methods reflected in the 2017 LATR Guidelines as they relate to the determination of adequacy of local transportation system performance in the context of the development review process. In addition, the guidelines contain many new ideas that emphasize the desire to better reflect the County's multi-modal and Vision Zero-related goals and objectives in support of the evaluation of local transportation system performance. Key changes reflected in this document include:

- Prioritize motor vehicle mitigation strategies designed to improve travel safety.
- Require a Vision Zero Statement for all projects estimated to generate 50 or more net new weekday peak-hour person trips.
- Introduce the application of a Pedestrian Level of Comfort (PLOC) measure to evaluate pedestrian adequacy.
- Eliminate the motor vehicle adequacy test in Red Policy Areas (Metrorail Station Policy Areas and Purple Line Station Areas), where multimodal transportation options are more prevalent.
- Exempt bioscience facilities, for the next four years, from all LATR tests to provide faster approval of facilities that support biological research and development or the manufacturing of related products and provide significant employment opportunities in the county.

- Update the scoping and mitigation requirements for developer-funded bikeways, sidewalks and bus shelters to be more robust to evaluate adequacy.

Net new trips are trips (including pass-by and diverted link trips associated with retail development) generated by a site, considering only those net additional trips proposed by the current development application.

In summary, these guidelines provide for the application of a more robust and multi-modal set of local transportation system performance evaluation procedures. The Growth and Infrastructure Policy maintains the recommendation that Montgomery County continue to evolve over time through the incremental implementation of proportional cost-sharing (pro-rata share) transportation districts, in addition to those established in White Flint and White Oak – and under development in Bethesda.

In areas where such pro-rata share districts are established, development will proceed conditioned on the payment of a fee to the county, commensurate with the applicant's proportion of the cost of a Unified Mobility Program[1] (UMP). In this context, the components of the UMP and the fee per peak-hour vehicle (or person) trip will be established by County Council resolution after a public hearing.

[1] A Unified Mobility Program reflects a selected set of master-planned transportation projects (including the associated costs of design, land acquisition, construction and site improvements, and utility relocation) needed to achieve LATR adequacy at the master plan planning horizon.

II. Introduction

A. Principles of Local Area Transportation Review

Section 50-4.3(J) of the County Code directs the Montgomery County Planning Board to find that public facilities will be adequate to serve proposed development. This Adequate Public Facilities (APF) finding requires forecasting travel demand generated by proposed development and comparing it to the capacity of existing and programmed roads and transit. An applicant for proposed development must show that adequate transportation facilities will be in place within a specified period of time.

Alternatively, the applicant must provide those facilities or make a Traffic Mitigation Payment toward area-wide transportation needs. These guidelines explain the methodology for determining adequacy, specify mitigation for projected traffic generated by proposed development projects and describe how Traffic Mitigation Payments are determined.

There is a set of multi-modal tests (applied to motor vehicle, transit, bicycle and pedestrian travel) for determining transportation adequacy — the Local Area Transportation Review (LATR). These tests, described in the subsequent sections of these guidelines, are required by the 2020-2024 Growth and Infrastructure Policy adopted by the County Council on November 16, 2020.

These guidelines explain the methodology for documenting and analyzing the anticipated impact of proposed development on roadway and intersection performance and quality of travel. The criteria in these guidelines determine whether a development can satisfy the requirements for transportation adequacy.

Following the standards of the Growth and Infrastructure Policy, the Planning Board must not approve a development if local area transportation conditions are deemed inadequate. The Planning Department staff's review and the Planning Board's decision are based on existing and programmed roads, available and programmed public transit, and physical improvements or trip mitigation measures to be provided by the applicant.

B. Applicability

LATR is applied to development projects that will generate at least 50 total net new weekday peak-hour person trips. Projects that generate fewer than 50 total net new weekday peak-hour person trips must prepare a transportation study exemption statement describing the basis for any exemption from LATR.

LATR is applied by policy area (see Map 1). Detailed policy area maps, with streets shown, are provided in the 2020-2024 Growth and Infrastructure Policy Resolution found here (see pages 24-66): https://montgomeryplanning.org/wp-content/uploads/2020/11/20210101-Text-of-the-2020-2024-Growth-and-Infrastructure-Policy-with-Maps.pdf

LATR compliance is not required for developments in the White Flint Policy Area. Applicants must agree to participate in the White Flint Special Taxing District for transportation infrastructure improvements in lieu of satisfying the transportation Adequate Public Facility (APF) tests for LATR. Similarly, LATR compliance is not required for developments in the White Oak Policy Area. Applicants must pay mitigation payments specified by the White Oak Local Area Transportation Improvement Program for transportation infrastructure improvements in lieu of satisfying the transportation APF tests for LATR (see Appendix 4).

In the Potomac Policy Area, the only developments subject to LATR are those with site-generated trips that will impact any of the following intersections:

- Montrose Road at Seven Locks Road;
- Democracy Boulevard at Seven Locks Road;
- Tuckerman Lane at Seven Locks Road;
- Democracy Boulevard at Westlake Drive;
- Westlake Drive at Westlake Terrace;
- Westlake Drive at Tuckerman Lane;
- Bradley Boulevard at Seven Locks Road;
- River Road at Bradley Boulevard;
- River Road at Piney Meetinghouse Road;
- River Road at Falls Road;
- Falls Road at Democracy Boulevard; and
- River Road at Seven Locks Road.

LATR mitigation and/or payments are not required for public facility project mandatory referrals, for which the Planning Board's comments are advisory. Mandatory referrals are often unique uses, such as schools or other public services, and their traffic review follows Mandatory Referral Guidelines, which require a pedestrian and bicycle safety statement, pedestrian and vehicular circulation plan, and a transportation study exemption statement or transportation study as applicable.

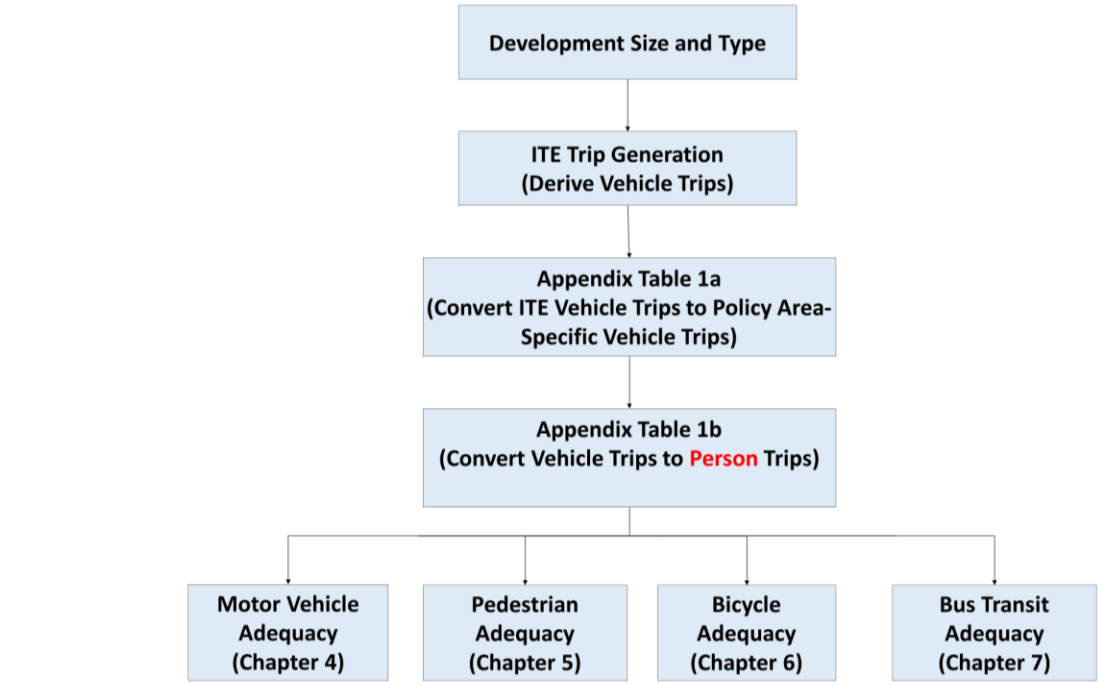
It should be noted that many development approval conditions related to transportation are derived from other elements of the regulatory process, including site layout design, site access and internal site travel circulation features. These elements are evaluated based on design standards that are independent of LATR.

C. How to Use These Guidelines

These guidelines are to be used by applicants to prepare transportation studies for Montgomery County Planning Board approval and used by staff when reviewing those studies.

The following chart (Figure 1) illustrates the steps needed to arrive at a recommendation for approval of the transportation test for the Adequate Public Facilities Ordinance. These guidelines describe the information needed from the applicant to determine the answer at each step of the process and the considerations staff must evaluate when reviewing the document.

Figure 1. Montgomery County Local Area Transportation Review Process



Project applications requiring LATR studies include:

- Preliminary plans (as part of a subdivision application).
- Site plans not requiring subdivision.
- Conditional use and zoning cases before the Board of Appeals and County Council.

These guidelines also apply in cases where a preliminary plan of subdivision or a site plan is not required for a building permit, and a determination of Adequate Public Facilities (APF) must be made prior to or at the time of building permit release by the Planning Department in accordance with Montgomery County Code Chapter 8, Article IV and Code of Montgomery County Regulations (COMCOR) 50.00.01.10D. There are two different types of APF review at building permit:

- If a complete and adequate transportation statement is submitted and the proposed development generates fewer than 50 total net new peak hour person trips, the APF

determination may be approved administratively by the Planning Department Director or designee.

- If a complete and adequate transportation study is submitted and the proposed development generates 50 or more total net new peak hour person trips, the APF determination must be approved by the Planning Board following a full public hearing.

Refer to COMCOR 50.00.01.10D for the review process including an Intake and Regulatory Coordination (IRC) Division application, noticing for a Planning Board hearing and other details.

When a proposed development is projected by the LATR process to contribute to inadequate transportation conditions, the applicant should consult with Planning Department staff, Montgomery County Department of Transportation (MCDOT), Maryland State Highway Administration (SHA) and neighboring jurisdictions (when applicable) as appropriate to develop recommendations that can mitigate the project's impact and thereby gain Planning Board approval. A description and a prioritization of these mitigation approaches are provided in subsequent sections of these guidelines.

The guideline procedures outlined in this document are intended to provide a snapshot of estimated future travel conditions for proposed development. These procedures are not intended to establish delay-free travel conditions.

D. Relationship to Guiding Documents

These guidelines focus on the timing or staging of development in combination with transportation-related public facilities and come into play primarily during the regulatory process. Montgomery County's General Plan, as amended by approved and adopted master, sector and functional plans, determines the amount, pattern, location and type of development within the county. The master planning process is largely aspirational, creating a long-term vision for our communities. These guidelines have a more focused, shorter term view. Their purpose is to evaluate individual proposals for development, determining if the county's transportation network has sufficient capacity and quality to accommodate the additional travel demand.

County master plans identify where growth is appropriate and at what levels or densities this growth should occur. They provide a vision for the future of the county – from the General Plan's very conceptual level to much more detailed recommendations in small area plans. For each master plan, some high-level analysis is done regarding infrastructure needed to accommodate the vision outlined in the master plan. This analysis utilizes areawide-level methods and procedures to determine the balance between land use and transportation capacity and quality at the master planning horizon and may result in recommended capital improvements that could be implemented by the public sector or private sector.

The Capital Improvements Program (CIP) and the Consolidated Transportation Program (CTP) are the vehicles through which the county and state respectively increase the capacity and quality of public transportation facilities to support existing development and future growth.

For the Local Area Transportation Review procedures described in these guidelines, the programmed transportation projects to be considered are those fully funded for construction in the first six years of the county's currently approved Capital Improvements Program, the state's Consolidated Transportation Program or any municipal capital improvements program.

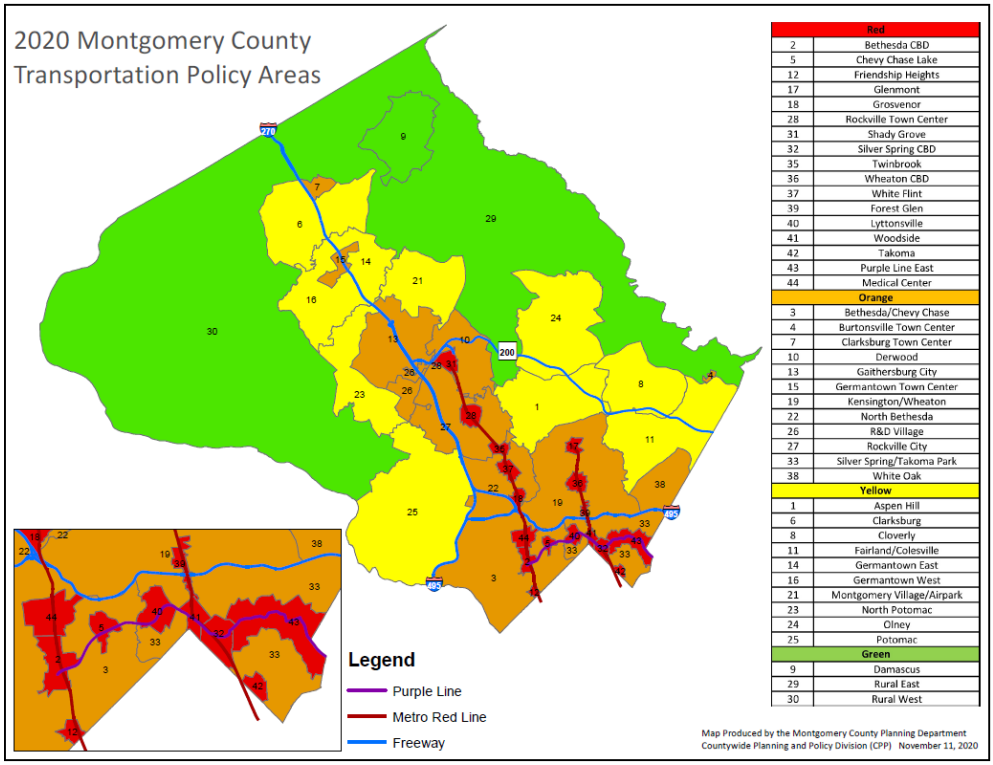
These guidelines are also recognized as the standard for reports to the Board of Appeals and Hearing Examiner for conditional use and zoning cases.

E. Policy Area Definitions

For the purposes of these guidelines, county policy areas are organized into four (4) categories described below and depicted in Map 1:

- **Red**: Downcounty central business districts, Purple Line station policy areas and Metro station policy areas (MSPAs) generally characterized by high-density development and the availability of premium transit service (i.e., Metrorail, Purple Line, MARC).
- **Orange**: Corridor cities, town centers and emerging transit-oriented development (TOD) areas where premium transit service (i.e., Corridor Cities Transitway, bus rapid transit) is planned.
- **Yellow**: Lower density areas of the county characterized by mainly residential neighborhoods with community-serving commercial areas.
- **Green**: The county's Agricultural Reserve and rural areas.

Map 1. Growth and Infrastructure Policy Areas



Red	
2	Bethesda CBD
5	Chevy Chase Lake
12	Friendship Heights
17	Glenmont
18	Grosvenor
28	Rockville Town Center
31	Shady Grove
32	Silver Spring CBD
35	Twinbrook
36	Wheaton CBD
37	White Flint
39	Forest Glen
40	Lyttonsville
41	Woodside
42	Takoma
43	Purple Line East
44	Medical Center
Orange	
3	Bethesda/Chevy Chase
4	Burtonsville Town Center
7	Clarksburg Town Center
10	Derwood
13	Gaithersburg City
15	Germantown Town Center
19	Kensington/Wheaton
22	North Bethesda
26	R&D Village
27	Rockville City
33	Silver Spring/Takoma Park
38	White Oak
Yellow	
1	Aspen Hill
6	Clarksburg
8	Cloverly
11	Fairland/Colesville
14	Germantown East
16	Germantown West
21	Montgomery Village/Airpark
23	North Potomac
24	Olney
25	Potomac
Green	
9	Damascus
29	Rural East
30	Rural West

F. Mitigation Priorities

The prioritization of mitigation approaches is described for each multi-modal LATR adequacy test in subsequent sections of these guidelines. A mitigation approach may be elevated in priority if it is explicitly identified in an area master plan or sector plan.

In Road Code Urban Areas (RCUAs) and Bicycle and Pedestrian Priority Areas (BiPPAs), adjustment of the prioritization of mitigation approaches as described in subsequent sections of these guidelines may be made to allow for mitigation payment in lieu of construction.

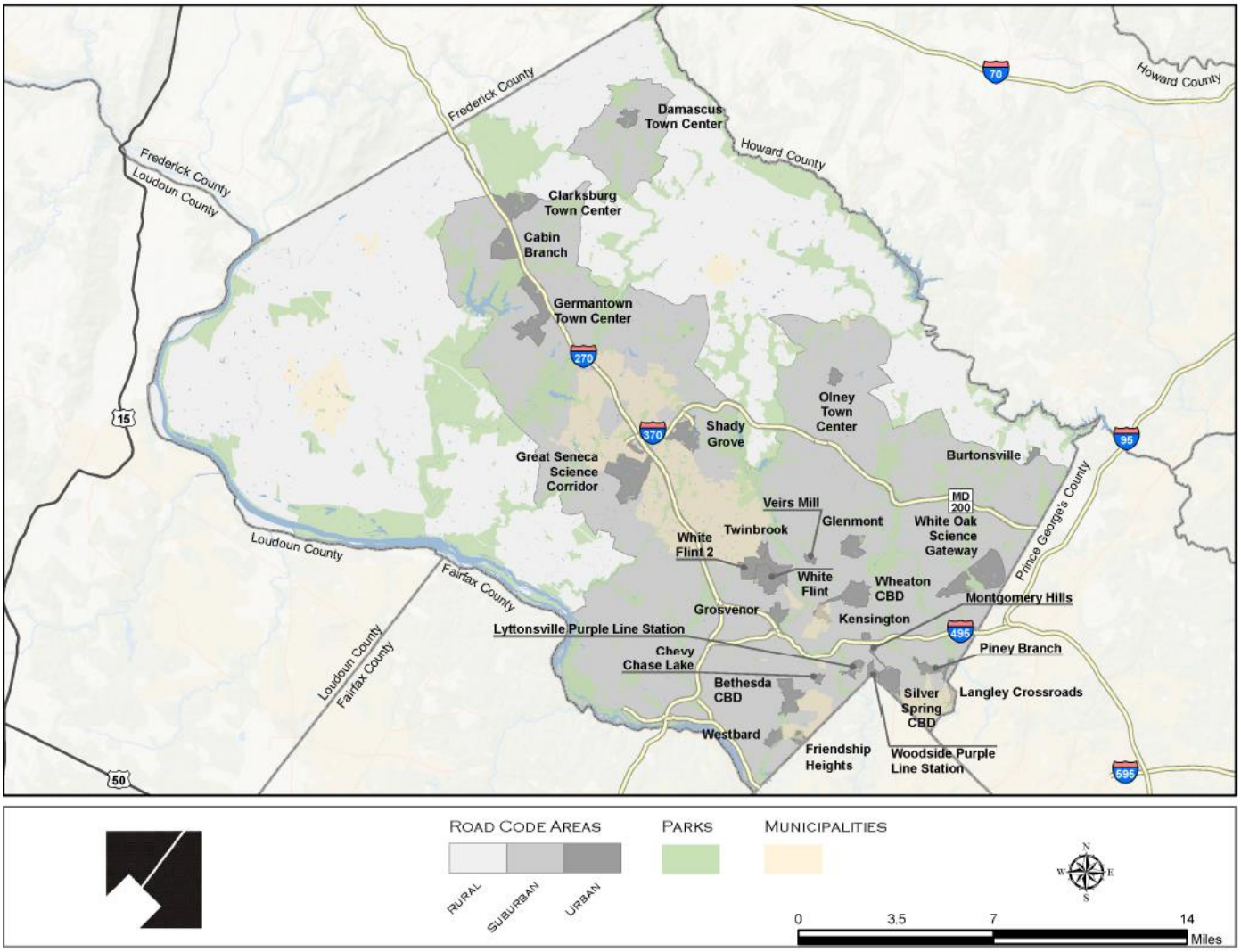
The consideration of land use context in defining appropriate transportation solutions extends beyond the policy area geography. For example, the implementation of transportation facilities is governed by Section 49 of the County Code, also known as the "Road Code." As with policy areas, the Road Code also defines portions of the county as urban, suburban or rural, and these definitions are also adopted by County resolution (while being more finely-grained than the policy area definitions).

