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INTRODUCTION

A. Background

County Code Section 50-35(k) (the Adequate Public Facilities Ordinance or APFO) directs the Montgomery County Planning Board to approve preliminary plans of subdivision or other approvals that require a finding of Adequate Public Facilities (APF) only after finding that public facilities will be adequate to serve the subdivision. This involves forecasting future travel demand from private development and comparing it to the capacity of existing and programmed public transportation facilities.

In accordance with the *FY 2007-09 Growth Policy* adopted by the County Council on November 13, 2007, subdivision applications are subject to two transportation tests called Local Area Transportation Review (LATR) and Policy Area Mobility Review (PAMR).

B. Policy Areas

The County is divided into traffic zones, which are grouped into policy areas (Map 1). The congestion standards for both LATR and the mitigation requirements for PAMR are established by the County Council, adopted in these Guidelines, and applied to policy areas.

C. Local Area Transportation Review and Policy Area Mobility Review Standards

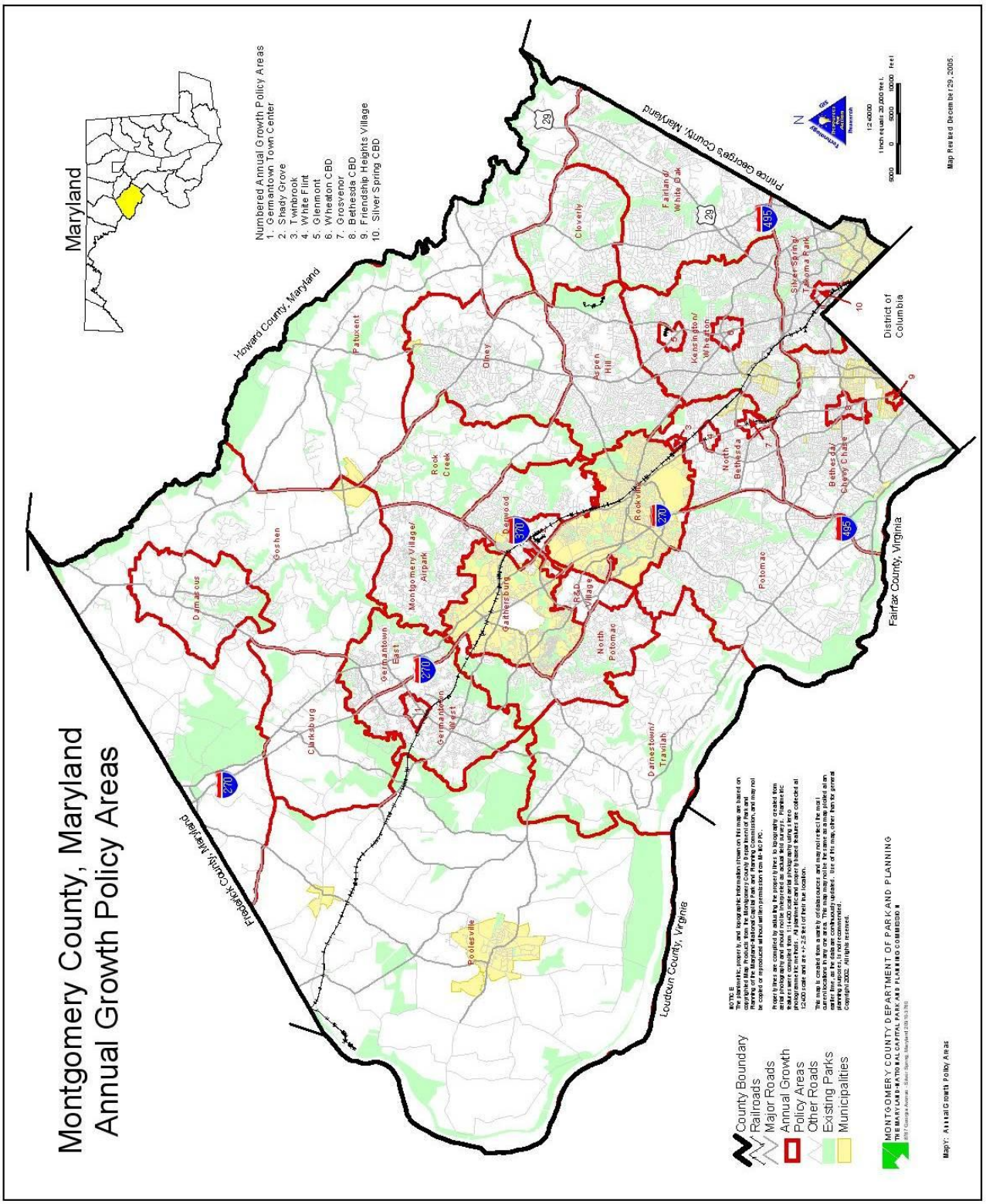
The *Local Area Transportation Review and Policy Area Mobility Review Guidelines* are to be used by applicants in preparing reports to the Planning Board that determine the requirement for and the scope of a traffic study or review prepared by an applicant for APF review and mandatory referral cases brought before the Planning Board.

The Guidelines are also recognized as the standard for reports to the Board of Appeals and the Hearing Examiner for special exception and zoning cases.

The Guidelines may also apply to building permit review for cases requiring an APF finding without subdivision, though in limited cases (less than 12 months vacancy, no increase in square footage, fewer than 30 peak hour trips) the APF test may be approved administratively by staff.

On May 15, 2008, the Planning Board adopted new PAMR trip mitigation requirements that are effective for subdivision applications submitted after July 1, 2008. This update reflects their actions.

Map 1: Policy Areas



The intent of the Guidelines is to establish criteria for determining if development can or cannot proceed. Pursuant to the Growth Policy, the Planning Board must not approve a subdivision if it finds that an unacceptable weekday peak-hour level of congestion will result after considering existing roads, programmed roads, available or programmed mass transportation, and physical improvements or trip mitigation measures to be provided by the applicant. If the subdivision will affect a nearby[1] intersection for which congestion is already unacceptable, then the subdivision may only be approved if it improves the situation to the degree described in these Guidelines.

Table 1
LATR Intersection Congestion Standards by Policy Area
(As of November 2007)

Congestion (Critical Lane Volume) Standards	Policy Area	
1350	Rural East	Rural West
1400	Damascus	
1425	Clarksburg Germantown West Gaithersburg City	Germantown East Montgomery Village/Airpark
1450	Cloverly North Potomac Olney	Potomac R&D Village
1475	Aspen Hill Fairland/White Oak	Derwood
1500	Rockville City	
1550	North Bethesda	
1600	Bethesda/Chevy Chase Kensington/Wheaton	Silver Spring/Takoma Park Germantown Town Center
1800	Bethesda CBD Friendship Heights CBD Glenmont Grosvenor Shady Grove	Silver Spring CBD Twinbrook Wheaton CBD White Flint

In situations where an unacceptable peak hour level of congestion will exist, the applicant, in consultation with Transportation Planning staff, the Montgomery County Department of Public Works and Transportation (DPWT), and/or the Maryland State Highway Administration (SHA), should use these procedures to develop recommendations for trip reduction, specific intersection improvements, or pedestrian, bicycle or transit enhancements that would mitigate

[1] See Section IIIB1, page 12

the transportation impact of development in these areas so that the Planning Board or another elected or appointed body could consider granting approval. The Guideline's procedures are intended to provide a near-term "snapshot in time" of estimated future traffic conditions and to present a reasonable estimate of traffic conditions at the time of development. They are not intended to establish delay-free conditions.

D. Policy Area Mobility Review

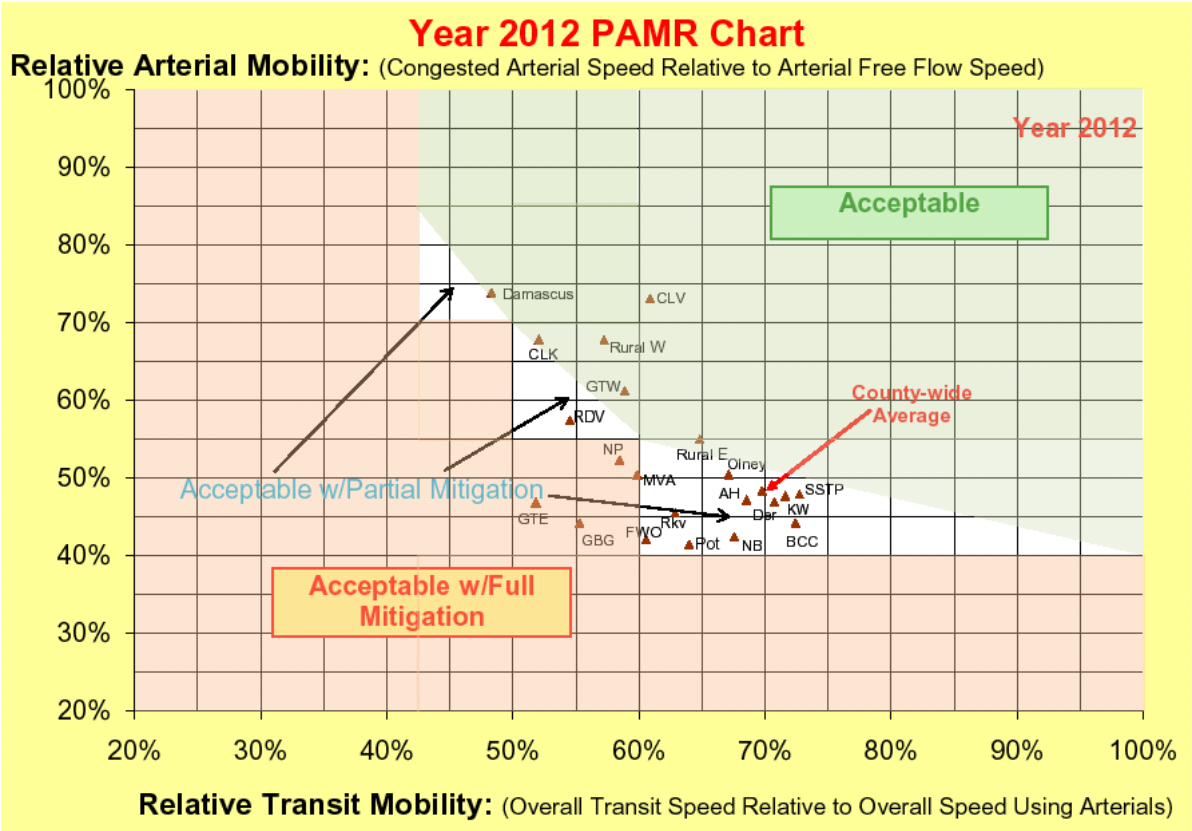
Policy Area Mobility Review, or PAMR, is a policy area-wide test of public transportation facilities. The test is separate from LATR in that it considers average transportation system performance for a geographic area (or policy area). The PAMR test provides a comparative measurement of two components depending on their relative availability:

- Relative Arterial Mobility measures congestion on the County's arterial roadway network by comparing forecasted congested speeds to free-flow speeds on roadways.

- Relative Transit Mobility is based on the relative speed by which journey to work trips can be made by transit as opposed to by auto.

The Growth Policy establishes adequacy by comparing Relative Arterial Mobility and Relative Transit Mobility and establishing mitigation requirements as shown in Figure 1.

Figure 1
Policy Area Mobility Review for Montgomery County (effective as of July 1, 2008)



When the annual PAMR analysis results in a finding of Acceptable with Partial Mitigation for a policy area for a fiscal year, the Planning Board must not approve any more subdivisions in that policy area in that fiscal year except as allowed by the current growth policy. For FY2009, the Planning Board will consider certain policy areas to be Acceptable with Partial Mitigation for transportation at the policy area level. The full listing of policy areas for which either full or partial mitigation is required in FY09 are listed below.

Table 2
Trip Mitigation Required by Policy Area – 2012 PAMR Results (effective July 1, 2008)

Policy Area	Trip Mitigation Required
Aspen Hill	40%
Bethesda/Chevy Chase*	30%
Derwood/Shady Grove	20%
Fairland/White Oak	45%
Gaithersburg City	100%
Germantown East	100%
Kensington/Wheaton*	15%
North Bethesda *	40%
North Potomac	100%
Olney	10%
Potomac	45%
R&D Village	35%
Silver Spring/Takoma Park*	10%
Rockville	30%

The trip mitigation also applies to the Metro Station Policy Areas (MSPAs) as indicated with an asterisk in the table above and itemized below:

- The Bethesda/Chevy Chase Policy Area includes the Bethesda CBD and Friendship Heights CBD Policy Areas
- The Derwood Policy Area includes the Shady Grove Policy Area
- The Kensington/Wheaton Policy Area includes the Glenmont and Wheaton CBD Policy Areas
- The North Bethesda Policy Area includes the Grosvenor, Twinbrook, and White Flint Policy Areas
- The Silver Spring/Takoma Park Policy Area includes the Silver Spring CBD Policy Area.

An applicant for a preliminary plan of subdivision need not take any mitigating action under Policy Area Mobility Review if the Planning Board finds that the proposed development will generate three or fewer peak hour trips.

E. Relationship between Policy Area Mobility Review and Local Area Transportation Review

In most instances, applicants will be required to submit a traffic statement with their development application concerning the need for an LATR. Transportation planning staff will use the following criteria to determine whether and when the applicant needs to submit a traffic study.

Application Types

PAMR Review and LATR are separate evaluation processes, but must be examined concurrently as part of a development application submission. Each applicant must satisfy both PAMR and LATR requirements. The requirements must be addressed in a single document, which may include a combination of traffic statements and traffic studies. There are four types of development review scenarios:

Type 1. Traffic statement describing exemption from both LATR and PAMR studies
A development case that requires neither an LATR study nor a PAMR study must submit a traffic statement describing the basis for the exemption. The traffic statement must identify the number of peak hour trips generated by the application during both weekday AM and PM peak periods, and the site's policy area and required mitigation percentage. Examples of Type 1 cases are:

- A site generating three or fewer peak hour vehicle trips
- A site generating fewer than 30 vehicle trips located in a policy area defined as Acceptable without mitigation for PAMR.

Type 2. Traffic study for LATR including statement regarding PAMR study exemption
A development case for a site that requires an LATR study, but only a PAMR statement, must include the PAMR statement within the LATR study. An example of a Type 2 case is a site generating 30 or more peak hour vehicle trips located in a Policy Area defined as Acceptable without mitigation for PAMR.

Type 3. Traffic study for PAMR including statement regarding LATR study exemption
A development case for a site that requires a PAMR study, but only an LATR statement, must include the LATR statement within the PAMR study. An example of a Type 3 case is a site generating between three and 30 total peak hour vehicle trips located in a policy area defined as Acceptable with Partial Mitigation or Acceptable with Full Mitigation for PAMR.

Type 4. Traffic study for both LATR and PAMR
A development case for a site that requires both an LATR study and a PAMR study must include both studies in the same submittal. An example of a Type 4 case is a site generating more than 30 peak hour vehicle trips located in a policy area defined as Acceptable with Partial Mitigation or Acceptable with Full Mitigation for PAMR.

Both PAMR and LATR use similar approaches to mitigating unacceptable impacts, including encouraging non-auto oriented solutions.

Table 3
PAMR and LATR Approaches to Mitigating Unacceptable Impacts

Priority	Mitigation Approach	PAMR Mechanism	LATR Mechanism	Single mitigation action addresses	Examples of mitigation actions
1	Peak hour vehicle trip reduction	Traffic mitigation agreement (TMAg)	Traffic mitigation agreement (TMAg)	Both PAMR and LATR impacts	Vehicle trip caps, flex-time/telecommute programs, shuttle services
2	Public transit capacity	Service provision	Not applicable	PAMR impacts only	Purchase of Ride-On bus with 12 years of operation
3	Non-auto facilities	Project implementation	Project implementation	Both PAMR and LATR impacts	Offsite sidewalks and bus shelters
4	Intersection improvements	Not applicable	Project implementation	LATR impacts only	Turn lanes, change of lane use configurations
5	Roadway link improvements	Project implementation	Project implementation only if site-specific LATR impacts are addressed	PAMR impacts, LATR impacts if applicable	Roadway widening

For both PAMR and LATR studies, applicants proposing any mitigating action other than weekday peak period vehicle trip reduction must include a statement describing their consideration of each of the higher-priority mitigation approaches and a rationale for selecting the mitigation approach or approaches proposed. The Planning Board will consider and accept mitigation approaches on a case-by-case basis, using these Guidelines.

II. Criteria for Screening Cases for Local Area Transportation Review

In cases where an LATR is required a traffic study must be filed as a part of the development submittal. Transportation planning staff will review the traffic statement and/or traffic study. If staff determines that a traffic study is necessary, but one was not submitted with the filed application, the application will not be considered complete until a traffic study is submitted. Figure 1 is an example of a checklist used by staff for determining the completeness of a traffic study. Any modifications in the analysis identified by staff's review are the responsibility of the applicant, after appropriate oral and/or written notice of the issues identified or change(s) required.

Staff will determine the acceptability of the conclusions and recommendations of a traffic study in consultation with the applicant, the Montgomery County Department of Public Works and Transportation (DPWT), the Maryland State Highway Authority (SHA), and community representatives. DPWT and SHA have 30 working days to review an approved study and comment on the feasibility of the recommendations, but the staff will work with the applicant to obtain comments from SHA and DPWT and transmit them to Transportation Planning staff four weeks prior to a scheduled Planning Board hearing. As long as a traffic study is determined to be complete, staff will consider the date of receipt as the completion date. Once a traffic study has been found to be complete, staff will notify the applicant in writing within 15 working days and, by copy of that letter, inform representatives of nearby community and/or business groups or associations. Traffic studies area available for public review from the application general file. Copies can be made by the public or requested from the applicant and their consultant. A digital copy (in .PDF format) will also be made available, with an electronic link provided in the Commission's Development Activity Information Center (DAIC).

A. Significantly Sized Project

The proposed development must be of sufficient size to have a measurable traffic impact on a specific local area to be considered in a local area transportation review. Measurable traffic impact is defined as a development that generates 30 or more total (i.e., existing, new, pass-by and diverted) weekday trips during the peak hour of the morning (6:30 a.m. to 9:30 a.m.) and/or evening (4:00 p.m. to 7:00 p.m.) peak period of adjacent roadway traffic.