The RCUAs, such as the Olney Town Center or Damascus Town Center, reflect nuances within a policy area where the land use is expected to generate a higher proportion of walking and bicycling than in other locations of the policy area. Accordingly, there should be slower speed limits, wider sidewalks and similar design elements associated with a walkable town center in the RCUAs. The county has also designated BiPPAs that are locations where the enhancement of bicycle and pedestrian traffic is a priority. Maps depicting the boundaries of RCUAs and BiPPAs are provided as Map 2 and Map 3, respectively.

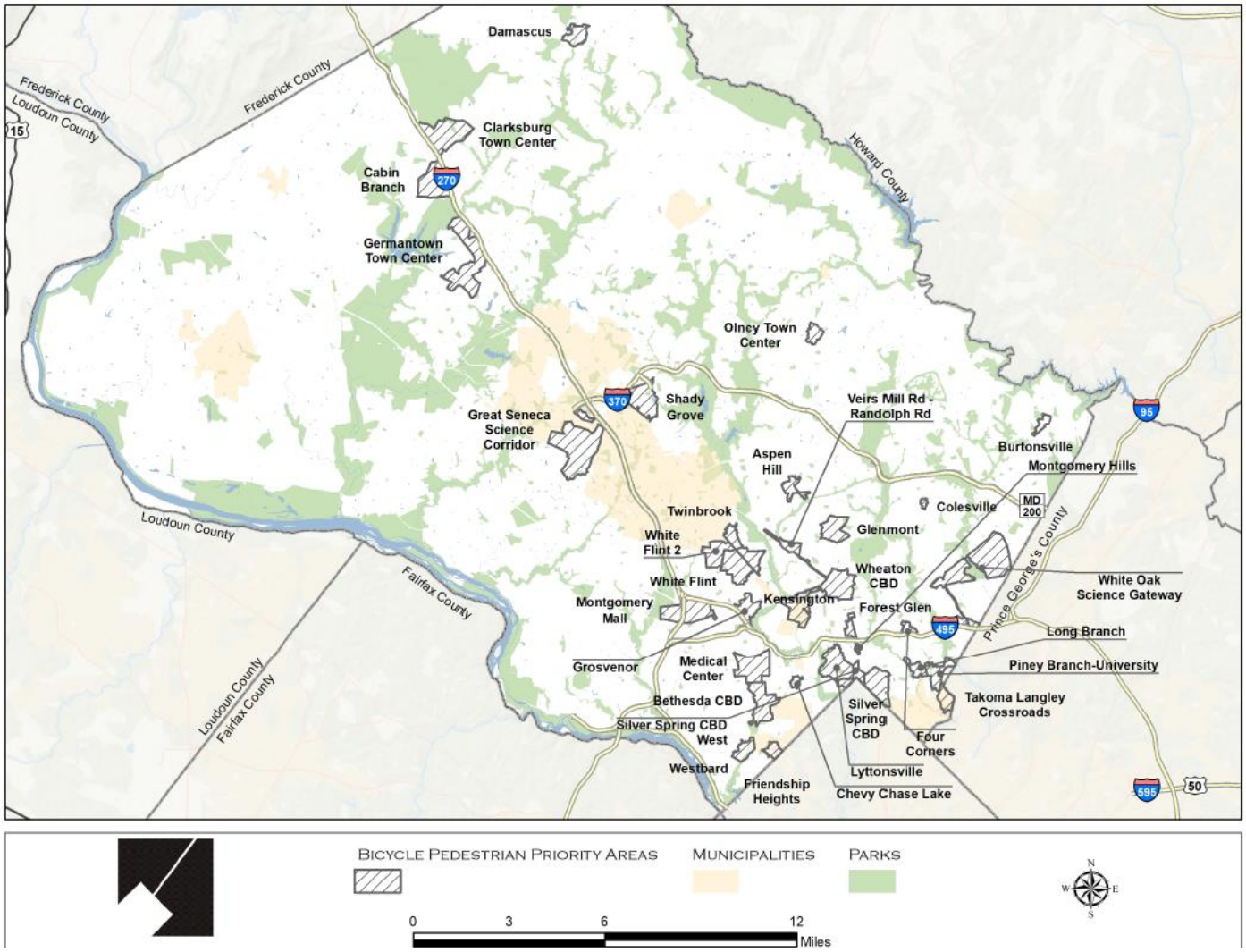
These RCUA and BiPPA designations describe places within the county where the rights-of-way are busiest; not only due to the concentration of bicycle and pedestrian activity, but also due to smaller parcels with multiple connections to utility lines, more closely spaced driveways and intersections, and more overlapping activities for capital improvements and maintenance within both public and private realms.

The identification and implementation of transportation solutions in these RCUAs and BiPPAs, therefore, tend to be the most complex. It is more efficient in these areas for the public sector to implement transportation solutions in a coordinated fashion. Therefore, in RCUAs and BiPPAs where an applicant needs to mitigate an LATR impact, a mitigation payment in lieu of construction will be allowed. This payment is permitted in cases where construction of needed mitigation requires coordination among multiple projects or acquisition of an offsite right-of-way, or results in a disproportionate cost burden for the applicant.

Map 2. Montgomery County Road Code Urban Areas



Map 3. Montgomery County Bicycle Pedestrian Priority Areas



G. Definitions of Modal Adequacy

Congestion is often a reflection of economic activity. In areas with many high-quality travel choices, a focus on reducing traffic congestion is counterproductive. Therefore, greater vehicular traffic congestion is permitted in policy areas with greater transit accessibility and usage, and non-motorized quality of service is prioritized in areas where higher pedestrian and bicyclist volumes are expected. For each type of modal analysis that may be required, these guidelines define the basis for the definition of adequacy (e.g., the 2010 Edition of the Highway Capacity Manual, Pedestrian Level of Comfort score and Bicycle Low-level of Traffic Stress conditions). Applicants are encouraged to use state-of-the-practice analysis and software tools to conduct adequacy analyses and may propose clarifications as warranted as part of a LATR transportation study scoping.

Because the various modes in the transportation system are not isolated, LATR adequacy tests are required for any subdivision estimated to generate 50 or more net new peak-hour weekday person trips. Total future conditions for multi-modal LATR must incorporate existing traffic plus projected traffic generated by background development and site development.

Motor vehicle adequacy is defined by the intersection level of service standards by policy area described in Section IV.A of the guidelines. Red policy areas are exempt from the motor vehicle adequacy test. As described in Table 6, for intersections located within Orange policy areas, the Highway Capacity Manual operational (delay-based) level of service standard applies to all study intersections. For intersections located within Yellow or Green policy areas, the critical lane volume (CLV) level of service standard applies to study intersections with a CLV of 1,350 or less and the Highway Capacity Manual delay-based level of service standard applies to study intersections with a CLV of more than 1,350.

Pedestrian system adequacy is defined by the criteria described in section V.A of the guidelines. The Pedestrian System Adequacy Test consists of three components:

1. **Pedestrian Level of Comfort (PLOC).** Pedestrian system adequacy is defined as providing a "Somewhat Comfortable" (PLOC-2) or "Very Comfortable" (PLOC-1) score on streets and intersections for roads classified as Primary Residential or higher (excluding Controlled Major Highways and Freeways, and their ramps),[2] within a certain walkshed from the site frontage, specified in Table 1. The table also identifies the maximum span of improvement that the applicant must provide beyond the frontage. Specific improvements to be constructed should be identified in consultation with Montgomery Planning and MCDOT.

2. **Street Lighting.** The applicant must evaluate existing street lighting based on MCDOT standards along roadways or paths from the development to destinations within a certain walkshed from the site frontage, specified in Table 1. The table also identifies the maximum span of street lighting that the applicant must provide beyond the frontage. Where standards are not met, the applicant must upgrade the street lighting to meet the applicable standards.

3. **ADA Compliance.** The applicant must fix Americans with Disabilities Act (ADA) noncompliance issues within a certain walkshed from the site frontage equivalent to half the walkshed specified in Table 1. The table also identifies the maximum span of ADA improvements that the applicant must provide beyond the frontage.

[2] Or the equivalent classifications in the Complete Streets Design Guidelines, when approved by the County Council.

The intent of determining the maximum span of improvements required for the three pedestrian system adequacy test components described above is to ensure that these improvements exhibit reasonable and logical limits. The boundary of a typical walkshed may bisect at points located between street intersections, whereas ideally the span of improvements would extend beyond the boundary of the walkshed to the next intersection. Given this circumstance, applicants should consult with Planning Department and MCDOT staff to identify the specific limits of the span of improvements associated with the components of the pedestrian system adequacy test.

Table 1. Pedestrian Adequacy Test Scoping

Peak-Hour Person Trips Generated	Red and Orange Policy Area Walkshed*	Yellow and Green Policy Area Walkshed*
50 – 99	400’	250’
100 – 199	750’	400’
200 – 349	900’	500’
350 or more	1,000’	600’

* The maximum required length of sidewalk and streetlighting improvements beyond the frontage is 4 times the appropriate value in this column. The maximum span required for ADA improvements beyond the frontage is equal to the appropriate value in this column.

Bicycle system adequacy is defined by the criteria described in Section VI.A of the guidelines. In this context, the determination of adequacy is the achievement of a low Level of Traffic Stress (LTS-2) for bicyclists. Bicycle system analysis is based on the following standards and scoping:

For any site generating at least 50 net new weekday peak-hour person trips, conduct an analysis of existing and programmed conditions to ensure low Level of Traffic Stress (LTS-2) conditions on all transportation rights-of-way within a certain distance of the site frontage, specified in Table 2. If current and programmed connections will not create adequate conditions, the applicant must construct sidepaths, separated bike lanes, or trails, consistent with the Bicycle Master Plan, that create or extend LTS-2 conditions up to the specified distance from the site frontage.

Table 2. Bicycle Adequacy Test Scoping

Peak-Hour Person Trips Generated	Red and Orange Policy Areas	Yellow and Green Policy Areas
50 – 99	400’	250’
100 – 199	750’	400’
200 – 349	900’	500’
350 or more	1,000’	600’

Bus transit system adequacy for LATR is defined by the criteria described in Section VII.A of the guidelines. For any site generating at least 50 net new weekday peak-hour person trips in Red, Orange, and Yellow policy areas, conduct an analysis of existing and programmed conditions to ensure that there are bus shelters outfitted with real-time travel information displays and other

standard amenities, along with a safe, efficient, and accessible path between the site and a bus stop, at a certain number of bus stops within a certain distance of the site frontage, specified in Table 3. Where shelters and associated amenities are not provided, an applicant must construct up to the number of shelters and amenities specified in Table 3.

Table 3. Bus Transit Adequacy Test Scoping

Peak-Hour Person Trips Generated	Red and Orange Policy Areas	Yellow Policy Areas
50 – 99	2 shelters within 500’	1 shelter within 500’
100 – 199	2 shelters within 1,000’	2 shelters within 1,000’
200 – 349	3 shelters within 1,300’	2 shelters within 1,300’
350 or more	4 shelters within 1,500’	3 shelters within 1,500’

III. LATR Study Submission

A. Scoping Process

A transportation scoping form[3] must be filed prior to an applicant's development application submittal[4]. The transportation scoping form must show the number of net new weekday **peak-hour person trips** generated by the project's proposed land use. If the proposed development generates fewer than 50 net new weekday peak-hour person trips, the applicant may proceed with a transportation statement. If the proposed development generates 50 or more net new weekday peak-hour person trips, the applicant must coordinate with Planning Department staff to develop a scope for a transportation study. Transportation studies submitted without a staff-approved scoping form will not be accepted.

Planning Department and MCDOT staff will review the applicant's scoping form and provide guidance regarding approved but unbuilt developments, relevant pending applications, study intersection identification, trip distribution, traffic assignment, traffic operations signal timing plan and other information required to complete the study. It is the applicant's responsibility to prepare the initial transportation study scope in accordance with the LATR Guidelines. Planning staff will respond to all scoping requests within 15 working days.

Upon approval of the scoping form, the applicant may proceed with data collection and analysis. A draft transportation study (including supporting Synchro files and signal timing plan information, if applicable) should be submitted in electronic format to Planning Department and MCDOT staff for review. Once staff determine that the application is complete and adequate (no later than 15 working days following submittal), the applicant can include the transportation study as part of the official submittal.[5] Transportation studies submitted directly to the Planning Department without prior coordination with Planning Department staff will result in longer comment periods from SHA and MCDOT.

B. Transportation Study Criteria

Applicants should use the following general criteria and analytical techniques to demonstrate the expected impact on public roadway segments and intersections from the proposed development. The analysis should consider existing traffic, projected background traffic

[3] See https://montgomeryplanning.org/planning/transportation/latr-guidelines/

[4] Development applications requiring an adequate public facility finding must include a transportation study or a transportation statement for review.

[5] At the time of this document's publication, the Planning Department is accepting plan applications electronically using the E-Plans platform (https://montgomeryplanning.org/resources/eplans-applicant-user-guide/)

generated by developments approved and not yet built, and projected traffic generated by the applicant's project.

Planning Department staff may require that projected traffic from nearby pending applications is included in the transportation study if those applications are likely to be approved by the Planning Board before the subject application's projected Planning Board hearing date. Otherwise, the transportation study would have to be updated to include the pending applications that were approved between the transportation study's scoping and the Planning Board hearing date. Transportation studies should also reflect any transportation improvements that will be made by nearby pending projects.

Traffic studies should base their analysis on current and up-to-date motor vehicle, bicycle, and pedestrian counts. Typically, counts older than one calendar year are not accepted. Transportation studies submitted with counts older than one year may need to be revised and updated with new counts. Applicants should refer to the Planning Department's LATR webpage[6] for any updates to this policy in recognition of periodic changes in policy due to extenuating circumstances (such as government shutdowns or the COVID-19 pandemic).

These guidelines retain the application of the critical lane volume (CLV) approach as a screening tool to determine the need for the application of more robust state-of-the-practice traffic analysis tools (such as HCM methodologies) to provide measures that are more readily correlated with traveler experience. In so doing, these guidelines also continue the application of quantitative measures of adequacy for pedestrians, bicyclists and bus transit users. These adequacy measures are described in subsequent sections of this document.

LATR for each mode of travel must be completed for any subdivision that would generate at least 50 net new weekday peak-hour person trips.

The guidelines prescribe the use of context-sensitive trip generation to determine the need for an LATR Study (as contrasted with a transportation study exemption statement). The LATR process utilizes the most recently published vehicle trip generation rates in the Institute of Transportation Engineers (ITE) Trip Generation Manual.

These rates are applied in concert with context-sensitive trip generation adjustment factors associated with each policy area to define site vehicle driver, vehicle passenger, transit and non-motorized person trips, using information provided in Appendices 1a and 1b. Table 4 below describes the application of this process using a hypothetical 100,000 gross-square-foot office building in the Germantown East Policy Area.

[6] https://montgomeryplanning.org/planning/transportation/latr-guidelines/

Table 4. LATR Guidelines Appendix References for Trip Generation			
Appendix	**Title/Purpose**	**Primary Use**	**Example Case**
Table 1a	Institute of Transportation Engineers (ITE) Vehicle Trip Rate Adjustment Factors	Adjust ITE estimate of site-generated vehicle trips	Using the average rates from pages 1260 and 1261 of the 9th Edition of Trip Generation and Table 1a, the site is estimated to generate 156*0.95=148 a.m. peak hour vehicle trips and 149*0.95=142 p.m. peak hour vehicle trips. The a.m. peak hour is the critical peak hour for person-trip generation analysis as the ITE vehicle trip rate is higher for the a.m. peak hour than for the p.m. peak hour.
			The next step is to convert adjusted ITE vehicle trips to policy-area specific total person trips. For the a.m. peak hour, the number of person trips is the number of vehicle trips divided by the Table 1b auto driver mode share (148 / 72.1% = 205). The number of person trips exceeds the threshold of 50, so a quantitative analysis of **all** modes (auto, pedestrian, bicycle and bus transit) is required.

Once the context-sensitive number of person trips generated is established, certain sites may be eligible for further mode shift analysis through the consideration of trip generation characteristics of retail land uses, likelihood of telework, transit proximity, parking management and transportation demand management (TDM) as noted in the following paragraphs.

1. Ancillary Retail

The vehicle trip generation rates published by the Institute of Transportation Engineers (ITE) and the policy area factors in Appendix 1A, address retail site driveway traffic. In most cases, a significant amount of driveway traffic is “pass-by” or “diverted link” traffic; in other words, few of those vehicles are making a separate trip solely to or from the retail land use.

The ITE trip generation processes are adept at addressing this characteristic of mixed-use development for vehicle trips, but not so robust in considering trips made by other modes (particularly in the most urban settings when some of those trips may be made to or from other uses in the same building and may not even require traveling outdoors).

ITE vehicle trip generation rates typically presume a stand-alone retail building with customer parking provided on-site, a characteristic common throughout the county except in more urban areas. Where retail uses are incorporated as an ancillary use within a mixed-use building, these guidelines presume no new person trips are generated where a nominal amount of ancillary ground-floor retail exists in a mixed-use building that is predominantly residential or office.

The presumption that no new person trips are generated applies for up to 15,000 gross square feet of retail space in a building that has least 90 percent of its floor area ratio (FAR) devoted to

non-retail uses, as long as no parking spaces for retail customers are included in the site plan. For sites located within parking lot districts (PLDs), an applicant proposing ground-floor retail with parking requirements achieved through participation in the PLD may assume 2.0 peak hour vehicle trips, 1.0 peak hour pedestrian trips and 1.0 peak hour transit trips for each 1,000 gross square feet of retail space during the PM peak period, with AM peak period rates equal to 25 percent of PM peak period rates.

2. Parking Management

Research indicates that there is a correlation between parking supply and vehicle trip generation, particularly when applied in a supportive parking-pricing environment with alternative transportation options. Applicants may adjust vehicle trip generation rates if, per Section 59.6.2.4 of the County Code, they propose parking ratios lower than the baseline minimums that include specific supportive actions identified to reduce parking demand. No additional actions other than those needed to satisfy Section 59.6.2.4 are required to make this trip generation adjustment.

For residential uses, each 2 percent reduction in parking below the minimum number of spaces yields a 1 percent reduction in vehicle trip generation rates for that use. This relationship is based on the equation in Table 2-9 of the Transportation Research Board's TCRP Report 128, "Effects of TOD on Housing, Parking, and Travel." Applying this equation to a prototypical transit-oriented development (TOD) site with 10 dwelling units per acre, a ratio of 1 parking space per dwelling unit would yield 0.24 peak hour vehicle trips and a ratio of 0.5 parking spaces per dwelling units would yield 0.18 peak hour vehicle trips (in other words, a 50 percent reduction in parking yields a 25 percent reduction in vehicle trips).

For office uses, each 3 percent reduction in parking below the minimum number of spaces yields a 1 percent reduction in vehicle trip generation rates for that use. This relationship is based on the relationships shown in Figure 6-9 of a 2004 report by Lund, Cervero and Wilson for the California Department of Transportation (Caltrans) "Travel Characteristics of Transit Oriented Development in California."[7]

The report shows that in a transit/transportation demand management- rich environment, a similar reduction from 1.0 to 0.5 parking spaces at an office site could be expected to increase transit mode share from 41 percent to 50 percent (which, for simplicity sake, is assumed to equal a reduction in auto mode share from 59 percent to 50 percent). In other words, in this case, a reduction of 50 percent of parking spaces reduces auto trips by about 15 percent or roughly a 3:1 ratio.

[7] https://www.bart.gov/sites/default/files/docs/Travel_of_TOD.pdf#page=115

3. Project-based Transportation Demand Management (TDM) Plans

Applicants wishing to further reduce vehicular impacts through transportation demand management (TDM) programs may propose additional TDM programs and services whose effectiveness will be negotiated with M-NCPPC and MCDOT staff, pivoting from the context-sensitive trip generation rates already incorporated above and with binding elements to be included in a project-based TDM plan.

4. Transportation Study Exemption Statement

Owners and developers of projects that are projected to generate fewer than 50 total net new weekday peak hour person trips need to submit only a transportation study exemption statement. This statement must demonstrate the conditions that justify the exemption.

Information to be provided in a transportation study exemption statement includes:

a. Development project location—planning area and policy area;
b. Proposed nonresidential square footage;
c. Proposed number of dwelling units (single-family or multifamily);
d. Proposed land uses (as defined by the Department of Permitting Services);
e. Estimated number of new and total peak hour person trips generated by the proposed land uses; and
f. Rationale for exemption.

If the project is not exempt, the applicant must prepare a transportation study. Depending on the project size, uses and location, the contents of a transportation study will vary. The applicant and Planning Department staff, in a meeting or through correspondence, will establish a scope for the study using the elements described below. (For zoning and conditional use cases, Planning Department staff may consult with the Hearing Examiner and initiate a meeting with the applicant and staff representing other public agencies (e.g., MCDOT and/or MDSHA) to establish the scope of the traffic analysis.)

5. Temporary Suspension for Bioscience Facilities

The Local Area Transportation Review (provision TL2.6) requirements of the Growth and Infrastructure Policy must not apply to a development or a portion of a development where:

a. the primary use is for bioscience facilities, as defined in Section 52-39 of the County Code; and
b. an application for preliminary plan, site plan, or building permit that would otherwise require a finding of Adequate Public Facilities is approved after January 1, 2021 and before January 1, 2025; and
c. an application for building permit is filed within 3 years after the approval of any required preliminary plan or site plan.

6. Existing Use Trip Credits

If use and occupancy permits for at least 75 percent of the originally approved development were issued more than 12 years before the LATR transportation statement request, the applicant may take credit for existing site trips based on the current LATR trip generation methodology in support of determining the 50-peak-hour person trip threshold. Likewise, if the proposed use will be replacing an existing land use and that land use was occupied for more than 12 years, the applicant may take credit for the existing site trips based on the current LATR trip generation methodology. These existing trips should be reflected in the transportation study as "background" traffic. If an LATR transportation study is required and the 12-year existing trip credit is applicable, the number of signalized intersections in the study will be based on the increased number of net new peak-hour trips rather than the total number of peak-hour trips. In these cases, an LATR transportation study is not required for any expansion that generates five or fewer additional peak-hour person trips.

7. Amendments to Previously Approved Adequate Public Facilities

Projects are limited to the trip threshold established in the APF approval that may be reflected in the approved transportation study. Applications to amend valid APFs may modify the approved land use, trip generation, distribution and assignment without providing a new transportation study provided the amendment does not generate more peak hour trips than the original approval. Amendments that generate more trips than the previous approval must prepare a new transportation study that evaluates the full impact of the proposed development under the effective Growth and Infrastructure Policy.

Transportation studies associated with amendments and APF extensions should use the most current LATR trip generation rates and guidelines for the purposes of trip generation. In accordance with the LATR Guidelines direction to avoid piecemeal development, structures less than 12 years old are considered "new" trips for trip generation purposes and are therefore included in the total number of new trips associated with the amendment application to determine the scope of study and transportation impact of a new development application. In practice, trips associated with the existing use may be considered a component of background trips because these trips will be on the road at the time of data collection.

When requesting an amendment or extension to a valid APF, an applicant may proceed using one of the following options:

a. Retain the originally approved APF and, if necessary, file for an extension or amend the approval to reflect fewer trips or other changes (other than increased trip generation. The extension may require a transportation study based on Planning Staff's review of transportation conditions in the vicinity of the project based on County Code Section 50.4.3.J.7.a.iii.c.

b. Amend the originally approved APF so that new trips are reviewed under the effective Growth and Infrastructure Policy and, if applicable, old trips are retained. Change the development program to remain within the APF trip cap of the originally approved project.
c. Obtain an entirely new APF approval by submitting a new transportation study under the effective Growth and Infrastructure Policy.

C. Contents Required for Completeness

1. Adequacy Determination

A transportation study must consider adequacy of the following elements if the 50 net new weekday peak hour person trip generation threshold is exceeded:

- Quantitative motor vehicle system adequacy analysis;
- Quantitative pedestrian system adequacy analysis;
- Quantitative bicycle system adequacy analysis; and
- Quantitative bus transit system adequacy analysis.

For each modal adequacy analysis required, the study must make a statement that the proposed development, with any required mitigation, will result in a finding of adequate operations for that mode, supported by the analytic processes and information described in the subsequent chapters of these guidelines. In addition, the study should report net new trip estimates in tabular format and provide maps depicting the scope of each modal test required.

2. Transportation Demand Management (TDM) Strategy Statement

If an applicant is proposing trip reduction measures, the study must include:

a. A description of proposed Project-based Transportation Demand Management (TDM) Plan elements that will be approved by the Planning Board, the Board of Appeals (if applicable) and MCDOT. The description must include, at a minimum, the following elements:
   - Vehicle trip reduction goals, including the specific number of peak-hour vehicles to be reduced in both the weekday morning and evening peak periods.
   - Project-based TDM Plan actions and a quantitative assessment of how they will achieve the required vehicle trip reduction goals.
   - Required duration of the Project-based TDM Plan, whether the Project-based TDM Plan will be enforced based on the provision of specified actions (regardless of outcome), measured outcomes (regardless of actions provided) or a combination of both.
   - Measures to be used in enforcement.
   - Suggested methods of monitoring.
   - Security instrument to fund the continuation of the traffic mitigation program for its

remaining term if the applicant defaults.
- Penalties if the vehicle trip reduction goals are not met.

b. Written statements from both MCDOT and Planning Department staffs concurring with the proposed approach to traffic mitigation.

3. LATR Vision Zero Statement

All LATR studies for a site that will generate 50 or more net new weekday peak-hour person trips must develop a Vision Zero Statement. This statement must assess and propose solutions to high injury network and safety issues, review traffic speeds, and describe in detail how safe site access will be provided. With concurrence of the responsible agency, projects must implement or contribute to the implementation of safety countermeasures. The Planning Board must find a nexus to the project's impact and that any countermeasure is proportional to that impact. The County Council may adopt predictive safety analysis as part of this statement, when available. The compoments of of the Vision Zero Statement are described below.

1. Review High Injury Network segments: Document any segments on the High Injury Network (HIN) that are within a certain distance of the site frontage, as specified in Table 5.

a. *HIN Attributes:* Document attributes of the roadway segment(s), including number of lanes, posted speed limit, presence of pedestrian or bicycle infrastructure and crossings, and annual average daily traffic (if available).
b. *HIN Crashes:* Summarize the crashes on the relevant segment(s) within the past five years, noting the severity and mode of crashes. Review the crash attributes and summarize any trends (e.g. collision type, time of day of crashes, contributing factors).
c. *HIN Improvements:* Identify any recent improvements to the segment(s) or if safety improvements for the segment are included in the approved Capital Improvement Program.

2. Assess proximate safety issues: Review the crash history for all segments and crossings within a certain distance of the site frontage, as specified in Table 5.

a. *Crash Summary:* Summarize the crashes within the past five years, noting the overall severity and mode of crashes. For any severe or fatal crashes[8], document the

[8] For definition of crash types see *2017 Montgomery County Vision Zero Data Analysis Report*, Appendix, page 22.

collision type, mode, and whether the crash occurred at an intersection or along a segment.

3. Review traffic speeds: Conduct speed studies within a certain distance from the site frontage, specified in Table 5. Speed studies should be conducted mid-week (Tuesday, Wednesday, or Thursday) for 48 hours on days when school is in session. Locations will be determined by Planning staff in collaboration with MCDOT staff and will prioritize filling in gaps in the inventory of speed studies. Relevant speed studies that have been completed within the past three years may be used to fulfill this requirement if gaps do not remain in the inventory of speed studies.[9]

a. *Observed Speeds:* For each speed study, document the 50th and 85th percentile speed for each day and direction.
b. *10-mile per hour (mph) Pace:* For each speed study, document the range of speed at which the majority of cars are traveling.

4. Describe site access: Summarize the safety issues identified in components 1 through 3 and describe how site circulation promotes safety, outlining how safe access will be provided to the site. Planning staff will note if the applicant is contributing a fee in lieu of constructing a countermeasure. Reference the Vision Zero Community Toolkit (forthcoming) or national best practices and research in outlining the appropriate treatments to address identified safety issues.

a. *High Injury Network:* If applicable, summarize how the project's right-of-way improvements along the HIN will address identified safety issues.
b. *Proximate Safety Issues:* Record how the project's right-of-way improvements within the vicinity of the site will address identified safety issues for motorists, transit riders, bicyclists, and pedestrians.
c. *Traffic Speeds:* If observed 85th percentile speed for any day or direction exceeds the posted speed by 20 mph, summarize speed management improvements that could reduce speeds along the roadway. For example, traffic calming would be warranted on a roadway with a 25 mph posted speed limit if the observed 85th percentile speed is greater than 30 mph.
d. *Site Circulation:* Document how site design promotes bicycle, pedestrian, and motor vehicle occupant safety. For example, limiting vehicle access points and locating and designing parking to reduce conflicts with pedestrians and bicyclists both passing by and visiting the site.

[9] It is anticipated that the formal guidance will require more recent speed studies (within one year).

Table 5. Vision Zero Statement Scoping

Peak-Hour Person Trips Generated	Distance from Site Frontage		Max. Number of Speed Studies	
	Red and Orange Policy Areas	Yellow and Green Policy Areas	Red and Orange Policy Areas	Yellow and Green Policy Areas
50-99	400’	250’	2	1
100-199	750’	400’	4	2
200-349	900’	500’	6	3
350 or more	1,000’	600’	8	4

4. Online Data Submission

The applicant must submit all relevant data via the department’s online data loader for the application to be deemed complete. The applicant will be provided a custom URL during the scoping process which can be used to upload data to be incorporated in the Department’s transportation monitoring database.

D. Review Process

Planning Department staff evaluates transportation studies considering the following elements, described here to ensure consistent review by staff and provide applicants with additional information about how their studies will be analyzed.

To warrant an LATR transportation study, a proposed development must have a measurable transportation impact on a local area. Measurable transportation impact is defined as a development that generates 50 or more total net new weekday peak-hour person trips in the morning (6:30 a.m. to 9:30 a.m.) and/or evening (4:00 p.m. to 7:00 p.m.) peak periods. If the proposal generates fewer than 50 total net new peak hour weekday person trips or is a renovation that will result in no net increase in person trips, a transportation study exemption statement is required instead of a LATR transportation study.

To determine if a development will generate 50 or more total net new peak-hour weekday person trips, Planning Department staff uses the following criteria:

- For retail development, pass-by and diverted trips are included in establishing the 50 net new peak hour person trip threshold for a transportation study and later, for designing site access and circulation. The fact that pass-by and diverted trips are already on the network is reflected in evaluating delay or critical lane volume measurement.
- Planning Department staff will exercise professional judgment in consultation with the applicant to determine the appropriate land area to consider. Parcels that will be

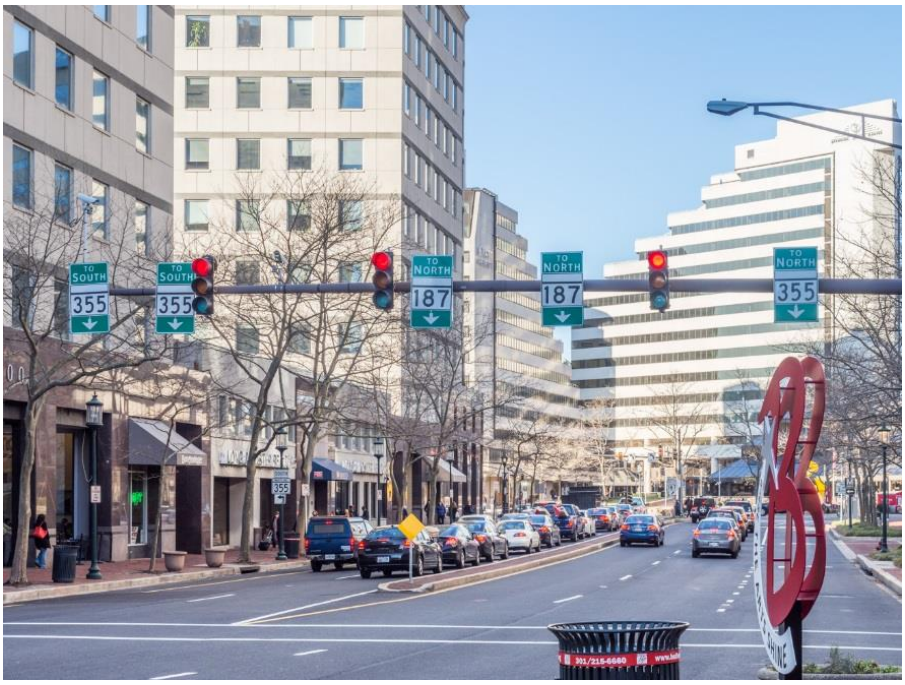
separated by unbuilt roadways remain “land at one location,” but parcels separated by business district streets, arterial roadways, major highways or freeways may cease to be “land at one location” even if in common ownership.

In certain circumstances, Planning Department staff may, in consultation with the applicant, require analysis of traffic conditions during a different three-hour weekday peak period; for example, 6:00 a.m. to 9:00 a.m. (versus the standard 6:30 a.m. to 9:30 a.m.) or 3:30 p.m. to 6:30 p.m. (versus the standard 4:00 p.m. to 7:00 p.m.), to reflect the site’s location or trip-generation characteristics, existing conditions or conditions affecting background or total future conditions traffic. For example, a school where classes end before the start of the evening peak period may warrant analysis of an earlier peak period.

For some specialized land uses, representative trip generation rates may not be available. In such cases, Planning Department staff may request that determining rates be a part of the transportation study, most likely by collecting existing driveway counts at similar specialized land uses. If special rates are to be used, staff must approve them prior to submission of the transportation study. An applicant should not avoid the intent of this requirement by submitting piecemeal applications or approval requests. However, an applicant may submit a plan of subdivision for fewer than 50 net new weekday peak-hour weekday person trips if agreeing in writing that, upon filing future applications, the applicant will comply with the requirements of these guidelines when the total number of site-generated net new weekday peak-hour person trips at one location has reached 50 or more. Then a transportation study will be required to evaluate the impact of the total number of site-generated trips in accordance with the guidelines.

The County Council establishes traffic congestion standards throughout most of Montgomery County (stated in terms of delay levels), which depend on the character of development and the availability of transit options. These standards are developed by policy area and adopted in the Growth and Infrastructure Policy (see Table 6). Planning Department staff maintains an inventory of multi-modal intersection count data collected by MCDOT, SHA and private consultants to provide applicants with a preliminary assessment of conditions in the vicinity of a proposed development.

IV. Motor Vehicle System Adequacy



A. Analysis Procedures and Tools

1. Vehicular Delay

Excepting Red policy areas, each policy area has a particular congestion standard for intersections, which is applied to meet the LATR motor vehicle system adequacy test. These standards and associated mitigation requirements are adopted by the County Council and specified in these guidelines, which are updated as needed to reflect transportation industry standards, local traffic conditions, and Council action. The policy area congestion standards are fixed; they do not change based on the location of the study site. Intersections on the boundary of two policy areas are judged by the congestion standard of the policy area which allows a greater level of congestion.

Congestion is often a reflection of economic activity. In areas with many high-quality travel choices, a focus on reducing traffic congestion is counterproductive. Therefore, greater vehicular traffic congestion is permitted in policy areas with greater transit accessibility and usage, and non-motorized quality of service is prioritized in areas where higher pedestrian and bicyclist volumes are expected. For motor vehicle adequacy, Table 6 shows the intersection level of service standards by policy area. The motor vehicle adequacy test will not be applied in Red policy areas and these areas will not be subject to LATR motor vehicle mitigation requirements. For intersections located within Orange policy areas, the Highway Capacity Manual (HCM) delay-based level of service standard applies to all study intersections. For intersections located within Yellow or Green policy areas, the Critical Lane Volume (CLV) level of service standard applies to study intersections with a CLV of 1,350 or less and the HCM delay-

based level of service standard applies to study intersections with a CLV of more than 1,350. The Planning Board may adopt administrative guidelines that allow use of Highway Capacity Manual 2010 methodologies and other analysis techniques consistent with guidance published by the Transportation Research Board. The steps reflected in this process are depicted in Figure 2.

Motor vehicle mitigation in the Orange, Yellow and Green policy areas is required for any intersection failing the HCM test (i.e., exhibiting delay exceeding the applicable policy area HCM delay standard). However, it is important to emphasize that safety for all roadway users is the top priority. The applicant must mitigate its impact on vehicle delay or down to the applicable policy area standard, whichever is less. In this context, modal mitigation approaches are prioritized for application as follows:

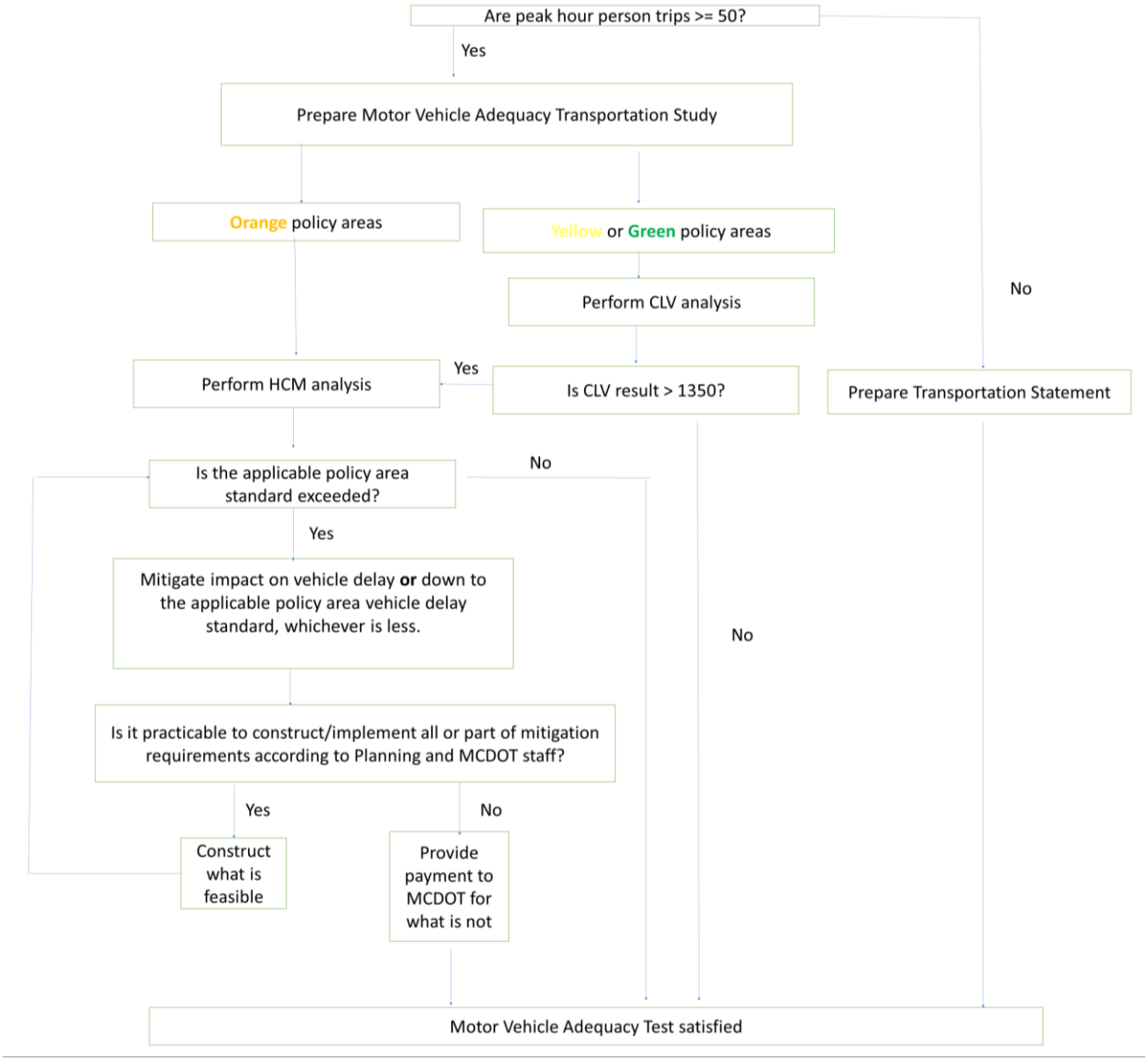
1. Transportation demand management (TDM) approaches to reduce vehicular demand.
2. Traffic operational changes.
3. Roadway traffic capacity improvements, but only if they do not negatively impact safety as determined by the collaborative process described below.