Figure 2
Checklist for Determining the Completeness of Traffic Studies

Transportation Review Checklist **Development Name:**	**Plan Stage/Plan No.:**	
Transportation Review Type: 1. Traffic Statement describing exemption from both LATR and PAMR studies 2. Traffic Study for LATR including traffic statement regarding PAMR exemption 3. Traffic Study for PAMR including statement regarding LATR exemption 4. Traffic Study for Both LATR and PAMR		
Traffic study submitted/ Receipt date:		
Contact information of licensed or certified person who prepared it		
Are traffic counts acceptable? (i.e., within one year of submittal, when school in session, not widely variant from other counts on file)?		
Is there a qualitative statement of conditions under which the counts were taken?		
Electronic copy of traffic counts received? Receipt date:		
Does study follow LATR/PAMR Guidelines, the traffic study scope letter, and generally accepted transportation planning principles?		
• Does study reflect latest submitted plan and land uses?		
• Is existing traffic condition presented accurately in the traffic study?		
• Are pipeline developments adequately represented?		
• Are background (no-build) traffic conditions appropriate?		
• Is site trip generation according to LATR/PAMR requirements?		
• Are assumptions for % new, %diverted, and %pass-by acceptable?		
• Does site trip distribution match LATR/PAMR guidance?		
• Is site trip assignment acceptable?		
• Are Policy Area congestion standards, lane configurations, lane factors, and CLV calculations in the traffic study acceptable?		
• Are intersection/roadway improvement(s) identified in the traffic study acceptable?		
Is the Pedestrian Impact Statement acceptable?		
Are necessary Trip Reduction measure(s) identified in the traffic study?		
• What percentage of trips need to be reduced/mitigated?		
• Are Trip Reduction measures identified in the traffic study acceptable?		

The following criteria shall be used to determine if a proposed development will generate 30 or more weekday peak hour trips:

1a. For office or residential development, all peak hour trips are to be counted even if, as part of the analysis, some of the trips will be classified as pass-by trips or trips diverted to the site from existing traffic.

1b. For retail development, pass-by trips are to be included in establishing the 30-vehicle threshold requiring a traffic study, but not used for evaluating critical lane volume (CLV) measurement, as the trips are already on the network. They shall also be used for designing site access and circulation.

2. All land at one location within the County, including existing development on a parcel that is being modified or expanded or land available for development under common ownership or control by an applicant, including that land owned or controlled by separate corporations in which any stockholder (or family of the stockholder) owns 10 percent or more of the stock, shall be included. Staff shall exercise their professional judgment in consultation with the applicant in determining the appropriate land area to consider. Parcels separated by unbuilt roadways or local subdivision streets remain "land at one location" but parcels separated by business district streets, arterial roadways, major highways, or freeways cease to be "land at one location" even if still in common ownership.

For any subdivision that would generate 30-49 weekday peak hour vehicle trips, the Planning Board, after receiving a traffic study, must require that either all LATR requirements are met or the applicant must make an additional payment equal to 50 percent of the applicable transportation impact tax before it receives any building permit in the subdivision.

In certain circumstances, Transportation planning staff may, in consultation with the applicant, require analysis of traffic conditions during a different three-hour weekday peak period for example, 6 a.m. to 9 a.m. or 3:30 p.m. to 6:30 p.m., to reflect the location or trip-generation characteristics of the site, existing conditions, or background development as generators of traffic.

The number of trips shall be calculated using the following sources:

1. For all land uses in the Silver Spring, Bethesda, or Friendship Heights CBD Policy Areas, use the trip generation rates in Appendix C, Tables C-1 or C-2.

2. For all other parts of the county:
   a. For general office, general retail, residential, fast food restaurant, private school, child day-care center, automobile filling station, senior/elderly housing, or mini-warehouse, use the formulas provided in Appendix A and the tables provided in Appendix B.
   b. For other land uses, use the latest edition of the *Trip Generation Report* published by the Institute of Transportation Engineers (ITE).

For some specialized land uses, appropriate published trip-generation rates may not be available. In such cases, staff may request that determining rates for these land uses be a part of the traffic study. If special rates are to be used, staff must approve them prior to submission of the traffic study.

An applicant shall not avoid the intent of this requirement by submitting piecemeal applications or approval requests for zoning, subdivision, special exception, mandatory referral, or building permits. However, an applicant may submit a preliminary plan of subdivision for less than 30 peak hour trips at any one time provided the applicant agrees in writing that, upon filing future applications, the applicant will comply with the requirements of the LATR Guidelines when the total number of site-generated peak hour vehicle trips at one location has reached 30 or more. Then, a traffic study will be required to evaluate the impact of the total number of site-generated trips in accordance with the LATR Guidelines.

If use and occupancy permits for at least 75 percent of the originally approved development were issued more than 12 years before the LATR study scope request, the number of signalized intersections in the study will be based on the increased number of peak hour trips rather than the total number of peak hour trips. In these cases, an LATR study is not required for any expansion that generates five or fewer additional peak hour trips.

Transportation Planning staff may elect to waive these criteria if the development results in no net increase in weekday peak-hour trips.

B. Congestion Standards

Critical lane volume standards adopted by policy area in the most recent Growth Policy are shown in Table 2. Transportation Planning staff maintains an inventory of intersection traffic data based on traffic counts collected by DPWT, SHA, and private traffic consultants to provide applicants with a preliminary assessment of conditions in the vicinity of a proposed development.

C. Exceptions to the General Guidelines

There are several exceptions or additions to the general LATR process:

1. Potomac Policy Area: Only developments that staff consider will impact any of the following intersections will be subject to LATR: a) Montrose Road and Seven Locks Road, b) Democracy Boulevard and Seven Locks Road, c) Tuckerman Lane and Seven Locks Road, d) Bradley Boulevard and Seven Locks Road, e) Democracy Boulevard and Westlake Drive, f) Westlake Drive and Westlake Terrace, g) Westlake Drive and Tuckerman Lane, h) River Road and Bradley Boulevard, i) River Road and Piney Meetinghouse Road, and j) River Road and Seven Locks Road. No other intersections are to be studied.

2a. Metro Station Policy Areas: Bethesda CBD, Friendship Heights CBD, Glenmont, Grosvenor, Shady Grove, Silver Spring CBD, Twinbrook, Wheaton CBD, and White Flint. The congestion standard for these areas is a CLV of 1800 (see Table 2) and development within these areas is eligible for the Growth Policy's Alternative Review Procedure (see Appendix D). This procedure allows a developer to meet LATR requirements by 1) agreeing in a contract with the Planning Board and the DPWT to make a payment as designated in the Growth Policy, 2) participating in and supporting a Transportation Management Organization (TMO) if and when one exists 3) mitigating 50 percent of their total weekday morning and evening peak hour trips, and 4) conducting a traffic study to identify intersection improvements and/or trip mitigation measures that would have been required. Both residential and non-residential projects are eligible for the alternative review.

These guidelines define 50 percent mitigation of total weekday morning and evening peak-hour trips for the Alternate Review Procedure as follows. For non-mitigated trips the total number of vehicle trips generated based on County-wide average trip generation rates (or national trip generation rates from ITE or comparable sources for land uses not included in the Guideline appendices).

To calculate mitigated trips for the Alternate Review Procedure or to meet LATR/PAMR the applicant must explicitly document the conversion between person-trips and vehicle trips to account for transit use, vehicle occupancy, walk/bike use, internal site trip capture, and

telecommute options. The estimates should document the effect of home-based work trips separately from all other trips. Special trip rates in the appendices, such as for office uses within 1,000 feet of Metrorail stations outside the Beltway, or rates for any uses within the Bethesda, Silver Spring, and Friendship Heights CBDs should not be used in either non-mitigated or mitigated trip calculations. Countywide rates found in Appendix A and B are allowed, otherwise calculation rates and procedures recommended in documents published by the ITE or the TRB must be applied and referenced for staff to consider the quantification of any trip reduction proposal.

2b. Development in MSPAs will be reviewed in accordance with Section V of the Guidelines. These procedures provide specific criteria to satisfy the general guidelines included in the Growth Policy.

3. Area-specific trip generation rates have been developed for the Bethesda, Friendship Heights, and Silver Spring CBDs (see Appendix C).

III. Method and Preparation of Local Area Transportation Review Traffic Study

A. General Criteria and Analytical Techniques

The following general criteria and analytical techniques are to be used by applicants for subdivision, zoning, special exceptions, and mandatory referrals when submitting information to demonstrate the expected impact on public roadway intersections by the proposed development. The applicant's analysis should consider existing traffic, potential traffic that will be generated by their development, and nearby approved but unbuilt development (i.e., background).

The traffic study for a proposed development under consideration must include in background traffic all developments approved and not yet built and occupied prior to the submission of an application.

Transportation Planning staff may require that applications in the immediate vicinity of the subject application submitted in accordance with the LATR and PAMR Guidelines and filed simultaneously or within the same time frame be included in background traffic, even if the Planning Board has not approved them. If an application is approved after a traffic study has been submitted for another project and both require improvements for the same intersection(s), then the traffic study for the pending application must be updated to account for the traffic and improvements from the approved application.

Staff has 15 working days to develop a study scope after receiving a written request and will supply the applicant with information on approved but unbuilt developments, (background development), nearby intersections for study, trip distribution and traffic assignment guidelines, and other required information.

The traffic study should be submitted along with the application, following the guidelines in the *Development Review Manual*. If a traffic study is submitted at the same time as the application, the applicant will be notified concerning the completeness of the traffic study within 15 working days of the Development Review Committee (DRC) meeting at which the application is to be discussed. If not submitted before the DRC meeting, Transportation staff has 15 working days after submittal to notify the applicant as to whether or not the traffic study is complete.

For a trip mitigation program or an intersection improvement to be considered for more than one application, the program or improvement must provide enough capacity to allow all the applications participating in the program or improvement to satisfy the conditions of LATR. An intersection improvement may be used by two or more developments to meet LATR even though construction of the improvement has not been completed and open to the public.