Alternatively, if the Planning Board and MCDOT agree that constructing all or part of this requirement may not be practicable or desirable due to unattainable right-of-way, an existing CIP project, or because it creates conditions that adversely impact safety, an applicant may meet this requirement with a mitigation payment to MCDOT that is reasonably related to MCDOT's estimated cost of designing, administering and constructing the required facilities. These funds must be used by MCDOT for transportation demand management actions, roadway operational changes or roadway capacity improvements within the same policy area, or—for an Orange town center policy area—either in that area or an adjacent one, unless the applicant agrees otherwise.

The scope of the motor vehicle adequacy test is based on the size of the project and the number of peak-hour vehicle trips generated by the project. Each LATR motor vehicle study must examine, at a minimum, the number of signalized intersections identified in Table 7, unless Planning staff affirmatively finds that special circumstances warrant a more limited study.

For stop or yield-controlled intersections, the delay standard applies to the average vehicle delay calculated by the HCM for controlled movements with the inclusion of zero seconds of delay for vehicles that do not stop or yield. For instance, a stop-controlled intersection with 100 vehicles each experiencing 60 seconds of delay and 1,000 mainline vehicles without delay, the average vehicular delay is (1,000*0+100*60)/1,100=5.4 seconds per vehicle.

Figure 2. Local Area Transportation Review Process – Motor Vehicle System Adequacy[10]



[10] Subdivision applications in Red policy areas are exempt from the Motor Vehicle System Adequacy test.

Table 6. Growth and Infrastructure Policy Intersection Congestion Standards			
Policy Area	**HCM Average Vehicle Delay Standard (seconds/vehicle)***	**Critical Lane Volume Congestion Equivalent**	**HCM Volume-to-Capacity Equivalent**
29 Rural East 30 Rural West	41	1,350	0.84
9 Damascus	48	1,400	0.88
6 Clarksburg 14 Germantown East 16 Germantown West 13 Gaithersburg City 21 Montgomery Village/Airpark	51	1,425	0.89
8 Cloverly 23 North Potomac 25 Potomac 24 Olney 26 R&D Village	55	1,450	0.91
10 Derwood 1 Aspen Hill 11 Fairland/Colesville	59	1,475	0.92
7 Clarksburg Town Center 15 Germantown Town Center 27 Rockville City	63	1,500	0.94
4 Burtonsville Town Center 22 North Bethesda	71	1550	0.97
3 Bethesda/Chevy Chase 19 Kensington/Wheaton 33 Silver Spring/Takoma Park 38 White Oak	80	1,600	1.00

* The *2019 Veirs Mill Corridor Master Plan* set the HCM Average Delay Standard at 100 seconds/vehicle at all Veirs Mill Road signalized intersections between the boundaries of the Wheaton CBD Policy Area and the City of Rockville.

These guidelines describe operational analyses for intersections using delay-based performance standards to either reduce average peak hour delay per vehicle below the applicable policy area delay standard identified in the 2020 Growth and Infrastructure Policy **or** in circumstances when traffic generated by existing plus approved but unbuilt development already exceeds the applicable policy area delay standard, maintain average delay per vehicle conditions below or equal to the total future average delay per vehicle. The guidelines describe whether the intersection analysis performance is to be made for an individual intersection or requires a network analysis to address closely spaced intersections operating in tandem.

If an individual intersection is analyzed, the vehicular delay threshold applies to the intersection as a whole, not to individual approaches or turning movements in the intersection. Similarly, if a network of multiple intersections is analyzed, the vehicular delay threshold applies to the network as a whole, not to individual intersections within the network. The focus on average delay is intended to facilitate a focus on management and operations strategies; as the county builds out its roadway network, the emphasis is less on constructing additional automobile capacity and more on finding more efficient means for operating the current network to accommodate changing travel demands through techniques such as signal timing, signing and marking, and vehicle progression.

The derivation of the policy area average vehicular delay thresholds applies a level of service (LOS) equivalency between critical lane volume (CLV) and delay, using LOS/delay thresholds in the Highway Capacity Manual shown in Table 7.

Table 7. Equivalency Between CLV, LOS and Average Vehicle Delay

HCM LOS Threshold / Boundary	Corresponding Average Vehicle Delay per HCM (seconds)	Corresponding CLV Value
A / B	10	1,000
B / C	20	1,150
C / D	35	1,300
D / E	55	1,450
E / F	80	1,600
n/a	120	1,800

2. Critical Lane Volume Intersection Analysis Method

An intersection's ability to carry traffic can be expressed as critical lane volume (CLV), the level of congestion at critical locations with conflicting vehicle movements, usually an intersection. Current CLV standards, where applied, reflect county policy that greater vehicular traffic congestion is permitted in policy areas with greater transit accessibility and use.

For a transportation study, the existing, background and site-generated traffic for identified intersections should be measured against intersection capacity using the critical lane volume method. The analysis should be carried out for the peak hour of both the weekday morning and evening peak periods, and it should use traffic data for non-holiday weekdays and other non-typical occurrences.

The CLV method is generally accepted by most Maryland public agencies, including SHA, MCDOT, cities of Rockville, Gaithersburg and Takoma Park, and Montgomery County Planning Department. The methodology will fit most intersection configurations and can be easily varied for special situations and unusual conditions.

While some assumptions, such as lane use factors (see Step 3 below), may vary between jurisdictions and agencies, the general CLV methodology is consistent. An excellent reference source is SHA's web site: https://www.roads.maryland.gov/ohd2/Traffic%20Impact%20Study%20Guidelines.pdf.

The CLV method can be used at signalized or unsignalized intersections. For unsignalized intersections, a two-phase operation should be assumed. The traffic volumes should be those approaching the intersection as determined in each step of the transportation study (existing, existing plus background and existing plus background plus site).

Applicants should use the following steps to determine the congestion level of an intersection with a simple two-phase signal operation.

Step 1: Determine the signal phasing, number of lanes and total volume of entering turning movements on all intersection approaches and the traffic movements permitted in each lane.

Step 2: Subtract from the total approach volume any right-turn volume that operates continuously throughout the signal cycle (a free-flow right-turn bypass). Also, subtract the left-turn volume if it has an exclusive lane. An exclusive turning lane must be long enough to store all the turning vehicles in a typical signal cycle without overflowing into the adjacent through lanes. Otherwise, none or only a percentage of the turning volume may be subtracted from the total approach volume.

Step 3: Determine the maximum volume per lane for each approach by multiplying the volume calculated in Step 2 by the appropriate lane-use factor selected from Table 8. (Note: Do not count lanes established for exclusive use such as right- or left-turn storage lanes. The lane use factor for a single exclusive use lane is 1.00. Consult with Planning Department staff and MCDOT regarding any overlap signal phasing.)

Table 8. Montgomery County Lane Use Factors

Number of Approach Lanes	Lane Use Factor*
1	1.00
2	0.53
3	0.37
4	0.30
5	0.25

* Based on local observed data and the 2010 Edition of the Highway Capacity Manual.

Step 4: Select the maximum volume per lane in one direction (e.g., northbound) and add it to the opposing (e.g., southbound) left turn volume.

Step 5: Repeat Step 4 by selecting the maximum volume per lane in the opposite direction (e.g., southbound) and the opposing (e.g., northbound) left-turn volume.

Step 6: The higher total of Step 4 or Step 5 is the critical volume for phase one (e.g., north-south).

Step 7: Repeat Steps 4 through 6 for phase two (e.g., east-west).

Step 8: Add the critical lane volumes for the two phases to determine the CLV for the intersection. At some intersections, two opposing flows may move on separate phases. For these cases, each opposing phase becomes a part of the intersection's CLV (see Table 9).

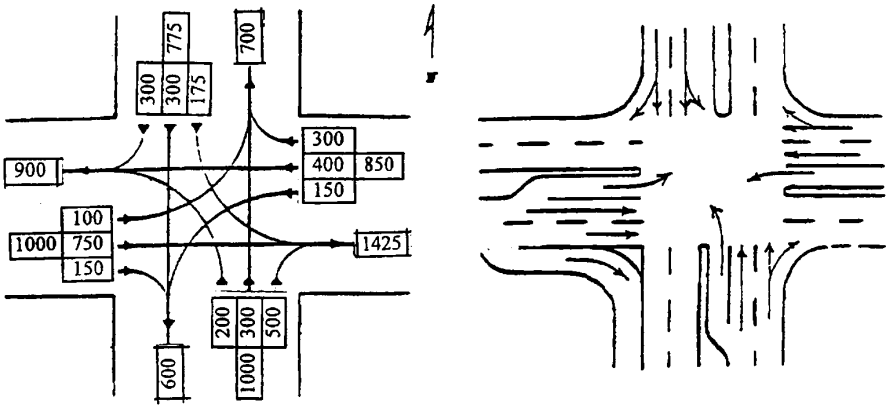
An example of a CLV calculation for a hypothetical intersection is provided in Table 9 and depicted in Figure 3 below.

Table 9. Critical Lane Volume Calculations

Direction from the:	Lane approach volume		Critical lane use factor		Approach volume		Opposing lefts		Lane volume per approach
north	775[a]	x	0.53	=	411	+	200	=	611
south	800[b]	x	0.53	=	424	+	175	=	599
	500	x	1.00	=	500	+	175	=	675[e]
east	700[c]	x	0.53	=	371	+	100	=	471
west	750[d]	x	0.53	=	398	+	150	=	548[e]

[a] Approach volumes are the sum of through, right, and left turn movements in two lanes.
[b] For a heavy right turn, evaluate worst of rights in one lane or through and rights in two lanes
[c] Approach volumes are the sum of through and right turn movements in two lanes.
[d] Approach volumes are through only because of free right and separate left.
[e] Intersection critical lane volume = higher sum = 675 + 548 = 1,223.

Figure 3. Example Intersection Turning Movements and Lane Configurations



TURNING MOVEMENT VOLUMES **LANE CONFIGURATIONS**

The following conditions should be observed where applicable.

- Right turn overlaps can be assumed where an exclusive right turn lane exists, except in cases when an approach is signed for a "no turn on red" condition.

- The critical lane volume (CLV) for five-leg intersections should be addressed according to the individual signal phases identified in the field.
- In cases where existing pedestrian crossing time Manual on Unified Traffic Control Devices (MUTCD) criteria are not met, applicants must inform MCDOT, request that they revise the signal timing, and include this revision in the pedestrian statement.
- Crossing distances are to be measured from the curb to the curbside edge of the far motor vehicle or bicycle travel lane (not curb to curb).
- "Desired times" are to be determined by dividing the crossing distance by 3.5 feet per second and then subtracting the total clearance time for that associated phase, as per the Manual on Uniform Traffic Control Devices.

3. Isolated Intersection Delay

Vehicular delay can be considered for isolated intersections where the intersection operations can fairly be assessed independent of upstream or downstream traffic flow conditions. In such cases, the adequacy of the transportation system for intersections is based on the correlation between intersection level of service and vehicular delay as described in the *2010 Highway Capacity Manual* and shown in Table 6. Adequacy is achieved when the average intersection vehicle delay in the total future with mitigation condition does not exceed either the applicable congestion standard shown in Table 6 or average intersection delay in the background condition, whichever is higher.

4. Network Delay

For study intersections where the average intersection vehicle delay is greater than 80 seconds in existing, background or total future conditions, and either:

a. the intersection is located on a congested roadway with a travel time index greater than 2.0 as documented by monitoring reports[11] **or**
b. the intersection is located in close proximity, within 600 feet, of another traffic signal.

A more robust network operations analysis approach should be applied using micro-simulation tools (such as Synchro, SimTraffic, CORSIM and VISSIM). Additional guidance on micro-

[11] Relevant monitoring reports include the latest edition of the MWCOG Congestion Management Report, MDSHA State Highway Mobility Report and the Montgomery County Travel Monitoring Report (formerly called the Mobility Assessment Report). Applicants should consult with Planning Department staff regarding the appropriate reference to use.

simulation parameters is available from Planning Department staff and is provided in the Virginia Department of Transportation (VDOT) Traffic Analysis Tools Guidebook[12].

B. Determining Background and Total Future Conditions

Applicants should use the following general criteria and analytical techniques to demonstrate the expected impact on public roadway intersections by the proposed development. The analysis should consider existing traffic, background traffic generated by developments approved and not yet built, and projected traffic generated by the applicant's project.

Planning Department staff may require that traffic from nearby pending applications is included in the transportation study if those applications are likely to be approved by the Planning Board before the subject application's projected Planning Board hearing date. Otherwise, the transportation study would have to be updated to include the pending applications that were approved between the transportation study's scoping and the Planning Board hearing date. Traffic studies should also reflect any traffic improvements that will be made by nearby projects.

1. Study Intersections

The number of intersections included will be based on the projected trips generated by the development under consideration. As shown in Table 10, the number of signalized intersections and significant non-signalized intersections in each direction is based on the maximum number of new weekday peak hour vehicle trips generated by the proposed land uses, unless Planning Department staff in consultation with MCDOT, SHA and municipalities, if appropriate, finds that special circumstances warrant a more limited study.

Planning Department staff, in cooperation with the applicant, will use judgment and experience in deciding the significant intersections to be studied. For example, the ramps and termini of future interchanges will be treated as signalized intersections. The county's central business districts (CBDs), Metro station policy areas (MSPAs) and Purple Line Station policy areas have more closely-spaced intersections. Accordingly, not every signalized intersection should be studied and, as a result, the study may cover a larger area. Site access driveways are not included in the first ring of intersections.

[12] http://www.virginiadot.org/business/resources/traffic_engineering/VDOT_Traffic_Operations_Analysis_Tool_GuidebookV1.1-August2013.pdf

Table 10. Intersections to be Included in a Transportation Study	
Weekday Peak Hour Site Vehicle Trips	**Minimum Number of Intersections in Each Direction**
< 250	1
250 – 749	2
750 – 1,249	3
1,250 – 1,749	4
1,750 – 2,249	5
2,250 – 2,749	6
>2,749	7
The term "each direction" applies to every study intersection. For example, in a hypothetical grid, the first ring from the site access point or off site PLD garage, if applicable, would include four intersections. The second ring would include not only the next four intersections along the streets serving the site, but also the four intersections with cross streets encountered in the first ring. As the number of intersections in each direction grows linearly from one to five, the number of total study area intersections grows at a greater rate.	

When determining the intersections to be studied, Planning Department staff will also consider:

- Geographic boundaries such as rivers, major streams, parks, interstate routes, railroads;
- Political boundaries, although intersections located within the cities of Rockville and Gaithersburg where the Planning Board does not have subdivision authority, will be included in the transportation study and the studies will be shared with nearby incorporated cities;[13]
- Contiguous land under common ownership;
- Extent of diverted and pass-by trips; and
- Functional classification of roadways, for example, a six-lane major highway.

A site may generate a number of peak hour vehicle trips that is projected to increase the critical lane volume through an intersection by fewer than five total CLV for the entire intersection. In this situation, the applicant is required to improve another intersection for the same project and/or is participating in a traffic mitigation program. In such a case, the intersection does not need to be analyzed in the transportation study, even if it would otherwise be identified as appropriate to study. However, CLV analyses must be submitted in addition to any necessary HCM delay analyses to demonstrate applicability, if these conditions are intended to be applied to the transportation study.

[13] In such cases, the coordination of any new proposed intersection improvements shall be in accordance with the memorandum of understanding provided in Appendix 3.

Applicants may develop a trip distribution and an assignment pattern before the study scoping process and work with Planning Department staff to determine which intersections don't require full study. This process will be documented in the scoping correspondence.

C. Contents Required for Completeness

A motor vehicle transportation study must consider the following elements:

1. Average vehicle delay or critical lane volume (CLV) at intersections;[14]
2. Approved but unbuilt development;
3. Existing intersection turning movement counts and CLV or average vehicle delay calculations;[15]
4. Trip generation, directional distribution and trip assignment;
5. Mode split assumptions;
6. CIP and CTP improvements;
7. Circulation and safety for high transportation impact venues, including gap analysis;
8. Land use and size;
9. Queuing/delay analysis (if applicable);
10. Pedestrian and bicycle impacts;
11. Travel safety impacts;
12. Improvement and mitigation options; and
13. Project-based TDM Plan (if needed).

Elements 1 through 4 are described below.

1. Average Vehicle Delay or CLV at Intersections

See the discussion above provided in Section IV.A.

2. Approved but Unbuilt Development

As a general guideline, background traffic from approved but unbuilt developments will be in the same geographic area as the intersections to be studied if that background development is estimated to contribute at least 5 CLV. If the background traffic is generated from a large, staged development, the transportation study and its review will also be staged. As noted

[14] Intersections located within Red policy areas are exempt from this requirement. For intersections located within policy areas categorized as Orange, Highway Capacity Manual (HCM) delay-based intersection level of service standards apply to all study intersections. For intersections located within policy areas categorized as Yellow or Green, the critical lane volume (CLV) level of service standard applies to study intersections with a CLV of 1,350 or less and the HCM delay-based intersection level-of-service standard applies to study intersections with a CLV of more than 1,350.

[15] Intersections within Red policy areas are exempt from this requirement.

above, background traffic data should also include effective trip mitigation programs or uncompleted physical improvements that have been required of nearby developments. In appropriate cases, Planning Department staff may require that traffic from nearby unapproved applications or constructed buildings with unusually high vacancy rates also be included in the transportation study.

3. Existing Intersection Turning Movement Counts

Generally, intersection turning movement counts are acceptable when they are less than one year old at the time a transportation study is submitted. Traffic counts should not be conducted according to the following:

- On a Monday or Friday;
- During summer months or when public schools are not in session;
- On federal, state or county holidays;
- On the day before or after federal holidays;
- During the last two weeks of December and the first week of January or when a major incident or event results in significantly different traffic volumes and patterns;
- When weather or other conditions have disrupted normal daily traffic; and
- When federal, state or county government employees have options to telework due to weather conditions.

For special circumstances, such as summer camps, non-summer or summer traffic counts, the highest counts will be used in the transportation study.

Planning Department staff will compare traffic counts against independent sources, including older traffic counts at the same location or nearby locations to review new traffic counts for reasonableness and may require a location be re-counted if a notable discrepancy exists among sources.

4. Trip Generation, Directional Distribution, Directional Split, and Trip Assignment

Trip Generation

Trips projected to be generated by the proposed development and background traffic should be determined in accordance with the latest edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual and the Trip Generation Handbook. Guidance for calculating trip equations or rates, as well as whether to use rates or equations, from land uses or zoning classifications can be obtained from these documents, as can guidance regarding pass-by, diverted and internal trip capture rates.

The trip generation results derived from the ITE documents are refined using context-sensitive adjustment factors provided in Appendix Table 1A. Developments that generate less than five peak hour background vehicle trips (i.e., subdivisions of four or fewer single-family detached

houses) are not generally included, unless located at a critical analyzed intersection, since tracking those trips is not pragmatic.

Planning Department staff is authorized to make minor technical changes to Appendix Table 1A to reflect new information or to correct errors. Applicants should check with staff to ensure they are using the latest version of this Appendix.

In some cases, adjusting the trips derived from the process described above may be appropriate. For example, the effect of pass by and diverted trips for retail, including fast food restaurants, child day care centers and automobile filling stations; and the total trips from mixed uses, such as office and retail, will be considered on a case-by-case basis, using the best available information. Deviations may also be appropriate for a particular site. Appropriate rates for these sites could be based on traffic counts of comparable facilities of vehicles both entering and leaving those sites, preferably in the county, and will be considered by Planning staff.

Directional Distribution

Planning Department staff provides applicants with guidance pertaining to the directional distribution of background and site traffic generated by office and residential uses from the latest edition of the Trip Distribution and Traffic Assignment Guidelines (see Appendix 2). The distribution of trips entering and leaving the proposed development will be determined based on the relative location of other traffic generators, including background development, employment centers, commercial centers, regional or area shopping centers, transportation terminals or other trip table information provided by staff. For land uses not covered in ITE documents, distribution should be developed in consultation with Planning Department staff.

Directional Split

The directional split is the percentage of the trips entering and leaving the site during the peak hour and the direction in which those trips are traveling. Refer to the latest edition of ITE's Trip Generation Manual for directional split guidance.

Trip Assignment

Trip assignment is an estimate of the impact of future traffic on the nearby road network. It tends to be less accurate farther from the origin or destination of travel. The assignment factors will be determined in consultation with Planning Department staff and applied to the generated trips. The resulting volumes will be assigned to the nearby road network. Generated trips, background traffic and existing traffic will be combined to determine the adequacy of transportation facilities. Trip assignment will be extended to the nearest major intersection, or intersections, in consultation with Planning Department staff.

If trip assignment affects an intersection with a CLV of 2,000 or average vehicle delay of 150 seconds, diverting estimated traffic to alternate routes may be considered. Diversions will be based on feasible alternatives and should create a balance that reflects the project's traffic impacts on both primary and alternate routes, and without excessively burdening local

residential streets. Impacts on primary and alternate intersections must be mitigated in accordance with the policy area congestion standards. Staff, in consultation with the applicant, SHA and MCDOT, will resolve these cases individually before presentation to the Planning Board.

D. Traffic Mitigation Objectives and Approaches

See the discussion provided in **Section II.F Mitigation Priorities**.

The Planning Board may permit an applicant to provide fewer roadway improvements or less traffic mitigation in exchange for providing non-auto transportation facilities that will enhance pedestrian safety or encourage non-auto mode choices.

Such facilities must be implemented to reduce the congestion levels at intersections that exceed the congestion standard and where an improvement need has been identified. Trip distribution and assignment assumptions in the LATR Transportation Study are key factors in determining local intersection impacts and the level of trip mitigation required.

In determining the adequacy of improvements, the Planning Board must balance the environmental and community impacts of reducing congestion as well as the safe and efficient accommodation of pedestrians, bicyclists and transit patrons. Periodic monitoring may or may not be required of non-auto transportation facilities.

Non-auto facilities to mitigate congestion may include bikeshare stations (in county-designated expansion areas), sidewalks, side-paths, trails, separated bike lanes, Super Shelters, bus shelters and benches, bike racks and lockers, and static or real time transit information signs, described in more detail below.

Facilities such as sidewalks, bike paths, pedestrian refuge islands, accessible or countdown pedestrian signals, and curb ramps must be constructed off-site (i.e. across center line of adjacent roadway, outside of extension of lot lines) and should provide safe access from the proposed or existing development to any of the following uses:

- Rail or bus transit stations or stops.
- Public facilities (school, library, park, post office, etc.).
- Recreation centers.
- Retail centers that employ 20 or more persons at any time.
- Housing developments of 27 or more single-family detached units.
- Office centers that employ 100 or more persons.
- Existing sidewalks, trails or sidepaths.
- Adjacent private amenity space (sitting area, theater, community center).

Accessible pedestrian signals (for the visually-impaired), retrofitting existing traffic signals with countdown lights and reconstructing existing substandard curb ramps (to current ADA guidelines) should be allowed as optional facilities.

These features must be within one-quarter mile of the edge of the proposed development and must be located off-site. Planning staff will determine the eligibility of off-site improvements. For transit stations or stops, the frequency of transit service must be at intervals of 20 minutes or less during the weekday morning and evening peak periods. Appropriate new bikeway segments can be found in the Bicycle Master Plan or in the applicable master or sector plan. The Bicycle Master Plan prioritizes bikeways using a system of tiers.

The monetized value of the non-auto facilities is $16,000 per vehicle trip, up to a maximum of 100 vehicle trips. For instance, the provision of a $160,000 capital project can be used to reduce a site's trip generation by 10 vehicle trips.[16]

[16] Applies only to trip mitigation requirements, not frontage improvement requirements.

V. Pedestrian System Adequacy

A. Analysis Procedures and Tools

Pedestrian System Adequacy Test consists of three components:

1. **Pedestrian Level of Comfort (PLOC).** Pedestrian system adequacy is defined as providing a "Somewhat Comfortable" (PLOC-2) or "Very Comfortable" (PLOC-1) score on streets and intersections for roads classified as Primary Residential or higher (excluding Controlled Major Highways and Freeways, and their ramps),[17] within a certain walkshed from the site frontage, specified in Table 11. The table also identifies the maximum linear amount of improvement that the applicant must provide beyond the frontage. Specific improvements to be constructed should be identified in consultation with Montgomery Planning and MCDOT.

2. **Street Lighting.** The applicant must evaluate existing street lighting based on MCDOT standards along roadways or paths from the development to destinations within a certain walkshed from the site frontage, specified in Table 11. The table also identifies the maximum distance beyond the frontage that the applicant must provide streetlighting. Where standards are not met, the developer must upgrade the street lighting to meet the applicable standards.

[17] Or the equivalent classifications in the Complete Streets Design Guidelines, when approved by the County Council.

3. **ADA Compliance.** The applicant must fix Americans with Disabilities Act (ADA) noncompliance issues within a certain walkshed from the site frontage equivalent to half the walkshed specified in Table 11. The table also identifies the maximum span of ADA improvements that the applicant must provide beyond the frontage.

   The best way to determine if a curb ramp is accessible is to survey it to determine the extent to which it complies with ADA accessibility requirements. Instruction on how to conduct these surveys are provided in the ADA Tool Kit.[18] This tool kit includes instructions on how to survey curb ramps for compliance with the ADA Standards and a Curb Ramps Survey form for use in conducting the surveys.

   The instructions, which are located in Appendix 1 of the ADA Tool Kit, are keyed to the Curb Ramps Survey form, which is located in Appendix 2 of the ADA Tool Kit. This information provides an explanation of how to obtain the information needed to answer each question on the survey form. The instructions also include photographs and illustrations showing how and where to take measurements. The Curb Ramps Survey form and instructions will help applicants identify the most common accessibility problems with curb ramps, but they will not necessarily identify all problems.

Table 11. Pedestrian Adequacy Test Scoping

Peak-Hour Person Trips Generated	Red and Orange Policy Area Walkshed*	Yellow and Green Policy Area Walkshed*
50 – 99	400’	250’
100 – 199	750’	400’
200 – 349	900’	500’
350 or more	1,000’	600’

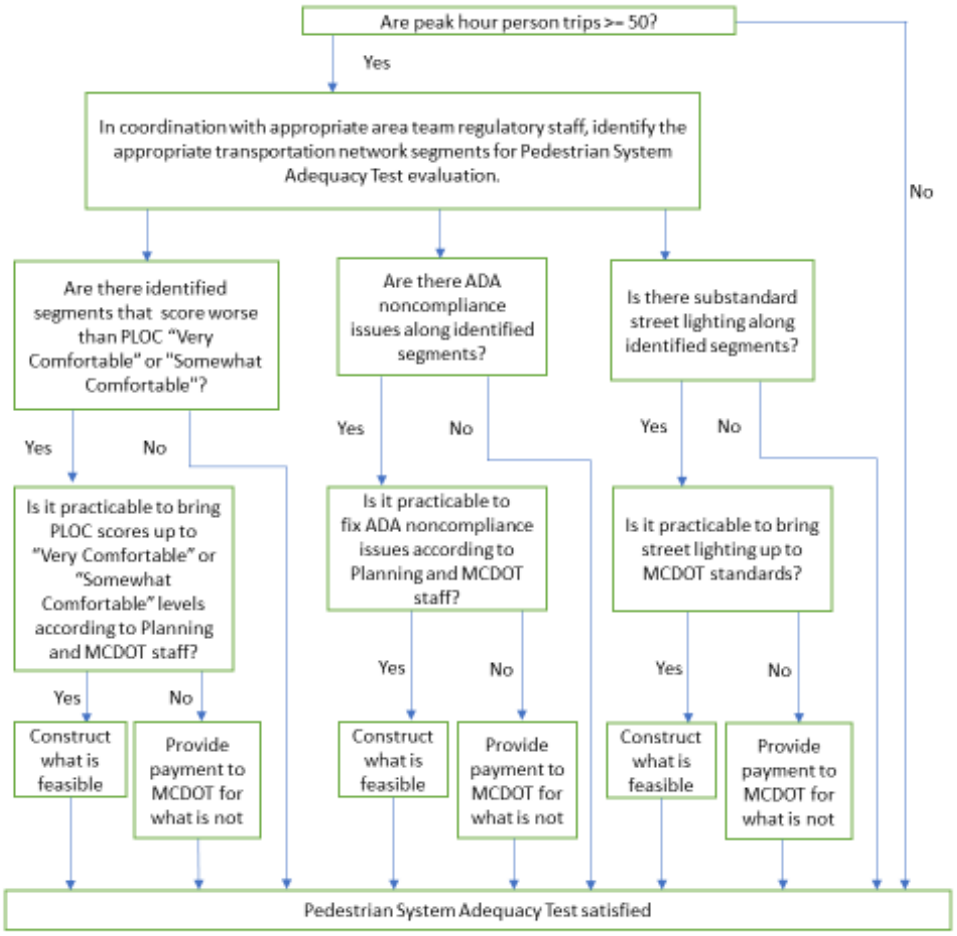
* The maximum required length of sidewalk and streetlighting improvements beyond the frontage is 4 times the appropriate value in this column. The maximum span required for ADA improvements beyond the frontage is equal to the appropriate value in this column.

It should be noted that the pedestrian system adequacy test sets a maximum requirement for sidewalks, streetlighting and ADA improvements because, unlike bicycle system adequacy test that limits improvements to the bikeways in the Bicycle Master Plan, the Pedestrian Master Plan will not specify particular sidewalk improvements on particular streets and roads. The applicant should consult with Planning Department staff to confirm the span of pedestrian improvements required. It should also be noted that the pedestrian system adequacy test does not require pedestrian improvements on secondary or tertiary residential streets nor at ramps to and from freeway or controlled major highway interchanges, where the County has no jurisdiction.

[18] https://www.ada.gov/pcatoolkit/toolkitmain.htm

Alternatively, if the Planning Board and MCDOT agree that constructing all or part of these requirements may not be practicable due to unattainable right-of-way, an existing CIP project, other operational conditions outside the applicant's control, or otherwise not considered practicable by the Planning Board and MCDOT, an applicant may meet this requirement with a mitigation payment to MCDOT that is reasonably related to MCDOT's estimated cost of designing, administering and constructing the required facilities. These funds must be used by MCDOT in the construction of other pedestrian system improvements within the same policy area, or—for a Red policy area or an Orange town center policy area—either in that area or an adjacent one, unless the applicant agrees otherwise.

Figure 4. Local Area Transportation Review Process – Pedestrian System Adequacy



B. Determining Background and Total Future Conditions

The assessment of pedestrian level of comfort does not require identifying or forecasting any pedestrian travel demand beyond the extent of defining the need for a pedestrian system adequacy determination. The assessment of adequacy is made fully in accordance with the criteria and procedures described in Section V.A based on existing conditions and pedestrian system improvements funded for construction within the six-year CIP or CTP.

C. Contents Required for Completeness

Pedestrian Network Attribute Verification: The Planning Department has created the interactive pedestrian level of comfort validation application. This application must be used to validate the attributes needed to calculate the county's pedestrian level of comfort database. This validation process is a requirement of the pedestrian adequacy test. Applicants will be provided a customized link that will provide access to the validation application and the roadway attributes that are required to be validated. The applicant is expected to use this application in the field for validation. The utilization of tablets with GPS and internet connectivity is advised.

This application allows users to visualize the varying comfort of the county's sidewalks, pathways, trails and street crossings for pedestrians. Users can pan and zoom around the county map, clicking on different colored pathways and crossing segments to learn about their scoring based on current conditions.

Each segment of the pedestrian network is rated from "Unacceptable" at the low end up to "Very Comfortable" at the high end. The scoring accounts for different aspects of the pedestrian experience, including pathway width, the width of buffers between pedestrian pathways and roads, posted speed limit, presence of on-street parking or a separated bike lane and other conditions.

To understand the potential effect of the pedestrian adequacy test, it is important to have a thorough understanding of the Pedestrian Level of Comfort (PLOC) methodology. A detailed description of the methodology is provided on the Department's LATR webpage.[19]

[19] PLOC Methodology 3 (montgomeryplanning.org)

VI. Bicycle System Adequacy

A. Analysis, Procedures and Tools

Bicycle system adequacy is defined as providing a low Level of Traffic Stress (LTS-2) for bicyclists. Bicycle system analysis will be based on the following standards and scoping:

For any site generating at least 50 peak-hour person trips, conduct an analysis of existing and programmed conditions to ensure low Level of Traffic Stress (LTS-2) conditions on all transportation rights-of-way within a certain distance of the site frontage, specified in Table 12. If current and programmed connections will not create adequate conditions, the applicant must construct sidepaths, separated bike lanes, or trails, consistent with the Bicycle Master Plan, that create or extend LTS-2 conditions up to the specified distance from the site frontage.

Table 12. Bicycle Adequacy Test Scoping

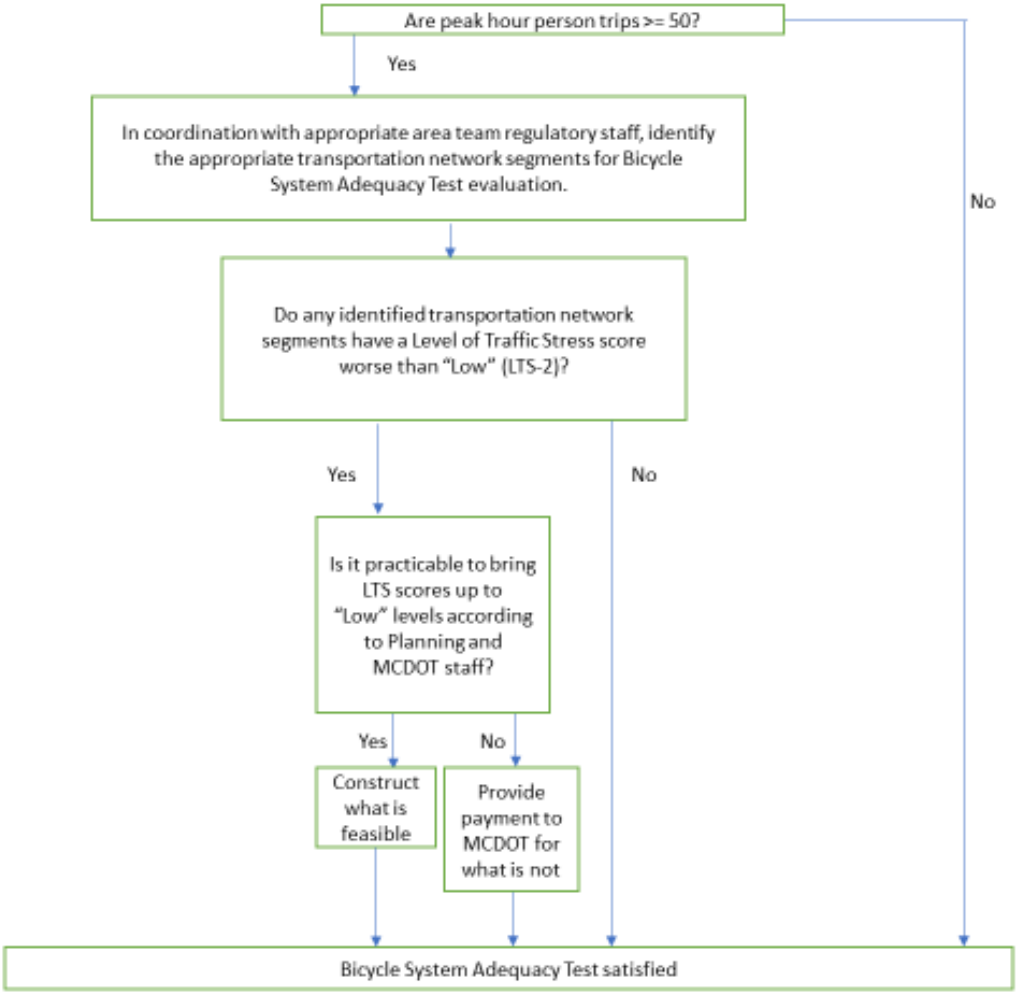
Peak-Hour Person Trips Generated	Red and Orange Policy Areas	Yellow and Green Policy Areas
50 – 99	400’	250’
100 – 199	750’	400’
200 – 349	900’	500’
350 or more	1,000’	600’

Alternatively, if the Planning Board and MCDOT agree that constructing all or part of this requirement may not be practicable due to undesirable transitions, unattainable right-of-way, or an existing CIP project, an applicant may meet this requirement with a mitigation payment to MCDOT that is reasonably related to MCDOT’s estimated cost of designing, administering and constructing the required facilities. These funds must be used by MCDOT in the construction of other LTS-1 or LTS-2 bicycle system improvements within the same policy area, or—for a Red policy area or an Orange town center policy area—either in that area or an adjacent one, unless the applicant agrees otherwise.

The adequacy standards for bicyclists are designed to be synchronized with the development and implementation of the Bicycle Master Plan. The concept of level of traffic stress for bicyclists elegantly evaluates network connectivity for bicyclists, recognizing that different roadways will be, or can be redesigned to be, comfortable for bicyclists of varying skill levels and that not all roadways will necessarily accommodate all levels of bicyclists with a high degree of comfort. By considering a network approach to bicycling, an appropriate level of accommodation for bicyclists can be established.

This process is depicted in Figure 5.

Figure 5. Local Area Transportation Review Process – Bicycle System Adequacy



B. Determining Background and Total Future Conditions

The assessment of bicycle level of traffic stress does not require identifying or forecasting any bicycle travel demand beyond the extent of defining the need for a bicycle system adequacy determination. The

assessment of adequacy is made fully on the degree to which the site is connected to a low Level of Traffic Stress network based on existing conditions and bicycle system improvements funded for construction within the six-year CIP or CTP.

C. Contents Required for Completeness

Bicyclist Counts: Bicyclists will be recorded as turn movements.