To be considered, the program or improvement must provide sufficient capacity to:

- result in a calculated CLV in the total traffic condition that is less than the congestion standard for that policy area, or

- a number of trips equal to 150 percent of the CLV impact attributable to the development (for the LATR test). Any type of mitigation listed in this document or acceptable to the Planning Board can be used to achieve this goal.

When development is conditioned upon improvements by more than one application, those improvements must be bonded, under construction, or under contract for construction prior to the issuance of building permits for any new development. Construction of an improvement by one applicant does not relieve other applicants who have been conditioned to make the same improvement of their responsibility to participate in the cost of that improvement.

If the Planning Board grants an extension of the Adequate Public Facilities requirements, for an approved preliminary plan for example, Transportation Planning staff will determine if the traffic study needs to be updated based on the APF validity period, usually three years from the date originally approved by the Planning Board.

In some cases, a Special Exception modification may be submitted where the observed traffic reflects a level of activity greater than that already permitted. In such cases, the petitioner must estimate the reduction in traffic activity that would be caused by reducing the operations to the permitted level, and use those conditions for establishing adequate public facility impacts.

B. Scope of LATR/PAMR Traffic and Transportation Study

At a meeting or in written correspondence with Transportation Planning staff, the following aspects of the traffic study will be proposed by the applicant and/or provided by staff and agreed upon.

1. Intersections that are to be included in the traffic study. The number of intersections to be included will be based on the trips generated by the development under consideration (see Section II.A. for specific criteria regarding "land at one location"). As a general guideline, Table 4 indicates the number of signalized intersections from the site in each direction to be included in the traffic study, based on the maximum number of weekday peak-hour trips generated by the site, unless staff finds that special circumstances warrant a more limited study. For large projects, i.e., greater than 750 peak-hour site trips, the number of intersections shall reflect likely future signalized intersections as determined by staff and the applicant.

Table 4
Signalized Intersections to be Included in a Traffic Study

Weekday Peak Hour Site Trips	Minimum Number of Signalized Intersections in Each Direction
30 – 250	1
250 – 749	2
750 – 1,249	3
1,250 – 1,749	4
1,750 – 2,249	5
2,250 – 2,749	6
>2,750	7

The term "each direction" in the table above applies to every study intersection. For example, in a hypothetical grid, the first ring 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 among the cross streets encountered in the first ring. In this manner, 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.

Transportation Planning staff, in cooperation with the applicant, will use judgment and experience in deciding the significant intersections to be studied within Growth Policy parameters. Interchanges (future) will be afforded special considerations, including ramps/termini being treated as signalized intersections. The County's urban areas, including CBDs and MSPAs, have more closely-spaced intersections, suggesting that the major intersections be studied. Site access driveways are not included in the first ring of intersections.

Transportation Planning staff will consider other factors regarding the number of intersections to be included in the traffic study, such as:

- geographic boundaries such as parks, interstate routes, railroads
- political boundaries, though intersections in jurisdictions for which the Planning Board does not have subdivision authority will not be included in the traffic study
- contiguous land under common ownership
- the type of trip generated for example, new, diverted, or pass-by
- the functional classification of roadways for example, six-lane major highway
- An unsignalized intersection may be included in the definition of rings if the intersecting streets are both master planned roadways

However, intersections distant enough so that fewer than five peak hour vehicle trips from the site will travel through the intersection need not be included in the traffic study, even if they would otherwise be identified as candidate locations. An applicant may develop a trip distribution and assignment pattern prior to the study scoping process and work with staff to

determine which candidate locations would not require full study. This process will be documented in the study scoping correspondence.

2a. approved but unbuilt (i.e., background) development to be included in the traffic study. As a general guideline, the background development in a traffic study will be in the same geographic area as the intersections to be studied, generally defined by a polygon connecting the intersections farthest from the site. Staging of large background developments beyond the typical time period for a traffic study will be considered on a case-by-case basis.

2b. active trip mitigation programs, or physical improvements not completed, that have been required of other developments included in background traffic.

3. the adequacy of existing turning movement counts and need for additional data. Generally, traffic counts less than one year old when the traffic study is submitted are acceptable. Traffic counts should not be conducted on a Monday or a Friday, during summer months when public schools are not in session, on federal and/or state and/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 weather or other conditions have disrupted normal daily traffic.

4. factors, e.g., the specific trip pattern of development, to be used to compute the trip generation of the proposed development and developments included as background

5. the directional distribution and assignment of trips generated by the proposed development and developments included as background, in accordance with the latest publication of *Trip Distribution and Traffic Assignment Guidelines* (see Appendix D). Individual background developments that generate less than five peak hour trips (i.e., subdivisions of four or fewer single family detached dwelling units) are not generally included, as tracking those trips is not pragmatic.

6. mode split assumptions, if the traffic study is to include reductions in trips generated using vehicle-based trip factors.

7. transportation projects fully funded for construction within four years in the County's Capital Improvement Program (CIP), the State's Consolidated Transportation Program (CTP), or any municipal capital improvements program that are to be included in the analysis, along with techniques for estimating traffic diversion to major new programmed facilities.

a. Based on information provided by the SHA, two projects not listed as fully funded in the CTP should be assumed to be fully funded in the first four years of the CTP: the portion of the Intercounty Connector and the grade separation of MD 355 at Montrose and Randolph Roads.

8. traffic circulation and/or safety concerns related to site access (generally applied to public or private facilities with 800 or more seats or which can otherwise accommodate 800 or more people during an event).

9. a feasible range of types of traffic engineering improvements or trip mitigation measures associated with implementing the development.

10. the number, size, and use of buildings or types of residential units on the site.

11. queuing analysis, if required (see Section V).

12. Pedestrian and Bicycle Impact Statement

To assure safe and efficient pedestrian and bicycle access and circulation to and within the site, the study will include:

a. pedestrian and/or bicycle counts at intersections
b. the project's effect on pedestrian and bicyclist access and safety on the site and in the surrounding area
c. capital or operating modifications, if any, required to promote and maximize safe pedestrian and bicyclist access to the site and in the area around it
d. inventory map of existing and/or proposed sidewalks, off-road shared-use paths and/or bikeways near the site, noting whether or not the they are generally consistent with the County's Road Code design standards and for sidewalk/path and landscape panel width
e. lead-in sidewalks to the site and connections to the local area
f. existing and/or proposed bus stops, shelters and benches, including real time transit information
g. pedestrian and bicycle accommodations at nearby intersections; e.g. crosswalks, pedestrian signals, push buttons, median refuges, ADA-compatible ramps and signals
h. information on bus route numbers and service frequency
i. sufficient bicycle racks and/or lockers on site
j. recognition of peak pedestrian and/or bicycle activity periods.

13. Traffic Mitigation Agreement

An applicant proposing trip reduction must include the following information in a LATR or PAMR study for staff to find that the study is complete.

1) A description of proposed Traffic Mitigation Agreement (TMAg) elements that will also be included in staff report, and ultimately approved by and included in the opinions issued by either the Planning Board or the Board of Appeals:

    a) The vehicle trip reduction goals, including the specific number of peak hour vehicles to be reduced in both the weekday morning and evening peak periods.
    b) The TMAg's services or actions and a quantitative assessment of how they will achieve the required vehicle trip reduction objective.
    c) The duration of the TMAg (the expectation is majority of TMAg provisions will extend in perpetuity).
    d) Whether the TMAg will be enforced based on the provision of specified services or actions (regardless of outcome), the measured outcome (regardless of services or actions provided), or a combination of both approaches.
    e) The effectiveness measures to be used in enforcement.
    f) The method and frequency of monitoring.
    g) The penalties if the vehicle trip reduction goals are not met.

2) Written statements from both DPWT and Planning Department staffs concurring with the proposed approach.

In general, periodic TMAg performance monitoring by DPWT and a Planning Board auditor will be required for Traffic Mitigation Agreements that are designed to mitigate at least 30 peak hour vehicle trips. For projects mitigating fewer than 30 trips, the Planning Board may allow binding elements of a preliminary plan or site plan in lieu of a formal TMAg. For projects located in a

TMD, applicable TMD requirements also apply independent of any PAMR or LATR Traffic Mitigation Agreement require-ments.

PAMR trip mitigation requirements apply to both weekday morning and evening peak period trips.

To calculate mitigated trips for the Alternate Review Procedure or to meet LATR/PAMR, the applicant must explicitly document the conversion between person-trips and vehicle trips to account for transit use, vehicle occupancy, walk/bike use, internal site trip capture, and telecommute options. The estimates should document the effect of home-based work trips separately from all other trips. Special trip rates in the Appendices, such as for office uses within 1,000 feet of Metrorail stations outside the Beltway, or rates for any uses within the Bethesda, Silver Spring, and Friendship Heights CBDs should not be used in either non-mitigated or mitigated trip calculations. County wide rates in Appendices A and B are allowed, otherwise calculation rates and procedures recommended in documents published by ITE or the TRB must be applied and referenced for staff to consider the quantification of any trip reduction proposal.

For a zoning case, Transportation Planning staff may initiate a meeting with the applicant, the Hearing Examiner, and interested groups or individuals to establish the scope of the traffic analysis.

IV. Findings for Inadequate Facilities

In their report to the Planning Board, staff will present findings for each of the categories identified below and make recommendations relating to the adequacy of the transportation facilities. The Planning Board will use these findings and recommendations, along with comments and recommendations from the public, DPWT, SHA, and incorporated cities and towns within the County, to make its finding as to the adequacy of public facilities for the proposed development.