Bicycle Network Attribute Verification: The Planning Department has created the interactive bicycle level of traffic stress validation application. This application must be used to validate the accuracy of the county's bicycle level of traffic stress database. This validation process is a requirement of the bicycle system adequacy test. Applicants will be provided a customized link that will provide access to the validation application and the roadway attributes that are required to be validated. The applicant is expected to use this application in the field for validation. The utilization of tablets with GPS and internet connectivity is advised. This application allows users to visualize the varying comfort of the county's sidewalks, pathways, trails and street crossings for bicyclists. Users can pan and zoom around the county map, clicking on different colored pathways and crossing segments to learn about their scoring based on current conditions. Each segment of the bicycle network is rated from "Very Low" at the low end up to "High" at the high end. The scoring accounts for different aspects of the bicycling experience, including pathway width, the width of buffers between pedestrian pathways and roads, posted speed limit, presence of on-street parking or a separated bike lane and other conditions. To understand the potential effect of the bicycle adequacy test, it is important to have a thorough understanding of the Bicycle Level of Traffic Stress (LTS) methodology. A detailed description of the methodology is provided on the Department's LATR webpage.[20]

[20] Bicycle-Level-of-Traffic-Stress-Methodology-Version-1.1.pdf (montgomeryplanning.org)

VII. Bus Transit System Adequacy

A. Analysis Procedures and Tools

For any site generating at least 50 net new weekday peak-hour person trips in Red, Orange, and Yellow policy areas, bus transit system adequacy for LATR is determined by the conduct an analysis of existing and programmed conditions to ensure that there are bus shelters outfitted with real-time travel information displays and other standard amenities (including trash receptacles, seating, overhead shelter and USB outlets), along with a safe, efficient, and accessible path between the site and a bus stop, at a certain number of bus stops within a certain distance of the site frontage, specified in Table 13. Where shelters and associated amenities are not provided, an applicant must construct up to the number of shelters and amenities specified in Table 13. **Development applications located within Green policy areas are exempt from the bus transit adequacy test.**

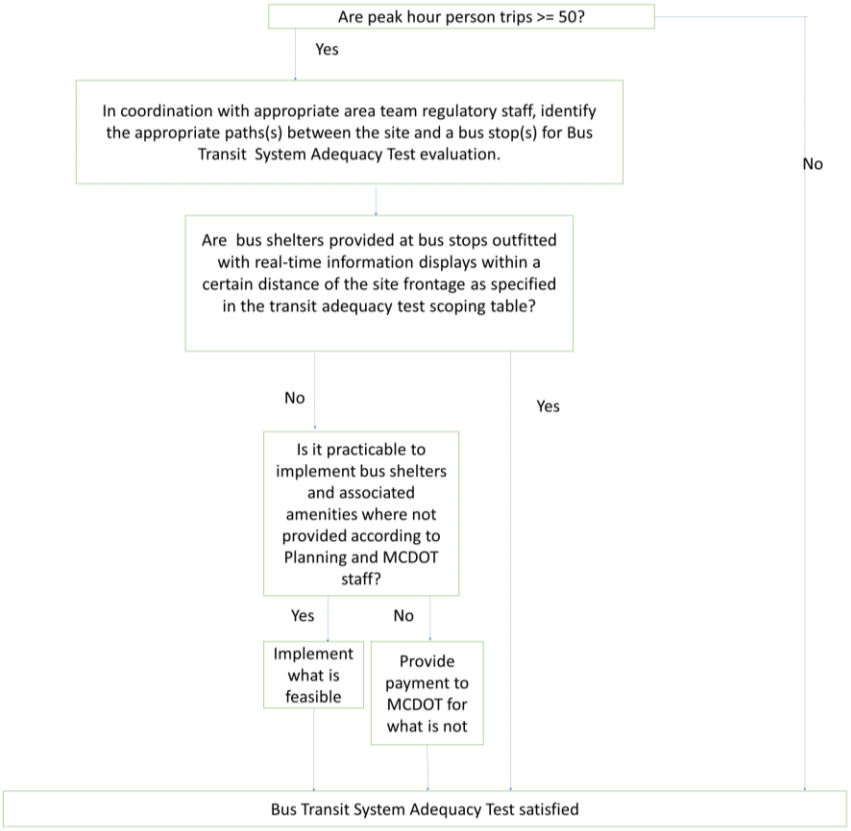
Table 13. Bus Transit Adequacy Test Scoping

Peak-Hour Person Trips Generated	Red and Orange Policy Areas	Yellow Policy Areas
50 – 99	2 shelters within 500’	1 shelter within 500’
100 – 199	2 shelters within 1,000’	2 shelters within 1,000’
200 – 349	3 shelters within 1,300’	2 shelters within 1,300’
350 or more	4 shelters within 1,500’	3 shelters within 1,500’

Alternatively, if the Planning Board and MCDOT agree that constructing all or part of this requirement may not be practicable due to undesirable transitions, unattainable right-of way, or an existing CIP project, an applicant may meet this requirement with a mitigation payment to MCDOT that is reasonably related to MCDOT’s estimated cost of designing, administering and

constructing the required facilities. These funds must be used by MCDOT in the construction of other bus shelters with the same amenities and improvements to pedestrian access to and from bus stops, such as improved paved connections, crossings, and lighting. These funds must be spent on such improvements within the same policy area, or—for a Red policy area or an Orange town center policy area—either in that area or an adjacent one, unless the applicant agrees otherwise.

Figure 6. Local Area Transportation Review Process – Bus Transit System Adequacy[21]



B. Determining Background and Total Future Conditions

The assessment of bus transit system adequacy does not require identifying or forecasting any bus transit travel demand beyond the extent of defining the need for a bust transit system adequacy determination. The assessment of adequacy is made fully in accordance with the criteria and procedures described in Section VII.A.

[21] Subdivision applications located within Green policy areas are exempt from the bus transit system adequacy test.

VIII. Appendices

Appendix 1a: ITE Vehicle Trip Generation Rate Adjustment Factors

Appendix Table 1a: Institute of Transportation Engineers Vehicle Trip Generation Rate Adjustment Factors					
Policy Area #		Residential	Office	Retail	Other
1	Aspen Hill	97%	98%	99%	97%
2	Bethesda CBD	79%	63%	61%	62%
3	Bethesda/Chevy Chase	87%	81%	85%	79%
4	Burtonsville Town Center	96%	96%	99%	97%
5	Chevy Chase Lake	87%	81%	85%	79%
6	Clarksburg	100%	101%	100%	100%
7	Clarksburg Town Center	100%	101%	100%	100%
8	Cloverly	99%	101%	100%	101%
9	Damascus	101%	100%	100%	100%
10	Derwood	94%	94%	87%	94%
11	Fairland/Colesville	96%	96%	99%	97%
39	Forest Glen	79%	70%	64%	70%
12	Friendship Heights	78%	70%	73%	70%
13	Gaithersburg City	88%	86%	76%	85%
14	Germantown East	95%	95%	97%	91%
15	Germantown Town Center	89%	91%	89%	90%
16	Germantown West	93%	90%	92%	88%
17	Glenmont	90%	91%	96%	91%
18	Grosvenor	81%	84%	75%	80%
19	Kensington/Wheaton	91%	92%	96%	92%
40	Lyttonsville	84%	78%	78%	77%
44	Medical Center	83%	72%	73%	71%
21	Montgomery Village/Airpark	93%	102%	93%	102%
22	North Bethesda	83%	87%	71%	82%
23	North Potomac	97%	100%	100%	100%
24	Olney	99%	100%	99%	100%
25	Potomac	97%	98%	96%	98%
43	Purple Line East	87%	87%	89%	88%
26	R&D Village	89%	88%	80%	90%
27	Rockville City	88%	94%	87%	98%
28	Rockville Town Center	79%	80%	70%	79%
29	Rural East	99%	99%	98%	100%
30	Rural West	100%	100%	100%	100%
31	Shady Grove Metro Station	89%	88%	77%	88%
32	Silver Spring CBD	77%	65%	58%	65%
33	Silver Spring/Takoma Park	83%	83%	82%	84%
42	Takoma	80%	74%	70%	75%
35	Twinbrook	81%	80%	74%	79%
36	Wheaton CBD	85%	85%	76%	84%
37	White Flint	79%	78%	72%	78%
38	White Oak	89%	90%	91%	88%
41	Woodside	80%	74%	70%	75%

Appendix 1b: Mode Split Assumptions by Policy Area

Appendix Table 1b: Mode Split Assumptions by Policy Area						
Policy Area #	**Development Type**	**Auto Driver**	**Auto Passenger**	**Transit**	**Non-Motorized**	**Total**
1 Aspen Hill	Residential	62.5%	25.8%	5.3%	6.4%	100%
	Office	74.2%	18.2%	2.9%	4.7%	100%
	Retail	72.1%	23.4%	1.3%	3.2%	100%
	Other	74.0%	18.2%	2.5%	5.2%	100%
2 Bethesda CBD	Residential	50.9%	20.8%	11.7%	16.6%	100%
	Office	47.9%	12.6%	23.8%	15.7%	100%
	Retail	44.2%	16.9%	10.9%	27.9%	100%
	Other	47.3%	13.2%	23.0%	16.5%	100%
3 Bethesda/Chevy Chase	Residential	56.1%	23.6%	7.6%	12.6%	100%
	Office	61.8%	17.4%	11.5%	9.3%	100%
	Retail	61.6%	24.7%	3.2%	10.5%	100%
	Other	60.5%	17.1%	12.6%	9.9%	100%
4 Burtonsville Town Center	Residential	62.3%	25.9%	4.9%	6.9%	100%
	Office	73.0%	19.8%	2.8%	4.3%	100%
	Retail	71.6%	24.3%	1.0%	3.1%	100%
	Other	73.9%	19.4%	2.5%	4.2%	100%
5 Chevy Chase Lake	Residential	56.1%	23.6%	7.6%	12.6%	100%
	Office	61.8%	17.4%	11.5%	9.3%	100%
	Retail	61.6%	24.7%	3.2%	10.5%	100%
	Other	60.5%	17.1%	12.6%	9.9%	100%
6 Clarksburg	Residential	64.5%	27.1%	2.5%	5.9%	100%
	Office	76.5%	20.0%	0.0%	3.5%	100%
	Retail	72.3%	25.7%	0.0%	2.0%	100%
	Other	76.2%	20.3%	0.0%	3.5%	100%
7 Clarksburg Town Center	Residential	64.5%	27.1%	2.5%	5.9%	100%
	Office	76.5%	20.0%	0.0%	3.5%	100%
	Retail	72.3%	25.7%	0.0%	2.0%	100%
	Other	76.2%	20.3%	0.0%	3.5%	100%
8 Cloverly	Residential	64.1%	26.4%	3.5%	5.9%	100%
	Office	76.8%	19.0%	0.7%	3.5%	100%
	Retail	72.8%	25.1%	0.2%	2.0%	100%
	Other	76.5%	19.2%	0.8%	3.4%	100%
9 Damascus	Residential	65.4%	26.6%	2.2%	5.8%	100%
	Office	76.1%	20.3%	0.1%	3.5%	100%
	Retail	72.5%	25.5%	0.0%	1.9%	100%
	Other	76.1%	20.4%	0.1%	3.5%	100%
10 Derwood	Residential	61.0%	26.6%	5.6%	6.8%	100%
	Office	71.4%	20.4%	3.6%	4.5%	100%
	Retail	63.4%	28.7%	2.2%	5.7%	100%
	Other	71.3%	20.4%	3.7%	4.6%	100%
11 Fairland/Colesville	Residential	62.3%	25.9%	4.9%	6.9%	100%
	Office	73.0%	19.8%	2.8%	4.3%	100%
	Retail	71.6%	24.3%	1.0%	3.1%	100%
	Other	73.9%	19.4%	2.5%	4.2%	100%
39 Forest Glen	Residential	52.1%	19.9%	11.9%	16.2%	100.0%
	Office	56.3%	9.9%	20.9%	13.1%	100.0%
	Retail	51.0%	14.9%	13.9%	20.2%	100.0%
	Other	56.5%	9.6%	20.4%	13.4%	100.0%

Appendix Table 1b: Mode Split Assumptions by Policy Area						
Policy Area #	**Development Type**	**Auto Driver**	**Auto Passenger**	**Transit**	**Non-Motorized**	**Total**
12 Friendship Heights	Residential	50.3%	19.4%	15.4%	14.8%	100%
	Office	53.0%	9.9%	24.5%	12.6%	100%
	Retail	52.8%	15.4%	11.8%	19.9%	100%
	Other	53.4%	9.7%	23.9%	13.0%	100%
13 Gaithersburg City	Residential	56.7%	26.8%	5.4%	11.1%	100%
	Office	65.4%	23.5%	4.1%	7.1%	100%
	Retail	55.0%	32.7%	2.4%	10.0%	100%
	Other	64.4%	24.5%	3.8%	7.3%	100%
14 Germantown East	Residential	61.5%	26.9%	4.3%	7.4%	100%
	Office	72.1%	21.1%	1.8%	5.0%	100%
	Retail	70.1%	25.3%	1.1%	3.5%	100%
	Other	69.5%	23.2%	2.5%	4.8%	100%
15 Germantown Town Center	Residential	57.7%	27.0%	5.4%	9.9%	100%
	Office	69.2%	20.4%	4.5%	5.8%	100%
	Retail	64.5%	26.5%	2.5%	6.4%	100%
	Other	68.2%	20.1%	5.3%	6.4%	100%
16 Germantown West	Residential	60.4%	26.9%	4.1%	8.6%	100%
	Office	68.2%	22.9%	3.2%	5.8%	100%
	Retail	66.4%	27.6%	1.2%	4.8%	100%
	Other	67.0%	23.5%	3.3%	6.2%	100%
17 Glenmont	Residential	58.4%	24.8%	10.0%	6.8%	100%
	Office	69.5%	16.8%	8.2%	5.6%	100%
	Retail	69.5%	22.7%	4.0%	3.9%	100%
	Other	69.1%	16.9%	8.4%	5.6%	100%
18 Grosvenor	Residential	52.3%	25.8%	11.9%	10.0%	100%
	Office	63.4%	16.5%	13.3%	6.8%	100%
	Retail	54.7%	27.5%	8.4%	9.5%	100%
	Other	61.0%	17.2%	15.4%	6.3%	100%
19 Kensington/Wheaton	Residential	59.1%	25.4%	8.1%	7.4%	100%
	Office	69.6%	18.6%	6.1%	5.7%	100%
	Retail	69.8%	23.8%	2.1%	4.3%	100%
	Other	69.8%	18.7%	5.6%	5.9%	100%
40 Lyttonsville	Residential	56.1%	23.6%	7.6%	12.6%	100%
	Office	61.8%	17.4%	11.5%	9.3%	100%
	Retail	61.6%	24.7%	3.2%	10.5%	100%
	Other	60.5%	17.1%	12.6%	9.9%	100%
44 Medical Center	Residential	53.5%	22.2%	9.7%	14.6%	100%
	Office	54.9%	15.0%	17.7%	12.5%	100%
	Retail	52.9%	20.8%	7.1%	19.2%	100%
	Other	53.9%	15.2%	17.8%	13.2%	100%
20 Long Branch	Residential	54.0%	21.0%	10.1%	14.9%	100%
	Office	63.0%	10.7%	15.1%	11.2%	100%
	Retail	59.5%	17.2%	6.9%	16.4%	100%
	Other	63.8%	10.5%	14.0%	11.6%	100%
21 Montgomery Village/Airpark	Residential	59.9%	26.8%	4.6%	8.6%	100%
	Office	77.7%	15.1%	2.9%	4.3%	100%
	Retail	67.7%	25.1%	1.7%	5.4%	100%
	Other	77.4%	15.1%	2.8%	4.7%	100%

Appendix Table 1b: Mode Split Assumptions by Policy Area						
Policy Area #	**Development Type**	**Auto Driver**	**Auto Passenger**	**Transit**	**Non-Motorized**	**Total**
22 North Bethesda	Residential	53.8%	25.9%	8.0%	12.3%	100%
	Office	65.8%	18.4%	8.6%	7.3%	100%
	Retail	51.6%	28.4%	6.1%	14.0%	100%
	Other	62.4%	19.5%	9.4%	8.7%	100%
23 North Potomac	Residential	63.0%	27.1%	3.0%	7.0%	100%
	Office	75.7%	18.6%	0.8%	4.8%	100%
	Retail	72.4%	24.1%	0.6%	2.9%	100%
	Other	75.8%	18.8%	1.0%	4.4%	100%
24 Olney	Residential	64.3%	26.4%	3.3%	6.1%	100%
	Office	76.3%	19.4%	0.7%	3.6%	100%
	Retail	72.1%	24.8%	0.5%	2.6%	100%
	Other	76.3%	19.5%	0.7%	3.5%	100%
25 Potomac	Residential	62.6%	26.8%	4.1%	6.5%	100%
	Office	74.4%	19.3%	2.2%	4.1%	100%
	Retail	69.8%	25.7%	1.8%	2.7%	100%
	Other	74.8%	19.5%	2.1%	3.7%	100%
43 Purple Line East	Residential	54.0%	21.0%	10.1%	14.9%	100%
	Office	63.0%	10.7%	15.1%	11.2%	100%
	Retail	59.5%	17.2%	6.9%	16.4%	100%
	Other	63.8%	10.5%	14.0%	11.6%	100%
26 R&D Village	Residential	57.3%	27.3%	5.7%	9.7%	100%
	Office	66.7%	23.5%	4.4%	5.4%	100%
	Retail	58.0%	34.1%	2.0%	6.0%	100%
	Other	68.8%	22.4%	3.8%	5.1%	100%
27 Rockville City	Residential	56.8%	26.6%	6.3%	10.2%	100%
	Office	71.7%	17.4%	5.4%	5.5%	100%
	Retail	62.8%	25.6%	3.3%	8.2%	100%
	Other	74.7%	15.3%	4.8%	5.1%	100%
28 Rockville Town Center	Residential	51.3%	25.3%	8.9%	14.5%	100%
	Office	60.5%	16.7%	12.3%	10.5%	100%
	Retail	51.0%	26.5%	6.8%	15.6%	100%
	Other	59.9%	16.9%	12.4%	10.8%	100%
29 Rural East	Residential	64.0%	28.2%	2.6%	5.3%	100%
	Office	75.4%	20.6%	0.3%	3.7%	100%
	Retail	71.2%	26.8%	0.1%	1.9%	100%
	Other	75.8%	20.2%	0.5%	3.6%	100%
30 Rural West	Residential	64.8%	28.2%	1.8%	5.2%	100%
	Office	76.0%	20.4%	0.0%	3.6%	100%
	Retail	72.6%	25.7%	0.0%	1.7%	100%
	Other	76.1%	20.3%	0.1%	3.5%	100%
31 Shady Grove Metro Station	Residential	57.7%	26.4%	8.7%	7.1%	100%
	Office	67.0%	20.6%	6.8%	5.5%	100%
	Retail	55.9%	29.2%	3.8%	11.1%	100%
	Other	66.9%	20.6%	7.2%	5.2%	100%
32 Silver Spring CBD	Residential	50.1%	18.8%	13.6%	17.5%	100%
	Office	49.6%	9.0%	26.6%	14.9%	100%
	Retail	42.4%	12.6%	20.9%	24.0%	100%
	Other	49.2%	8.7%	26.8%	15.2%	100%

Appendix Table 1b: Mode Split Assumptions by Policy Area						
Policy Area #	**Development Type**	**Auto Driver**	**Auto Passenger**	**Transit**	**Non-Motorized**	**Total**
33 Silver Spring/Takoma Park	Residential	54.0%	21.0%	10.1%	14.9%	100%
	Office	63.0%	10.7%	15.1%	11.2%	100%
	Retail	59.5%	17.2%	6.9%	16.4%	100%
	Other	63.8%	10.5%	14.0%	11.6%	100%
42 Takoma	Residential	52.1%	19.9%	11.9%	16.2%	100%
	Office	56.3%	9.9%	20.9%	13.1%	100%
	Retail	51.0%	14.9%	13.9%	20.2%	100%
	Other	56.5%	9.6%	20.4%	13.4%	100%
35 Twinbrook	Residential	52.3%	26.2%	9.7%	11.8%	100%
	Office	60.8%	17.2%	13.7%	8.3%	100%
	Retail	53.6%	27.8%	7.2%	11.4%	100%
	Other	60.2%	17.5%	13.9%	8.5%	100%
36 Wheaton CBD	Residential	55.3%	24.9%	11.6%	8.2%	100%
	Office	64.3%	15.0%	13.1%	7.5%	100%
	Retail	54.8%	25.2%	7.6%	12.4%	100%
	Other	64.2%	15.1%	13.1%	7.6%	100%
37 White Flint	Residential	51.4%	26.3%	10.7%	11.6%	100%
	Office	59.2%	17.8%	14.4%	8.5%	100%
	Retail	52.2%	28.3%	8.2%	11.3%	100%
	Other	59.5%	17.9%	14.0%	8.6%	100%
38 White Oak	Residential	57.9%	25.8%	7.8%	8.5%	100%
	Office	68.7%	22.6%	3.3%	5.4%	100%
	Retail	65.7%	28.0%	2.0%	4.3%	100%
	Other	66.9%	23.9%	3.4%	5.8%	100%
41 Woodside	Residential	56.1%	23.6%	7.6%	12.6%	100%
	Office	61.8%	17.4%	11.5%	9.3%	100%
	Retail	61.6%	24.7%	3.2%	10.5%	100%
	Other	60.5%	17.1%	12.6%	9.9%	100%

Appendix 2: Trip Distribution and Traffic Assignment Guidelines

Introduction

This appendix provides trip distribution guidance to be used in all transportation studies prepared for development sites in Montgomery County. Vehicle trip distribution and trip assignment are described in Section IV.C of the LATR Guidelines. For most development sites, the process is a combination of trip distribution and traffic assignment.