A. Transportation Solutions

If the applicant's traffic study identifies a local area condition that exceeds the congestion standard for that policy area, staff will notify the applicant, DPWT and/or SHA so that they can develop a feasible solution to mitigate the impact. The Planning Board may select traffic mitigation agreements, non-automobile transportation facilities, or physical road improvements, alone or in combination, as the required means to relieve local congestion. Priority will be given to non-physical improvements in MSPAs and CBDs (see Section VI).

The Growth Policy seeks to reduce congestion in areas where it may already be unacceptable. It stipulates that in policy area where local area conditions exceed the congestion standard the development may only be approved if the applicant agrees to mitigate the LATR impact by either:

- a sufficient number of trips to bring the local area condition to within the congestion standard, or
- a number of trips equal to 150 percent of the CLV impact attributable to the development. Any type of mitigation listed in this document or acceptable to the Planning Board can be used to achieve this goal.

If physical improvements are to be considered in MSPAs and CBDs, priority consideration will be given to improving the most congested intersections, even though they may not be in the specific local area of the traffic study. Efforts will be made to combine the resources of two or more developers to provide appropriate transportation improvements, be they physical intersection improvements or other trip mitigation measures.

Once the applicant, planning staff, and DPWT and/or SHA have identified feasible transportation solutions to obtain adequate local transportation capacity, these solutions will be incorporated as conditions of approval in the Transportation Planning staff report. These solutions could include additional traffic engineering or operations changes beyond those currently programmed, or non-programmed transit or ridesharing activities that would make the overall transportation system adequate.

If an applicant is participating in a traffic mitigation program and/or one or more intersection improvements to satisfy LATR requirements, that applicant shall be considered to have met LATR for any other intersection where the volume of trips generated by the site is less than five Critical Lane Movements.

In the case of developments that elect to use one of the Growth Policy's special procedures, the solutions must be identified and agreed to as above but will not be made conditions of approval.

B. Degree of Local Congestion

Staff will identify the degree of intersection congestion calculated for the peak hour of weekday morning and evening peak periods using the CLV method and the congestion standards by policy area listed in Table 1. For intersections that straddle policy area boundaries, the higher congestion standard shall be used.

In establishing the LATR congestion standards, an approximately equivalent transportation level of service that balances transit availability with roadway congestion in all policy areas of the County is assumed. In areas where greater transit accessibility and use exist, greater traffic congestion is permitted. Table 1, which shows the CLV congestion standard adopted by the County Council for each policy area, is based on this concept.

Staff will present findings comparing the calculated CLVs with the congestion standards of the nearby intersections. If the congestion standards are exceeded under background conditions, an applicant is required to provide a traffic mitigation program (consisting of either or both trip reduction or intersection improvements). The mitigation program should:

- bring the intersection to acceptable levels of congestion, or
- result in improved operating conditions equal to 150 percent of the CLV impact attributable to the development than those that would occur without the applicant's development.

C. Unavoidable Congestion

Transportation Planning staff will identify the degree to which alternate routes to serve the trips associated with the proposed development can be considered (see Section VII.F. Trip Assignment). If there are no appropriate alternate routes to use to avoid the congestion, then it must be assumed that trips from the proposed development will increase the local area congestion. It is not appropriate to anticipate that the trips associated with the development would use local streets other than for site access unless such streets have been functionally classified as being suitable for handling background and site-generated trips, e.g., arterial, business district, or higher classifications.

D. Transportation Demand Management Strategies

As part of the traffic study review and approval staff, in coordination DPWT, will confirm the degree to which transit, ridesharing, or other TDM activities can be considered to mitigate vehicle trips generated by a development. If there is sufficient potential for serving the proposed development and/or immediate area with transit or ridesharing services, then priority will be given to developing a transit alternative or trip mitigation program to mitigate the development's local and policy area traffic impact. If it is physically or fiscally ineffective for the public agencies to provide transit or ridesharing services, then it must be assumed that trips from the proposed development will increase the local area congestion. In most cases, TDM strategies will be included in TMAgs and monitored over time to ensure effectiveness.

E. Project-Related Traffic

Transportation Planning staff will identify the degree to which local traffic congestion is attributable to the proposed development. Traffic from three sources will be measured: 1) existing traffic, 2) background traffic generated by the sum total of all nearby approved but

unbuilt developments, and 3) total trips generated by the proposed development. The more trips the proposed development contributes to local traffic congestion, the greater the assumed severity of local impact.

F. Queuing Analysis

In addition to the CLV analysis, staff may require queuing analysis. The generally accepted practice for evaluating queue lengths in CBDs and MSPAs is to observe the existing maximum queue during the peak hour and add background and site-generated traffic, assuming LATR lane distribution factors, a 25-foot average vehicle length, and a division of hourly approach volumes equally among the number of signal cycles in the peak hour. Alternative methods, such as simulation using software such as Synchro or CORSIM, may be acceptable if simulation parameters are agreed to by staff.

The average queue length in the weekday peak hour should not extend more than 80 percent of the distance to an adjacent signalized intersection, provided the adjacent signalized intersections are greater than 300 feet apart. The 80 percent standard provides a margin of safety for peaking. If adjacent signalized intersections are closer together than 300 feet, the average queue length in the weekday peak hour should not extend more than 90 percent of the distance to the adjacent signalized intersection.

V. Procedures for Application in Central Business District and Metro Station Policy Areas

Except where noted, the technical definitions and procedures applied in CBDs and MSPAs will be consistent with those defined elsewhere in these guidelines. In reviewing CBD and MSPA applications, staff will use the following criteria.

A. Adequacy of Traffic Flows

1. Any intersection with a CLV of 1,800 or less will, in most cases, be considered acceptable with no further analysis required. However, staff may require queuing analysis if abnormally long queuing might be present even at intersections with a CLV below 1,800. Staff shall notify the applicant in writing as early in the review process as possible, and no later than written notification of a complete traffic study. The CLV will be calculated in accordance with the procedures defined in these Guidelines.

2. If the CLV is over 1,800, a queuing analysis shall be performed. Existing queues shall be measured by the applicant and total traffic (existing, background, and site) and planned roadway and circulation changes shall be taken into account. The generally accepted practice for evaluating queue lengths in CBDs and MSPAs is to observe the existing maximum queue during the peak hour and add background and site-generated traffic, assuming LATR lane distribution factors, a 25-foot average vehicle length, and a division of hourly approach volumes equally among the number of signal cycles in the peak hour. Alternative methods, such as simulation using software such as Synchro or CORSIM, may be acceptable if simulation parameters are agreed to by staff.

   The average queue length in the weekday peak hour should not extend more than 80 percent of the distance to an adjacent signalized intersection, provided the adjacent signalized intersections are greater than 300 feet apart. The 80 percent standard provides a margin of safety for peaking. If adjacent signalized intersections are closer together than 300 feet, the average queue length in the weekday peak hour should not extend more than 90 percent of the distance to the adjacent signalized intersection. The assumed signal timing analysis must be consistent with the crossing time required for pedestrians in paragraph B.2.b. of this section.

   If adequate conditions cannot be achieved and no mitigating measures are programmed that would result in an acceptable CLV, the transportation system in the CBD or MSPA may not be deemed adequate to support the development.

B. Site Access and Pedestrian/Bicycle Safety

In addition to the traffic flow analysis, applicants must demonstrate that the following guidelines are not violated by their site development.

1. Vehicle access points for parking and loading must be located so that they will not interfere with traffic flows on the adjacent streets or with access points to neighboring buildings or transit terminal areas. Access directly onto the major roads should be avoided, but if proposed it will be considered in the context of the application.

2. In addition to the Pedestrian and Bicycle Impact Statement (III.B.12), pedestrian and bicycle safety shall be assessed based on the following characteristics.

    a. Conflicts between pedestrians, bicycles, and vehicles shall be minimized. Actions shall be taken to ensure pedestrian and bicycle safety on and adjacent to the site.

    b. The applicant must provide evidence from DPWT that the pedestrian phase of the traffic signal cycle for each approach at the adjacent and critical intersections will provide at least enough time for pedestrians to completely cross the street walking at a speed of 3.5 feet per second. Where possible, enough time should be provided to completely cross while walking at 3.0 feet per second. An additional five seconds should be added to the minimum crossing time to reflect the delay caused by pedestrians stepping off the curb in competition with vehicles turning during the walk cycle.

        In MSPA cases where pedestrian crossing time criteria are not met, the applicant must inform DPWT and request them to revise the signal timing.

These aspects must be documented in the traffic study submitted as part of the development application. In the analysis, all pedestrian and bicycle movements are assumed to be made at the street level.

C. Other Criteria

1. Total traffic is defined as the existing traffic, plus trips from approved but unbuilt development, plus the trips from the proposed development during the peak hour of the weekday morning and evening peak periods.

2. Critical intersections are those within the CBD or MSPA, defined by Transportation Planning staff, generally adjacent to the site, or allowing site traffic to enter an arterial or major road. In some cases, where site volumes are large, additional intersections within or contiguous to the CBD or MSPA may be identified by staff for inclusion in the traffic study.

3. Vehicles can be assigned to parking garages encountered on their trip into the CBD or MSPA. The capacity of parking garages must be accounted for based on guidance from the Transportation Planning staff and consultation with DPWT.

4. Trip generation rates for background and site development traffic are contained in Appendices A, B, and C.

D. Information Provided by Staff

The following information will be provided to the applicant by Transportation Planning and DPWT staffs for use in the traffic study.

1. Existing traffic counts at selected locations. (The applicant shall be required to update these data if the application is submitted more than one year after the data were initially gathered.)

2. Trip generation rates

3. Directional distributions (see Appendix D)

4. Parking garage capacity information and locations of future public parking garages

5. A listing of background developments.

E. Traffic Mitigation Agreement

Each applicant in a TMD must have a proposed TMAg (see p.17) outlining a participation plan for trip reduction measures and other strategies for participating in efforts to achieve the mode share goals for that area. This plan should be prepared in conjunction with the area's TMD, DPWT, and Transportation Planning staff. The TMAg for TMD participation may be structured to incorporate any applicable PAMR requirements.

F. Participation in Transportation Improvements

The Planning Board may require that applicants participate in some capital program transportation improvements. Participation will be proportional to the development impact on the improvement and will be determined by Transportation Planning staff, DPWT, and SHA. If the traffic study identifies roadway changes or other transportation-related activities required to mitigate the proposed development's on- or off-site impact, these changes will be the responsibility of the applicant as part of satisfying LATR procedures.

VI. Methods to Reduce Local Area Transportation Review and Policy Area Mobility Review Impact

A. Methods to Reduce LATR or PAMR Impact for Residential and Non-Residential Development

1. Traffic Mitigation Agreement Measures

The applicant may be required to reduce LATR and PAMR impact by entering into a legally-binding agreement with the Planning Board and DPWT to mitigate the impact of all or a part of their site-generated trips within the policy area where the site is located. Each traffic mitigation program will be required to operate for at least 12 years once trip reduction requirements are initially achieved and after use and occupancy permits are drawn. Many elements are designed to continue in perpetuity.

The following are examples of the measures that could be included in a TMAg:

- Subsidizing transit fares to increase ridership on existing or other transit bus routes
- Constructing a new park-and-ride facility and maintaining it over time
- Providing funds to increase use of an existing park-and-ride facility
- Funding a private shuttle service; e.g., to and from the site to a nearby Metrorail station or to a park-and-ride facility
- Constructing queue-jumper lanes, providing traffic signal priority treatment for transit devices and other techniques to improve bus travel times. Only results that are shown to improve travel times are to be considered.
- Parking management activities
- Establishing live-near-work programs

Other measures may be suggested by applicants, Transportation Planning staff, or DPWT. Creative approaches to reducing traffic impacts are encouraged.

TMAgs require monitoring to ensure compliance with the conditions of the contract. Monitoring will be done on a quarterly basis, at minimum, at the applicant's expense by DWPT staff or a consultant selected by the Planning Board. If the goals are not being met, DPWT staff or the consultant shall monitor the TMAg on a monthly basis until the goals are met for three consecutive months. Transportation Planning staff and DPWT shall work with the applicant to seek additional measures to ensure compliance during periods when the goals are not being met.

2. Non-Automobile Transportation Facilities

To maintain an approximately equivalent transportation local level of service for both auto and non-auto modes of travel, the Planning Board may permit a reduction in the amount of roadway improvements or traffic mitigation in exchange for the installation or construction of non-automobile transportation facilities that will enhance pedestrian safety or encourage non-automobile mode choices, including sidewalks, bike paths, curb extensions, countdown pedestrian signals, Super Shelters, bus shelters and benches, bike lockers, and static or real time transit information signs.

Such facilities must be implemented to offset the local area impact at the intersections that exceed the congestion standard and the need for an improvement has been identified. Thus, trip distribution and assignment assumptions are a key factor in determining local area intersection impacts and the level of trip mitigation required.

In determining the adequacy of such improvements in mitigating local area congestion, the Planning Board must balance the environmental and community impacts of reducing congestion at an intersection against the safe and efficient accommodation of pedestrians, bike riders, and bus patrons. Periodic monitoring shall not be required of non-automobile transportation facilities.

a. Construction of Sidewalks, Bike Paths, Curb Extensions, Pedestrian Refuge Islands, Accessible or Countdown Pedestrian Signals, and Handicap Ramps

An applicant may propose to reduce LATR impact by constructing off-site sidewalks and/or bike paths, curb extensions, pedestrian refuge islands, accessible or countdown pedestrian signals and handicap ramps that provide safe access from proposed or existing development to any of the following uses:

- Transit stations or stops (rail or bus)
- Public facilities (school, library, park, post office, etc.)
- Recreation centers
- Retail centers that employ 20 or more persons at any time
- Housing projects
- Office centers that employ 100 or more persons
- Existing sidewalks or bike paths
- Adjacent development or private amenity space (sitting area, theater, community center).

Curb extensions may be considered along streets where on-street parking already exists, provided the extenstions don't reduce traffic capacity and operations at the proposed intersections. Accessible pedestrian signals (for the visually-impaired community), retrofitting existing traffic signals with countdown lights, and reconstructing existing sub-standard handicap ramps (to current ADA guidelines) should be allowed as optional facilities.

These uses must be within one-quarter mile of the proposed development. 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.

New bikeway segments can be indentified from the *Countywide Bikeway Functional Master Plan*. The Plan's prioritization strategy lists bikeways categorized by activity center for example, Metro stations, CBDs, park trails, etc.

b. Provision of Super Shelters, Bus Shelters, and Benches

An applicant may propose to reduce LATR impact by constructing a "Super Shelter," bus shelter or bench, including a concrete pad, to encourage bus use, which reduces weekday peak-hour vehicle trips by diverting some person-trips to buses. Two types of shelters can be provided: standard bus shelters and Super Shelters.

- The County has an agreement with Clear Channel Outdoor, Inc. (CCO) to provide a minimum of 500 standard bus shelters in the County. CCO has first choice of locations for these shelters, a number of which will carry advertising. Standard bus shelters to be provided under LATR must be located in areas where CCO chooses not to provide shelters. CCO must be offered right of first refusal for any new sites before shelter placement is accepted from the developer.

- "Super Shelters" include heating and lighting, have larger capacity, four walls (with openings to enter and exit), and a higher level of design than standard shelters. A Super Shelter is located on Rockville Pike near Marinelli Road (as part of an agreement with Target/Home Depot). These shelters may be provided only at locations where CCO has chosen not to provide shelters. If agreed to by DPWT and the developer, Super Shelters should be incorporated as part of development planning and will need to be coordinated with existing and planned locations for standard shelters.

All bus shelters must be on a bus route, at an existing stop, within one-quarter mile of the edge of the proposed development. The frequency of the transit service must be at intervals of 20 minutes or less during the weekday morning and evening peak periods.

For any off-site improvement shown in Table 5, pedestrians and bicyclists should be able to safely cross any roadway to reach their destination. The applicant may provide improvements that Transportation Planning and DPWT staffs agree would increase the safety of the crossing.

c. Provision of Bike Lockers

An applicant may propose to reduce LATR impact by providing bike lockers for a minimum of eight bikes at an activity center located within a one-mile radius of the edge of the development.

d. Provision of Transit Information Signs and Kiosks

An applicant may propose to reduce LATR impact by providing static or electronic signs, and/or information kiosks at bus shelters, large office buildings, retail centers, transit centers, or residential complexes. They should communicate scheduled or real-time transit information, for example, the scheduled or estimated arrival of the next bus on a given route.

Static transit information signs may be provided only at locations other than CCO-provided standard bus shelters, since the CCO agreement already provides for type of information. For static transit information provided at office buildings, retail centers, etc., the applicant should provide for changing this information three times a year.

e. Graduated and Maximum Trip Reduction Credits

Related to the construction or provision of the above (a through d), the maximum trip credit for any development is related to the congestion standard for that policy area. In policy areas with higher congestion standards, the maximum reduction in trips is higher in recognition of the desire to enhance pedestrian safety and/or encourage transit and bike use in these areas. (See Table 5).

Table 5 identifies trip reduction options. Any or all of the options may be used for a given application. The maximum trip reduction per development is a function of the policy area congestion standard.

Table 5
Graduated and Maximum Trip Credits Related to Congestion Standards

Non-Automobile Transportation Facility	Trip Credit vs Congestion Standard		
	1350-1500	1550-1600	1800
100 linear feet of five-foot wide sidewalk	0.5	0.75	1.0
100 linear feet of eight-foot wide bike path	0.5	0.75	1.0
Curb Extension/Pedestrian Refuge Island/Handicap Ramp	2.0	3.0	4.0
Accessible or Countdown Pedestrian Signals/ Intersection	1.0	2.0	3.0
Bus Shelter	5.0	7.5	10.0
"Super" Bus Shelter	10.0	15.0	20.0
Bus Bench with Pad	0.5	0.75	1.0
Information Kiosk	1.5	3.0	4.5
Bike Locker (set of eight)	2.0	3.0	4.0
Real-Time Transit Information Sign	10.0	15.0	20.0
Static Transit Information Sign	0.25	0.4	0.5
Maximum Trip Credits	60	90	120

B. Procedures for Applying Section VI – Trip Reduction Methods

The determination of the total number of trips generated by a proposed development will be made prior to any reduction. If a proposed development generated more than 30 total weekday peak-hour trips, a traffic study would be required. If an applicant proposes a traffic mitigation agreement or non-automobile transportation facilities, the reduction will be accounted for in the traffic study. An applicant proposing these trip reduction strategies may be required to gather data on current bus patronage or pedestrian/bicycle activity within the local area to aid in evaluating effectiveness.

The applicant may only apply a trip reduction method after the total number of peak-hour trips is determined using standard trip rates.

C. Payment Instead of Construction

For requirements of LATR where an applicant has made a good faith effort to implement an acceptable improvement and where the Board finds that a desirable improvement cannot feasibly be implemented by the applicant but that it can be implemented by a public agency within four years after the subdivision is approved, The County Council has authorized the Planning Board to accept payment to the County of a fee commensurate with the cost of the required improvement.