Definitions

Trip distribution specifies the destination of trips that originate from a development site. Similarly, trip distribution specifies the origin of trips that are destined to a development site.

Traffic assignment specifies the individual local area intersections used to access (enter and leave) a development site.

Discussion

The tables in this appendix provide generalized assumptions for trip distribution for both background development(s) and the development site. For the purposes of reviewing trip distribution, the Washington, DC metropolitan region is divided into 16 geographic areas, called super districts. Eleven of these super districts are in Montgomery County, as shown in Appendix Map 2-1. The remaining five super districts are situated in neighboring jurisdictions.

The trip distribution assumptions are provided in Tables 2-3 through 2-12 for developments within each of the eleven super districts in Montgomery County. For each super district, the assumed distribution of trips for general office development and for residential development is listed. For instance, 10.9 percent of trips generated by a general office development in Germantown (see Appendix Table 2-11) would be expected to travel to or from Frederick County. However, only 1.8 percent of trips generated by a residential development in Germantown would be expected to travel to or from Frederick County.

The trip distribution assumptions in these tables are based on information derived from the year 2010 application of the Planning Department's Travel/4 regional travel demand model. Travel/4 is a Montgomery County-focused adaptation of the Version 2.3.52 regional travel demand model developed by the Metropolitan Washington Council of Governments (MWCOG).

The Version 2.3.52 model is validated using information derived from the 2007-2008 Household Travel Survey (HTS) also developed by MWCOG. The distribution for **residential** development for each super district is based on the model estimated distribution of morning peak period auto driver home-based work trips **from** each super district. Similarly, the distribution for **office** development for each super district is based on the model estimated distribution of morning peak period auto driver home-based work trips **to** each super district. **Trip distribution for other land uses will be decided based on consultation with Planning Department staff and the applicant prior to submission of the transportation study.**

The application of the trip distribution information in Tables 2-3 through 2-12 is straightforward in cases where a transportation study has a limited number of alternate routes. In other cases, judgment is required to convert the trip distribution information into traffic assignment information useful for conducting the Local Area Transportation Review.

Appendix Tables 2-1a, 2-1b, 2-2a and 2-2b provide an example of how the trip distribution information can be converted to traffic assignment information for a hypothetical case in the Rockville/North Bethesda super district with both office and residential components.

The elements of the office component trip distribution and assignment are shown in Appendix Tables 2-1a and 2-1b. The leftmost column of data in Appendix Table 2-1a shows the office trip distribution by super-district as found in Appendix Table 2-6 (used for development in the Rockville/North Bethesda super district). The trip assignment for origin by super district is provided in the remaining columns of Appendix Table 2-1a describing the assumed route, or assignment, taken for trips between the site and each super district. **The data inside the cells of this table must be developed using judgment and confirmed by Planning Department staff.**

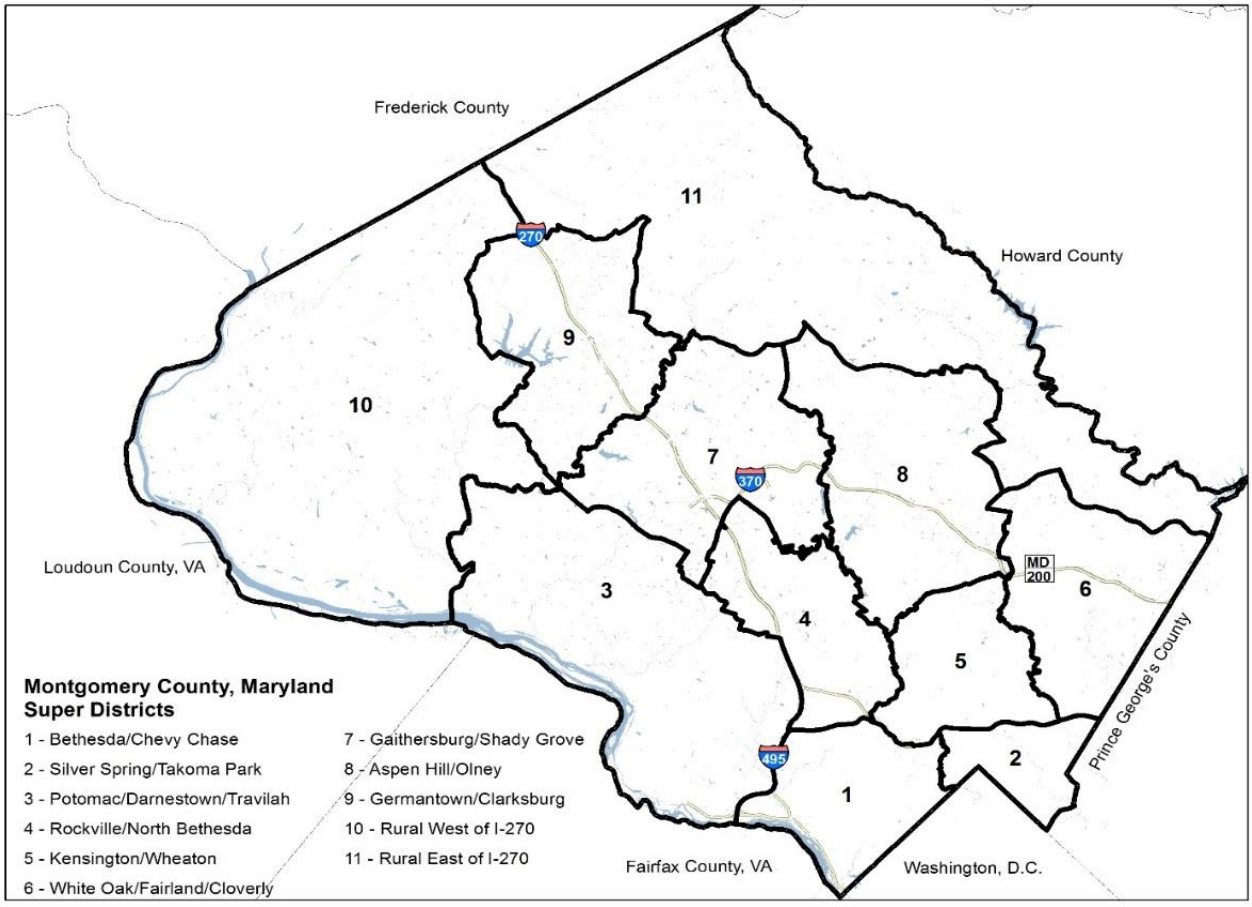
The leftmost column of Appendix Table 2-1b shows the trip distribution by super-district as found in Appendix Table 2-6. The data shown in the remaining columns of the table multiplies the percent of trips distributed to each super district by the percent of trips from that super district assigned to each route to calculate the percent of total site-generated trips using each combination of distribution and assignment.

The data describing the elements of the residential component trip distribution and assignment are shown in Appendix Tables 2-2a and 2-2b. The leftmost column of data in Appendix Table 2-2a shows the residential trip distribution by super-district as found in Appendix Table 2-6. The trip assignment for origin by super district is provided in the remaining columns of Appendix Table 2-2a describing the assumed route, or assignment, taken for trips between the site and each super district. **The data inside the cells of this table must be developed using judgment and confirmed by Planning Department staff.**

The leftmost column of Appendix Table 2-2b shows the trip distribution by super-district as found in Appendix Table 2-6. The data shown in the remaining columns of the table multiplies the percent of trips distributed to each super district by the percent of trips from that super district assigned to each route to calculate the percent of total site-generated trips using each combination of distribution and assignment.

The assignment data described above is then summed to develop an aggregate trip assignment for the trips generated by the office and residential components of the site, respectively.

Appendix Map 2-1. Super Districts in Montgomery County



Trip Distribution/Assignment Matrix: Hypothetical Case – North Bethesda with both Office and Residential Components

Appendix Table 2-1a.
Part 1 - Office Component

Trip Distribution by Super District		Office Development	Trip assignment for origin by super district: Montrose Road/Parkway west	MD 355 north	Randolph Road east	MD 355 south	MD 187 south	TOTAL
1	Bethesda/Chevy Chase	4.6%				50%	50%	100%
2	Silver Spring/Takoma Park	1.9%				100%		100%
3	Potomac/Darnestown/Travilah	8.7%	80%				20%	100%
4	Rockville/North Bethesda	20.5%	25%	75%				100%
5	Kensington/Wheaton	5.4%			80%	20%		100%
6	White Oak/Fairland/Cloverly	2.7%			80%	20%		100%
7	Gaithersburg/Shady Grove	10.8%	75%	25%				100%
8	Aspen Hill/Olney	6.9%	20%	50%	30%			100%
9	Germantown/Clarksburg	4.8%	90%	10%				100%
10	Rural West of I-270	0.4%	100%					100%
11	Rural East of I-270	1.5%	40%	40%	20%			100%
12	Washington, DC	2.3%	70%				30%	100%
13	PG /AA/Cal/St.M/Chls Cos., MD	10.2%				100%		100%
14	VA / WV	9.3%	80%		10%		10%	100%
15	Frederick Co., MD	4.3%	100%					100%
16	Howard Co./Carroll Co., MD	5.7%		10%	10%	80%		100%
	TOTAL	100.0%						

Appendix Table 2-1b.
Part 1 - Office Component

Trip assignment for development case

Trip Distribution by Super District		Office Development	Montrose Road/Parkway west	MD 355 north	Randolph Road east	MD 355 south	MD 187 south	TOTAL
1	Bethesda/Chevy Chase	4.6%	0.0%	0.0%	0.0%	2.3%	2.3%	4.6%
2	Silver Spring/Takoma Park	1.9%	0.0%	0.0%	0.0%	1.9%	0.0%	1.9%
3	Potomac/Darnestown/Travilah	8.7%	7.0%	0.0%	0.0%	0.0%	1.7%	8.7%
4	Rockville/North Bethesda	20.5%	5.1%	15.4%	0.0%	0.0%	0.0%	20.5%
5	Kensington/Wheaton	5.4%	0.0%	0.0%	4.3%	1.1%	0.0%	5.4%
6	White Oak/Fairland/Cloverly	2.7%	0.0%	0.0%	2.2%	0.5%	0.0%	2.7%
7	Gaithersburg/Shady Grove	10.8%	8.1%	2.7%	0.0%	0.0%	0.0%	10.8%
8	Aspen Hill/Olney	6.9%	1.4%	3.5%	2.1%	0.0%	0.0%	6.9%
9	Germantown/Clarksburg	4.8%	4.3%	0.5%	0.0%	0.0%	0.0%	4.8%
10	Rural West of I-270	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.4%
11	Rural East of I-270	1.5%	0.6%	0.6%	0.3%	0.0%	0.0%	1.5%
12	Washington, DC	2.3%	1.6%	0.0%	0.0%	0.0%	0.7%	2.3%
13	PG /AA/Cal/St.M/Chls Cos., MD	10.2%	0.0%	0.0%	0.0%	10.2%	0.0%	10.2%
14	VA / WV	9.3%	7.4%	0.0%	0.9%	0.0%	0.9%	9.3%
15	Frederick Co., MD	4.3%	4.3%	0.0%	0.0%	0.0%	0.0%	4.3%
16	Howard Co./Carroll Co., MD	5.7%	0.0%	0.6%	0.6%	4.6%	0.0%	5.7%
	TOTAL	100.0%	40.2%	23.2%	10.4%	20.6%	5.7%	100.0%
		USE -->	40%	23%	10%	21%	6%	100.0%

Appendix Table 2-2a.
Part 2 - Residential Component

Trip assignment for origin by super district

Trip Distribution by Super District		Residential Development	Montrose Road/Parkway west	MD 355 north	Randolph Road east	MD 355 south	MD 187 south	TOTAL
1	Bethesda/Chevy Chase	7.4%				50%	50%	100%
2	Silver Spring/Takoma Park	2.3%				100%		100%
3	Potomac/Darnestown/Travilah	5.4%	80%				20%	100%
4	Rockville/North Bethesda	38.2%	25%	75%				100%
5	Kensington/Wheaton	4.1%			80%	20%		100%
6	White Oak/FairHland/Cloverly	1.6%			80%	20%		100%
7	Gaithersburg/Shady Grove	13.4%	75%	25%				100%
8	Aspen Hill/Olney	2.8%	20%	50%	30%			100%
9	Germantown/Clarksburg	1.7%	90%	10%				100%
10	Rural West of I-270	0.1%	100%					100%
11	Rural East of I-270	0.3%	40%	40%	20%			100%
12	Washington, DC	11.0%	70%				30%	100%
13	PG /AA/Cal/St.M/Chls Cos., MD	4.4%				100%		100%
14	VA / WV	6.5%	80%		10%		10%	100%
15	Frederick Co., MD	0.3%	100%					100%
16	Howard Co./Carroll Co., MD	0.5%		10%	10%	80%		100%
TOTAL		100.0%						

Appendix Table 2-2b.
Part 2 - Residential Component

Trip assignment for development case

Trip Distribution by Super District		Residential Development	Montrose Road/Parkway west	MD 355 north	Randolph Road east	MD 355 south	MD 187 south	TOTAL
1	Bethesda/Chevy Chase	7.4%	0.0%	0.0%	0.0%	3.7%	3.7%	7.4%
2	Silver Spring/Takoma Park	2.3%	0.0%	0.0%	0.0%	2.3%	0.0%	2.3%
3	Potomac/Darnestown/Travilah	5.4%	4.3%	0.0%	0.0%	0.0%	1.1%	5.4%
4	Rockville/North Bethesda	38.2%	9.6%	28.7%	0.0%	0.0%	0.0%	38.2%
5	Kensington/Wheaton	4.1%	0.0%	0.0%	3.3%	0.8%	0.0%	4.1%
6	White Oak/Fairland/Cloverly	1.6%	0.0%	0.0%	1.3%	0.3%	0.0%	1.6%
7	Gaithersburg/Shady Grove	13.4%	10.1%	3.4%	0.0%	0.0%	0.0%	13.4%
8	Aspen Hill/Olney	2.8%	0.6%	1.4%	0.8%	0.0%	0.0%	2.8%
9	Germantown/Clarksburg	1.7%	1.5%	0.2%	0.0%	0.0%	0.0%	1.7%
10	Rural West of I-270	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%
11	Rural East of I-270	0.3%	0.1%	0.1%	0.1%	0.0%	0.0%	0.3%
12	Washington, DC	11.0%	7.7%	0.0%	0.0%	0.0%	3.3%	11.0%
13	PG /AA/Cal/St.M/Chls Cos., MD	4.4%	0.0%	0.0%	0.0%	4.4%	0.0%	4.4%
14	VA / WV	6.5%	5.2%	0.0%	0.7%	0.0%	0.7%	6.5%
15	Frederick Co., MD	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.3%
16	Howard Co./Carroll Co., MD	0.5%	0.0%	0.1%	0.1%	0.4%	0.0%	0.5%
	TOTAL	100.0%	39.4%	33.7%	6.2%	11.9%	8.7%	100.0%
		USE -->	39%	34%	6%	12%	9%	100.0%

Appendix Table 2-3. Auto-Driver AM Trip Distribution in Super District 1: Bethesda/Chevy Chase

Trip Distribution to Super District		Office Development	Residential Development
1	Bethesda/Chevy Chase	24.0%	31.4%
2	Silver Spring/Takoma Park	4.1%	4.5%
3	Potomac/Darnestown/Travilah	5.4%	3.1%
4	Rockville/North Bethesda	6.2%	9.8%
5	Kensington/Wheaton	5.2%	2.9%
6	White Oak/Fairland/Cloverly	2.4%	1.1%
7	Gaithersburg/Shady Grove	3.4%	2.8%
8	Aspen Hill/Olney	3.2%	0.7%
9	Germantown/Clarksburg	2.1%	0.5%
10	Rural West of I-270	0.2%	0.0%
11	Rural East of I-270	0.8%	0.1%
12	DC	6.6%	29.6%
13	PG /AA/Cal/St.M/Chls, MD	15.2%	5.5%
14	VA / WV	13.5%	7.6%
15	Frederick, MD	2.8%	0.1%
16	Howard/Carroll, MD	4.9%	0.3%
		100.0%	100.0%

Appendix Table 2-4. Auto-Driver AM Trip Distribution in Super District 2: Silver Spring/Takoma Park

Trip Distribution to Super District		Office Development	Residential Development
1	Bethesda/Chevy Chase	6.8%	8.9%
2	Silver Spring/Takoma Park	21.9%	22.7%
3	Potomac/Darnestown/Travilah	2.8%	1.7%
4	Rockville/North Bethesda	3.9%	6.5%
5	Kensington/Wheaton	8.7%	6.9%
6	White Oak/Fairland/Cloverly	5.5%	5.0%
7	Gaithersburg/Shady Grove	2.2%	2.2%
8	Aspen Hill/Olney	3.7%	1.6%
9	Germantown/Clarksburg	1.3%	0.3%
10	Rural West of I-270	0.1%	0.0%
11	Rural East of I-270	0.8%	0.3%
12	DC	6.4%	23.8%
13	PG /AA/Cal/St.M/Chls, MD	22.1%	13.0%
14	VA / WV	7.5%	6.2%
15	Frederick, MD	1.6%	0.1%
16	Howard/Carroll, MD	4.7%	0.8%
		100.0%	100.0%

Appendix Table 2-5. Auto-Driver AM Trip Distribution in Super District 3: Potomac/Darnestown/Travilah

Trip Distribution to Super District		Office Development	Residential Development
1	Bethesda/Chevy Chase	5.9%	7.7%
2	Silver Spring/Takoma Park	2.0%	2.0%
3	Potomac/Darnestown/Travilah	32.8%	18.0%
4	Rockville/North Bethesda	11.6%	19.5%
5	Kensington/Wheaton	3.3%	1.7%
6	White Oak/Fairland/Cloverly	1.6%	0.9%
7	Gaithersburg/Shady Grove	10.9%	15.0%
8	Aspen Hill/Olney	2.8%	0.9%
9	Germantown/Clarksburg	5.6%	2.6%
10	Rural West of I-270	0.6%	0.1%
11	Rural East of I-270	0.9%	0.2%
12	DC	3.8%	18.4%
13	PG /AA/Cal/St.M/Chls, MD	6.2%	4.2%
14	VA / WV	5.6%	7.9%
15	Frederick, MD	3.8%	0.5%
16	Howard/Carroll, MD	2.6%	0.4%
		100.0%	100.0%

Appendix Table 2-6. Auto-Driver AM Trip Distribution in Super District 4: Rockville/North Bethesda