VII. Assigning Values to Traffic Study Factors

A. Capital Improvements Program Definition

If the applicant finds it necessary or appropriate to incorporate programmed transportation improvements into a traffic study, they must rely upon the County's Capital Improvement Program (CIP) or the State's Consolidated Transportation Program (CTP). For an improvement to qualify for use in a traffic study, it must be fully funded in the CIP or CTP for construction within four years as of the date of the traffic study's submission.

However, under certain circumstances, staff may recommend the Planning Board delay a decision on physical intersection improvements until building permit, the is when the County or State is ready to purchase or construct a capital project. The Planning Board would require the developer to consult with the County or State when building permit applications are filed. If the County or State agrees in writing that the capital project will be constructed within four years, then the developer will contribute an amount equivalent to the cost of the LATR improvements at that time.

B. Trip Generation

Trip generation equations and rates are shown in Appendix A for nine general land uses: general office, retail, residential, fast food restaurants, child day care centers, private schools/educational institutions, senior/elderly housing, mini-warehouse, and automobile filling stations with or without ancillary uses for car washes, convenience stores, and garages. Equations for calculating trips from other land uses or zoning classifications can be obtained from ITE's latest edition of the *Trip Generation* report. Guidance regarding pass-by and internal trip capture rates can be found in the current ITE *Trip Generation Handbook (2nd Edition).* Staff can assist in calculating tips and/or using the trip tables in Appendix B. In the Silver Spring, Bethesda, and Friendship Heights CBDs, different rates reflecting higher transit use apply (see Appendix C).

The rate for a retail site over 200,000 square feet GLA will be set after discussion with staff and the applicant's analysis of one or more similar-sized retail sites within Montgomery County. In lieu of data collection, a retail rate set at two times the latest edition of ITE's *Trip Generation* report rate may be used.

Transportation Planning staff is authorized to make minor technical changes to Appendices A, B, and C as needed to reflect new information or to correct errors. Users should check with staff to ensure they are using the latest version.

In some cases, adjusting the trips from the equations may be appropriate. Examples include the effect of pass-by 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. These will be considered on a case-by-case basis, using the best available information concerning each site situation. There may be instances where site characteristics will make it appropriate to deviate from the referenced rates. These proposed deviations could be determined by ground counts of

comparable facilities, preferably in Montgomery County, and will be considered by staff and used with their concurrence.

C. Peak Hour

The traffic study shall be based on the highest one-hour period that occurs during the typical weekday morning (6:30 a.m. – 9:30 a.m.) and/or evening (4 p.m. – 7 p.m.) peak periods, i.e., the street peak, or the time period established and agreed to in Section II.A. This one-hour period shall be determined from the highest sum of the existing traffic entering all approaches to each intersection during four consecutive 15-minute intervals.

D. Trip Distribution

Staff shall provide the applicant with the directional distribution of background and site traffic generated by office and residential uses, per the latest edition of the *Trip Distribution and Traffic Assignment Guidelines* (see Appendix D). The distribution of trips entering and leaving the proposed development and background development via all access points must be justified by the relative locations of other traffic generators (employment centers, commercial centers, regional or area shopping centers, transportation terminals, or trip table information provided by staff). For land uses not covered by the guidelines, distribution should be developed in consultation with Transportation Planning staff.

E. Directional Split

The directional split is the percentage of the generated trips entering or leaving the site during the peak hour. Refer to Appendix A for the directional split for general land uses and to Appendix C for directional split assumptions for the Bethesda, Friendship Heights, and Silver Spring CBDs. For all other uses, refer to the latest edition of ITE's *Trip Generation* report. If data are not available, staff and the applicant will determine an appropriate in/out directional split.

F. Trip Assignment

The distribution factors furnished by Transportation Planning staff shall be applied to the generated trips, and the resulting volumes assigned to the road network providing access to the proposed development. These trips will be added to existing traffic as well as the trips generated by background development to determine the adequacy of transportation facilities. The assignment is to be extended to the nearest major intersection, or intersections, as determined by staff (see Table 4).

Trip distribution and assignment is an estimate of the impact of future traffic on the nearby road network and is less accurate farther from the trip origin/destination.

Once an intersection under assignment conditions of existing plus background traffic or existing plus background plus site-generated traffic exceeds a CLV of 2,000, diversions to alternate routes may be considered if there are feasible alternatives, as discussed in paragraph IV.C., Unavoidable Congestion. Appropriate balancing of assignments to reflect impacts of the site on both the primary and alternate routes is necessary. Impacts on the primary and alternate intersections must be identified and mitigated in accordance with the congestion standards of these Guidelines. Such situations should be discussed with staff, SHA, and DPWT and resolved on a case-by-case basis before presentation to the Planning Board.

G. Critical Lane Volume Analysis

At the intersections identified by Transportation Planning staff, the existing, background, and site-generated traffic is to be related to the adequacy of the intersection by using the critical lane volume method (see Section J). The methodology and assumptions shall be updated to maintain consistency with revisions to the *Highway Capacity Manual* published by the TRB. The analysis should be carried out for the peak hour of both the weekday morning and evening peak periods and should use traffic data for non-holiday weekdays.

H. Traffic Data

1. Current existing traffic volume data may be available from either Transportation Planning's traffic count database, SHA or DPWT.

2. New traffic counts should be conducted by the applicant if, in the opinion of Transportation Planning staff, traffic volumes have increased due to some change in the traffic pattern, such as the completion of a development project after the count was made.

3. If turning movement data are older than one year when the traffic study is submitted or, if there are locations for which data are non-existent, it must be acquired by the applicant using his/her own resources.

4. Intersection traffic counts obtained from public agencies or conducted by the applicant must be manual turning movement counts of vehicles and pedestrian/bicycle crossing volumes covering the typical weekday peak periods, i.e., 6:30 a.m. – 9:30 a.m. and 4 p.m. – 7 p.m., or the time period established and agreed to in Section II.A. The data must be collected in 15-minute intervals to allow selection of the peak hour within the nearest 15 minutes (4:00-5:00, 4:15-5:15, 4:30-5:30, 4:45-5:45, 5:00-6:00, 5:15-6:15, 5:30-6:30, 5:45-6:45, or 6:00-7:00) as described in Section VII.C. All weekday peak-period (6:30 a.m. – 9:30 a.m. and 4 p.m. – 7 p.m.) turning movement data are required to be included with and submitted as part of the applicant's traffic study. All intersection traffic counts must be submitted in a digital format provided by staff. The subsequent digital database will be available upon request to developers, consultants, and others.

5. Traffic counts affected by adverse weather or nearby traffic incidents will not be accepted.

6. For applicants resubmitting all or portions of their development plans for the Planning Board's approval under the expired Expedited Development Approval legislation that requires LATR, the traffic study must be updated if the traffic counts were collected more than one year from the date of resubmittal, and must reflect updated background development.

I. Adequate Accommodation of Traffic

A highway system's ability to carry traffic is expressed in level of congestion at critical locations, usually an intersection. Current CLV congestion standards for intersections in each policy are (Table 1) are based on achieving approximately equivalent total transportation levels of service

in all areas of the County. Greater vehicular traffic congestion is permitted in policy areas with greater transit accessibility and use.

J. Critical Lane Volume Method

The Critical Lane Volume method of calculating the level of congestion at a signalized or unsignalized intersection is generally accepted by most public agencies in Maryland, SHA, the DPWT, the Cities of Rockville, Gaithersburg, and Takoma Park, and M-NCPPC Transportation Planning staff. The methodology will fit most intersection configurations and can be varied easily for special situations and unusual conditions.

While some assumptions for example, lane use factors, may vary between jurisdictions, the general CLV methodology is consistent. An excellent reference source is SHA's web site: www.sha.state.md.us/businesswithsha/permits/ohd/impact_appendix/asp

An applicant can use the following procedure at signalized or unsignalized intersections. For unsignalized intersections, a two-phase operation should be assumed. The traffic volumes used in the analysis are those approaching the intersection as determined in each step of the traffic study (existing, existing plus background, and existing plus background plus site).

The following steps describe how 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 the total volume on each entering approach to an intersection and the traffic movement 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 by-pass). Also, subtract the left-turn volume if it is provided with an exclusive lane.

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 the following table. (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 staff and/or DPWT regarding any overlap signal phasing.)

Table 6
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 2000 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.

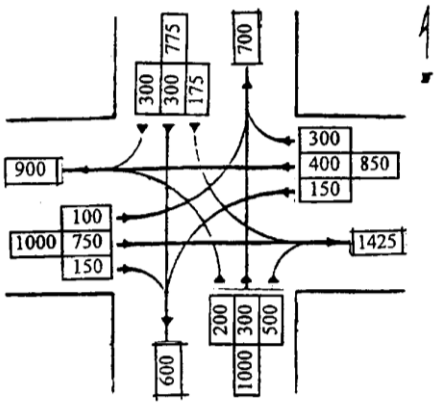
Step 6. The higher total of Step 4 or Step 5 is the critical volume for phase one (e.g., north-south).