Trip Distribution to Super District		Office Development	Residential Development
1	Bethesda/Chevy Chase	4.6%	7.4%
2	Silver Spring/Takoma Park	1.9%	2.3%
3	Potomac/Darnestown/Travilah	8.7%	5.4%
4	Rockville/North Bethesda	20.5%	38.2%
5	Kensington/Wheaton	5.4%	4.1%
6	White Oak/Fairland/Cloverly	2.7%	1.6%
7	Gaithersburg/Shady Grove	10.8%	13.4%
8	Aspen Hill/Olney	6.9%	2.8%
9	Germantown/Clarksburg	4.8%	1.7%
10	Rural West of I-270	0.4%	0.1%
11	Rural East of I-270	1.5%	0.3%
12	DC	2.3%	11.0%
13	PG /AA/Cal/St.M/Chls, MD	10.2%	4.4%
14	VA / WV	9.3%	6.5%
15	Frederick, MD	4.3%	0.3%
16	Howard/Carroll, MD	5.7%	0.5%
		100.0%	100.0%

Appendix Table 2-7. Auto-Driver AM Trip Distribution in Super District 5: Kensington/Wheaton

Trip Distribution to Super District		Office Development	Residential Development
1	Bethesda/Chevy Chase	5.1%	8.6%
2	Silver Spring/Takoma Park	7.2%	6.9%
3	Potomac/Darnestown/Travilah	2.7%	2.2%
4	Rockville/North Bethesda	7.6%	13.9%
5	Kensington/Wheaton	28.3%	20.7%
6	White Oak/Fairland/Cloverly	7.8%	5.8%
7	Gaithersburg/Shady Grove	2.9%	3.9%
8	Aspen Hill/Olney	9.7%	5.3%
9	Germantown/Clarksburg	1.3%	0.5%
10	Rural West of I-270	0.1%	0.0%
11	Rural East of I-270	1.0%	0.5%
12	DC	3.9%	16.6%
13	PG /AA/Cal/St.M/Chls, MD	13.3%	8.6%
14	VA / WV	3.9%	5.5%
15	Frederick, MD	1.4%	0.1%
16	Howard/Carroll, MD	3.8%	0.9%
		100.0%	100.0%

Appendix Table 2-8. Auto-Driver AM Trip Distribution in Super District 6: White Oak/Fairland/Cloverly

Trip Distribution to Super District		Office Development	Residential Development
1	Bethesda/Chevy Chase	1.6%	3.6%
2	Silver Spring/Takoma Park	4.1%	4.0%
3	Potomac/Darnestown/Travilah	1.1%	1.0%
4	Rockville/North Bethesda	2.4%	6.6%
5	Kensington/Wheaton	6.2%	5.3%
6	White Oak/Fairland/Cloverly	37.2%	30.8%
7	Gaithersburg/Shady Grove	1.7%	2.9%
8	Aspen Hill/Olney	5.4%	3.7%
9	Germantown/Clarksburg	0.8%	0.4%
10	Rural West of I-270	0.1%	0.0%
11	Rural East of I-270	1.8%	1.8%
12	DC	2.8%	15.6%
13	PG /AA/Cal/St.M/Chls, MD	22.9%	16.4%
14	VA / WV	3.2%	4.7%
15	Frederick, MD	1.4%	0.1%
16	Howard/Carroll, MD	7.3%	3.1%
		100.0%	100.0%

Appendix Table 2-9. Auto-Driver AM Trip Distribution in Super District 7: Gaithersburg/Shady Grove

Trip Distribution to Super District		Office Development	Residential Development
1	Bethesda/Chevy Chase	1.5%	3.2%
2	Silver Spring/Takoma Park	0.7%	1.0%
3	Potomac/Darnestown/Travilah	7.4%	4.0%
4	Rockville/North Bethesda	8.0%	15.7%
5	Kensington/Wheaton	1.7%	1.2%
6	White Oak/Fairland/Cloverly	1.4%	0.9%
7	Gaithersburg/Shady Grove	35.2%	45.4%
8	Aspen Hill/Olney	4.8%	2.1%
9	Germantown/Clarksburg	11.7%	6.5%
10	Rural West of I-270	0.7%	0.2%
11	Rural East of I-270	3.2%	1.1%
12	DC	1.2%	8.7%
13	PG /AA/Cal/St.M/Chls, MD	5.3%	3.0%
14	VA / WV	5.3%	5.6%
15	Frederick, MD	6.4%	0.7%
16	Howard/Carroll, MD	5.5%	0.7%
		100.0%	100.0%

Appendix Table 2-10. Auto-Driver AM Trip Distribution in Super District 8: Aspen Hill/Olney

Trip Distribution to Super District		Office Development	Residential Development
1	Bethesda/Chevy Chase	1.4%	4.5%
2	Silver Spring/Takoma Park	1.9%	2.5%
3	Potomac/Darnestown/Travilah	1.6%	1.6%
4	Rockville/North Bethesda	5.9%	14.9%
5	Kensington/Wheaton	8.0%	6.0%
6	White Oak/Fairland/Cloverly	6.0%	4.2%
7	Gaithersburg/Shady Grove	5.5%	9.4%
8	Aspen Hill/Olney	47.4%	26.2%
9	Germantown/Clarksburg	1.7%	1.2%
10	Rural West of I-270	0.1%	0.0%
11	Rural East of I-270	3.1%	1.7%
12	DC	1.6%	13.9%
13	PG /AA/Cal/St.M/Chls, MD	7.3%	6.9%
14	VA / WV	1.6%	5.0%
15	Frederick, MD	2.0%	0.3%
16	Howard/Carroll, MD	4.9%	1.7%
		100.0%	100.0%

Appendix Table 2-11. Auto-Driver AM Trip Distribution in Super District 9: Germantown/Clarksburg

Trip Distribution to Super District		Office Development	Residential Development
1	Bethesda/Chevy Chase	0.7%	2.9%
2	Silver Spring/Takoma Park	0.3%	0.9%
3	Potomac/Darnestown/Travilah	3.6%	3.1%
4	Rockville/North Bethesda	2.8%	10.5%
5	Kensington/Wheaton	0.7%	0.8%
6	White Oak/Fairland/Cloverly	0.5%	0.6%
7	Gaithersburg/Shady Grove	13.7%	22.7%
8	Aspen Hill/Olney	1.6%	1.0%
9	Germantown/Clarksburg	50.2%	35.0%
10	Rural West of I-270	1.2%	0.6%
11	Rural East of I-270	4.2%	1.6%
12	DC	0.5%	9.2%
13	PG /AA/Cal/St.M/Chls, MD	2.3%	2.7%
14	VA / WV	2.7%	5.9%
15	Frederick, MD	10.3%	1.8%
16	Howard/Carroll, MD	4.7%	0.7%
		100.0%	100.0%

Appendix Table 2-12. Auto-Driver AM Trip Distribution in Super District 10: Rural West of I-270

Trip Distribution to Super District		Office Development	Residential Development
1	Bethesda/Chevy Chase	0.4%	3.7%
2	Silver Spring/Takoma Park	0.2%	1.0%
3	Potomac/Darnestown/Travilah	2.5%	3.6%
4	Rockville/North Bethesda	1.4%	9.8%
5	Kensington/Wheaton	0.3%	0.8%
6	White Oak/Fairland/Cloverly	0.2%	0.6%
7	Gaithersburg/Shady Grove	5.5%	14.0%
8	Aspen Hill/Olney	0.7%	0.7%
9	Germantown/Clarksburg	11.0%	9.2%
10	Rural West of I-270	45.5%	24.2%
11	Rural East of I-270	2.0%	0.8%
12	DC	0.2%	15.0%
13	PG /AA/Cal/St.M/Chls, MD	1.1%	3.0%
14	VA / WV	2.5%	8.3%
15	Frederick, MD	21.2%	4.6%
16	Howard/Carroll, MD	5.3%	0.7%
		100.0%	100.0%

Appendix Table 2-13. Auto-Driver AM Trip Distribution in Super District 11: Rural East of I-270

Trip Distribution to Super District		Office Development	Residential Development
1	Bethesda/Chevy Chase	0.5%	3.1%
2	Silver Spring/Takoma Park	0.8%	1.4%
3	Potomac/Darnestown/Travilah	0.8%	1.3%
4	Rockville/North Bethesda	1.8%	8.7%
5	Kensington/Wheaton	1.7%	1.6%
6	White Oak/Fairland/Cloverly	7.0%	3.4%
7	Gaithersburg/Shady Grove	6.9%	16.1%
8	Aspen Hill/Olney	7.2%	4.5%
9	Germantown/Clarksburg	7.1%	7.9%
10	Rural West of I-270	0.3%	0.3%
11	Rural East of I-270	33.6%	19.9%
12	DC	0.8%	13.4%
13	PG /AA/Cal/St.M/Chls, MD	8.2%	6.5%
14	VA / WV	1.5%	6.1%
15	Frederick, MD	10.7%	2.5%
16	Howard/Carroll, MD	11.1%	3.3%
		100.0%	100.0%

Appendix 3: Inter-agency Traffic Study Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING BETWEEN

THE CITY OF GAITHERSBURG

AND

THE CITY OF ROCKVILLE

AND

THE MONTGOMERY COUNTY PLANNING BOARD OF THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

FOR

THE COORDINATION OF TRAFFIC IMPACT STUDIES FOR PROPOSED DEVELOPMENT PROJECTS

This Memorandum of Understanding (MOU) is entered into by and between Montgomery County Planning Department of The Maryland-National Capital Park and Planning Commission, the City of Gaithersburg, and the City of Rockville (collectively, the Parties)

WHEREAS, the purpose of this MOU is for the Parties to work cooperatively to better manage traffic conditions given the inter-jurisdictional impact of traffic generated by development in close proximity to nearby jurisdictions through the exchange of information regarding traffic reports (traffic impact study or applicable traffic statement) of proposed development and through the coordination and review of such reports; and

WHEREAS, the parties acknowledge that each has a different set of standards for traffic reports within their jurisdiction.

NOW, THEREFORE, the Parties agree to the following:

1. The methodology for determining the scope of traffic reports for proposed development projects, and also for analyzing the intersections included in such reports, will be determined in accordance with the standards set by the approving jurisdiction.

2. If a proposed development project has a signalized intersection within the scope's study area and located in a neighboring jurisdiction (one of the other parties to this MOU), that such intersection will be analyzed as part of the required traffic reports in accordance with the standards set by the approving jurisdiction.

3. Each Party will notify their neighboring jurisdiction when a project is submitted for review that includes a signalized intersection within the scope's study area and located in that neighboring jurisdiction. This includes notification of pre-Development Review Committee/Development Review Team (DRC/DRT) meetings and regular DRC/DRT meetings for such project.

4. When a signalized intersection falls within a neighboring jurisdiction, the approving jurisdiction will provide the neighboring jurisdiction with a copy of the applicable traffic report scope between the applicant and the approving jurisdiction. The approving jurisdiction will also provide the accepted traffic report to the neighboring jurisdiction. The neighboring jurisdiction will then be allowed up to thirty (30) days to review and submit comments back to the approving jurisdiction regarding the proposed development's traffic report.

IN WITNESS WHEREOF, the undersigned being duly authorized by the respective agencies, has signed this MOU.

City of Gaithersburg, Maryland:

John Schlichting, Director, Planning and Code Administration

Date: 10/10/12

City of Rockville, Maryland:

Susan Swift, Director, Community Planning & Development Services

Date: 10-2-12

Montgomery County Planning Department:

Rose Krasnow, Acting Director

Date: 9-27-12

The Planning Board approved this version of the LATR Guidelines on March 7, 2024 to correct errors that previously appeared in Appendix 4.

Appendix 4: White Oak Local Area Transportation Improvement Program Mitigation Payments

Introduction

This appendix provides information pertaining to the mitigation fee payment schedule requirements for the White Oak Local Area Transportation Improvement Program (LATIP). These fees are paid by applicants to the Department of Permitting Services (DPS) at the same time and in the same manner as the transportation impact tax for new development in the White Oak policy area.

Discussion

The County Council established the White Oak Policy Area Pro Rata Share process under Resolution 18-107. It states that the Planning Board may approve a subdivision in the White Oak Policy Area ~~condition~~ed on the applicant paying a fee to the county commensurate with the applicant's proportion of the cost of the White Oak Local Area Transportation Improvement Program (LATIP) improvements. The proportion is based on a subdivision's share of net additional peak-hour vehicle trips generated by all master-planned development in the White Oak Policy Area approved after January 1, 2016.

County Council Resolution 18-726, adopted on February 14, 2017, established the LATIP fee at $5,010 per p.m. peak hour vehicle trip. This fee was calculated by dividing the plan area's total infrastructure costs by the number of new peak-hour vehicle trips:

LATIP fee = Total Infrastructure Costs in the Plan Area/Total Number of New PM Peak Hour Vehicle Trips

The *Total Infrastructure Costs in the Plan Area* were determined by a forecast estimate of the local area transportation needs and associated costs approved by the County Council. The *Total Number of New PM Peak Hour Vehicle Trips* was determined by a forecast estimate of the travel demand associated with the full build-out of the White Oak Science Gateway (WOSG) Master Plan.

The fee must be paid at a time and manner consistent with Local Area Transportation Mitigation Payments as prescribed in Section 52-51 of the County Code. The Department of Finance must retain funds collected from this fee in an account to be appropriated for transportation improvements that result in transportation capacity and mobility for the specific projects in the White Oak Local Area Transportation Improvement Program.

The trip generation rates used in support of the White Oak LATIP calculation are provided in the chart below. They are based on the peak hour trip rates used in support of the WOSG Master Plan local area traffic analysis and customized to reflect existing conditions and future changes in both land use and travel behavior. These trip rates have been disaggregated relative to those applied in the master plan to match the impact tax land use categories. Development resulting in increments of less than a trip will have the fee applied proportionally (no rounding). The resultant fees are paid at the same time and in the same manner as the transportation impact tax and apply to new applications for residential

and commercial development in the White Oak policy area.

The process by which applicants may receive a credit against the LATIP is described in Bill 51-16 found here:
http://www.montgomerycountymd.gov/COUNCIL/Resources/Files/bill/2016/20170214_51-16.pdf

White Oak Local Area Transportation Improvement Program (LATIP)

Trip Generation Rate Schedule

White Oak Local Area Model Trip Generation Rates		
Land Use	**Trips per Unit of Development**	**Units**
Office	1.20	1,000 SF
Retail	3.00	1,000 SF
Industrial	1.00	1,000 SF
BioScience	0.99	1,000 SF
Hospital	1.07	1,000 SF
Other Non-residential	0.92	1,000 SF
Single Family Detached	1.28	Dwelling Unit
Single Family Attached	0.65	Dwelling Unit
Multi Family Low Rise	0.52	Dwelling Unit
Multi Family High Rise	0.34	Dwelling Unit

Glossary

Background conditions: Conditions based on the addition of traffic generated by existing conditions plus any auto traffic generated by an approved but unbuilt or substantially vacant development.

Bicycle trip: Trip by a single individual entering or leaving a study site by bicycling to and from a destination.

BiPPA: Abbreviation for Bicyclist-Pedestrian Priority Area, designated by the Maryland Department of Transportation: https://www.montgomerycountymd.gov/dot-dte/projects/BicycleandPedestrianPriorityAreas/index.html

CLV: Critical lane volume, an intersection capacity analysis tool described in Transportation Research Circular 212 published by the Transportation Research Board of Washington, DC.

Existing conditions: Transportation system conditions based on recent observations.

HCM: Highway Capacity Manual used to denote the suite of products published by Transportation Research Board. The citation may be followed by a term defining the HCM edition (i.e., HCM 2000, HCM 2010, HCM 6).

ITE: Institute of Transportation Engineers.

LATR peak periods: Local Area Transportation Review study times of 6:30 – 9:30 a.m. and 4:00 – 7:00 p.m. on typical non-holiday weekdays when school is in session.

LOS: Level of service, a qualitative measure of transportation system performance described in the Highway Capacity Manual.

LTS: Level of traffic stress, a qualitative measure of bicyclist comfort initially developed by the Mineta Transportation Institute and modified by Montgomery Planning. The measure was applied by the Montgomery County Planning Department to develop the Bicycle Master Plan.

Methodology memoranda: LATR Guidelines maintained as living documents by Montgomery County Planning Department as a resource for subsequent scoping meetings.

MWCOG: Metropolitan Washington Council of Governments, a non-profit association responsible for the regional household travel survey and travel demand model relationships applied in the person-trip generation approach in Appendix Tables 1A and 1B. MWCOG also developed the region's Congestion Management Process, which is referenced as an available source for identifying congested arterials.

New trips: Site trips (including pass-by and diverted link) generated by a site, considering only those net additional trips proposed by the current development application.

Non-motorized trip: Trip by a single individual entering or leaving a study site by either walking or bicycling to/from a destination (see also: bicycle trip, pedestrian trip).

PLOC: Pedestrian Level of Comfort, a qualitative measure that captures how comfortable it is to walk

and roll in different conditions in Montgomery County.

Pedestrian trip: Trip by a single individual entering or leaving a study site by walking or rolling to/from a destination (see also: bicycle trip, non-motorized trip).

Person trip: Trip by a single individual entering or leaving a study site regardless of the mode of travel.

RCUA: Road Code Urban Area, designated by the Montgomery County Council in Chapter 49 of the Montgomery County Code:
http://www.montgomeryplanning.org/transportation/highways/RoadCode.shtm

TMAg: Traffic Mitigation Agreement, a legal document for implementing transportation demand management activities as described in Section 42-A of the County Code.

Total trips: Site trips (including pass-by and diverted link) generated by a site, including existing or previously approved uses on the site (see "new trips").

Total future conditions: Conditions based on the sum of auto trips from background conditions plus development site-generated traffic, prior to mitigation for any findings of inadequacy.

Total future with mitigation conditions: Conditions based on the total future conditions plus mitigation for any findings of inadequacy.

Transit trip: Trip by a single individual entering or leaving a study site for whom the predominant mode of travel to/from the site will be via transit. The Subdivision Staging Policy and LATR Guidelines presume that these trips will travel between the site and a transit station/stop as a non-motorized trip.

TDM: Transportation demand management (also known as travel demand management), a term describing a set of actions to reduce crowding by actions and strategies that shift demand by mode and/or time of day away from crowded facilities and services.

TRB: Transportation Research Board of the National Academy of Sciences, Engineering and Medicine in Washington, DC.

Trip Generation Handbook: Recommended practice for application of the Trip Generation Manual published by the Institute of Transportation Engineers (third edition published as draft in 2014 and final version pending as of early 2017).

Trip Generation Manual: Repository of vehicle trip generation rates published by the Institute of Transportation Engineers (ninth edition published in 2012 and tenth edition pending in 2017) that form initial starting points for person-trip estimates in Appendix Tables 1A and 1B. Suggested starting points for equivalencies between Trip Generation Manual and land uses in Appendix Tables 1A and 1B include:

- Port/Terminal (Land uses 000-099): Use site-specific rates reflecting site-specific intermodal tripmaking characteristics.
- Industrial (Land uses 100-199): Use Other category.
- Residential (Land uses 200-299): Use Residential category.
- Lodging (Land uses 300-399): Use Residential category.

- Recreational (Land uses 400-499): Use Retail category.
- Institutional (Land uses 500-599): Use site-specific rates reflecting customized TDM programs (including but not limited to school buses).
- Medical (Land uses 600-699): Use Retail category.
- Office (Land uses 700-799): Use Office category.
- Retail (Land uses 800-899): Use Retail category.
- Services (Land uses 900-999): Use Retail category.
- Site-specific assumptions for both vehicle trips and mode split may be proposed for any use.

Vehicle trip: Trip by a single vehicle entering or leaving a study site. For the purposes of LATR trip generation, vehicle trips are assumed to be equivalent to auto driver trips.

Walking distance to transit: Measured as the shortest distance along public sidewalks between the closest transit station entrance (including elevator and escalator portals) and the closest publicly-available site building entrance (unless specified otherwise in text).