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

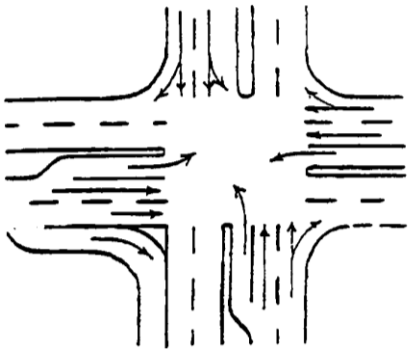
Step 8. Sum the critical lane volumes for the two phases to determine the CLV for the intersection. (Note: At some intersections, two opposing flows may move on separate phases. For these cases, each phase becomes a part of the intersection's CLV. Check with Transportation Planning staff for clarification.)

Step 9. Compare the resultant CLV for the intersection with the congestion standards in Table 1.

Table 7
Critical Volume Calculations



Turning Volumes



Intersection Geometrics

Direction from the	Lane Approach Volume		Critical Lane-Use Factor		Approach Volume		Opposing Lefts		Lane Volume Per Approach
North	775 [1]	X	0.53	=	411	+	200	=	611
South	800 [2]	X	0.53	=	424	+	175	=	599
Or South	500	X	1.00	=	500	+	175	=	675 [5]
East	700 [3]	X	0.53	=	371	+	100	=	471
West	750 [4]	x	0.53	=	398	+	150	=	548 [5]

[1] Approach volumes sum of throughs, rights, and lefts in two lanes
[2] For a heavy right turn, evaluate worst of rights in one lane or through and rights in two lanes
[3] Approach volume sum of throughs and rights in two lanes

[4] Approach volume is through only because of free right and separate left
[5] Intersection Critical Lane Volume = higher sum = 675 + 548 = 1,223

The following conditions should be observed where applicable:

- Right turn overlaps can be assumed where an exclusive right turn lane exists.
- The CLV for five leg intersections should be addressed according to the individual signal phases identified in the field.
- In cases where pedestrian crossing time criteria are not met, the applicant must inform DPWT and request that they revise the signal timing.
- The CLV calculation for roundabouts should calculate the sum of the approach flow and circulating flows, as defined by the *Highway Capacity Manual*, for each approach and comparing the highest sum to the LATR standards.

K. Required Traffic Study Submittals to Satisfy Local Area Transportation Review

Two copies of the traffic study must be submitted with the development application. Once Transportation Planning staff confirms that the traffic study is complete, 10 copies must be submitted within five working days of notification.

In an effort to standardize the information included with a traffic study, the following items must be submitted before the application is considered complete.

1. A site or area map showing existing roads that serve the site.

2. The location on the site map of any CIP or CTP programmed transportation improvements that affect traffic at the critical intersections.

3. Name and contact information of the licensed or certified professional submitting the traffic study. Any traffic study required for LATR must be submitted by a registered Professional Engineer (PE), Certified Professional Traffic Operations Engineer (PTOE), or Certified Professional Transportation Planner (PTP). This requirement will be effective for studies submitted after July 1, 2008.

4. Existing weekday morning and evening peak period vehicle and pedestrian/bicycle traffic count summaries for the critical intersections identified by Transportation Planning staff. It will include a qualitative statement regarding the observed traffic conditions if, during the time period that the counts were obtained, any queuing from downstream locations or other operational issues were observed.

5. Nearby approved but unbuilt developments and associated improvements that would affect traffic at the critical intersections with their location shown on the area map. (This information is provided by staff and included as part of the traffic study.)

6. A table showing the weekday morning and evening peak hour trips generated by each of the nearby approved but unbuilt developments, including the source of the generation rates/equations for each type of development.

7. The trip distribution patterns, as percentages, for nearby approved but unbuilt developments during the weekday morning and evening peak hours, with the pattern being shown on an area map.

8. Weekday morning and evening peak hour trips entering and leaving the site, generated by the proposed development, including the site driveways.

9. The trip distribution patterns, as percentages, for the proposed development during the weekday morning and evening peak hours, with the pattern being shown on an area map.

10. Maps that show separately and in combination:

    a. Existing weekday morning and evening peak hour traffic volumes using the affected highway system, including turning movements at the critical intersections.

    b. Projected weekday morning and evening peak hour trips assigned to the affected highway system for all nearby approved developments, included as part of the background.

    c. The traffic volumes derived by adding trips from approved development to existing traffic.

    d. Projected weekday morning and evening peak hour trips assigned to the affected highway system for the proposed development.

    e. The traffic volumes derived by adding site trips to the sum of existing plus background traffic.

11. Any study performed to help determine how to assign recorded or proposed development trips, such as a license plate study or special turning movement counts.

12. Copies of all critical lane volume analyses, showing calculations for each approach.

13. A list of all transportation improvements, if any, that the applicant agrees to provide and a scaled drawing of each improvement showing available or needed right-of-way, proposed roadway widening, and area available for sidewalks, bike path, landscaping, as required.

14. Electronic copies of all vehicle, pedestrian, and bicycle traffic counts in approved digital format submitted to MCP-TrafficCounts@mncppc-mc.org. Traffic counts affected by adverse weather or nearby traffic incidents will not be accepted.

15. Once accepted, a copy of the traffic study as a PDF will be submitted to staff for inclusion in the application file and available for public view via the web site's Development Activity Information Center or FTP.

VIII. Policy Area Mobility Review

A. Background

There are two components to PAMR—Relative Arterial Mobility and Relative Transit Mobility for each policy area.

Relative Arterial Mobility measures congestion on the County's arterial roadway network. It is based on the urban street delay level of service in the 2000 *Highway Capacity Manual*, published by the TRB. Congestion is measured by comparing modeled (congested) speeds to free-flow speeds on arterial roadways and then assigning letter grades to the various levels of roadway congestion. A indicates the best level of service and F indicates the worst levels. For a trip along an urban street that has a free-flow speed (generally akin to posted speed) of 40 mph, LOS A conditions exist when the actual travel speed is at least 34 mph, including delays experienced at traffic signals. At the other end of the spectrum, LOS F conditions exist when the actual travel speed is below 10 mph.

Table 8
Relative Arterial Mobility and Arterial LOS

If the actual urban street travel speed is	PAMR Arterial LOS is
At least 85% of the free-flow speed	A
At least 70% of the highway speed	B
At least 55% of the highway speed	C
At least 40% of the highway speed	D
At least 25% of the highway speed	E
Less than 25% of the highway speed	F

Any policy area with an actual urban street travel speed equal to or less than 40 percent of the highway speed must be considered acceptable only with full mitigation for transportation.

The PAMR evaluates conditions only on the arterial roadway network. Freeway level of service is not directly measured because County development contributes a relatively modest proportion of freeway trips and because the County has limited influence over the design and operations of the freeway system. However, because arterial travel substitutes for some freeway travel, PAMR indirectly measures freeway congestion to the extent that travelers choose local roadways over congested freeways.

Relative Transit Mobility is based on the Transit/Auto Travel Time level of service concept in the 1999 *Transit Capacity and Quality of Service Manual* published by the TRB. It is defined as the relative speed by which journey to work trips can be made by transit as opposed to by auto. This concept assigns letter grades to various levels of transit service, so that LOS A conditions exist when a trip can be made more quickly by transit (including walk-access/drive-access and wait times) than by single-occupant auto. An LOS A condition exists in the Washington region for

certain rail transit trips with short walk times at both ends of the trip and some bus trips in HOV corridors. LOS F conditions exist when a trip takes more than an hour longer to make by transit than by single-occupant auto.

This ratio between auto and transit travel times can also be expressed in an inverse relationship, defined by modal speed. If a trip can be made in less time by transit than by auto, the effective transit speed is greater than the effective auto speed. Based on the typical roadway network speed during the morning peak period, the Planning Board established the following relationship between auto and transit trips:

Table 9
Relative Transit Mobility and Transit LOS

If the effective transit speed is	PAMR Transit LOS is
100% or more (e.g., faster) than the highway speed	A
At least 75% of the highway speed	B
At least 60% of the highway speed	C
At least 50% of the highway speed	D
At least 42.5% of the highway speed	E
Less than 42.5% of the highway speed	F

Any policy area with an effective transit speed equal to or less than 42.5 percent of the highway speed must be considered acceptable only with full mitigation for transportation.

The PAMR Arterial LOS and the PAMR Transit LOS standards are inversely related, reflecting the County's long-standing policy to encourage concentrations of development near high-quality transit. To accomplish this policy, greater levels of roadway congestion should be tolerated in areas where high-quality transit options are available with the equivalencies in Table 4.2.

Table 10
Equivalency Between Transit LOS and Arterial LOS

If the forecasted PAMR Transit LOS is:	The minimum acceptable PAMR Arterial LOS standard is:
A	D*
B	D*
C	D
D	C
E	B
F	A

* This chart reflects the County Council's policy decision that the PAMR arterial LOS standard should not fall below D, even when the PAMR Transit LOS standard is A or B.

Using a transportation planning model, the staff has computed the relationship between a programmed set of transportation facilities and the geographic pattern of existing and approved jobs and housing units. The traffic model tests this future land use pattern for its traffic impact, comparing the resulting traffic volume and distribution to the arterial level of service standard for each policy area.

This analysis results in a finding of Acceptable with Full Mitigation for a policy area if:

- the level of service on local roads in the policy area is expected to exceed the arterial level of service standard, or
- the magnitude of the hypothetical future land use patterns in that policy area will cause the level of service on local roads in any other policy area to exceed the arterial level of service standard for that policy area.

If this annual analysis results in a finding of Acceptable with Full Mitigation for a policy area for a fiscal year, the Planning Board must not approve any more subdivisions in that policy area in that fiscal year, except as allowed under the current Growth Policy. For FY08, the Planning Board must consider the Germantown East, and Gaithersburg City Policy Areas to be Acceptable with Full Mitigation for transportation.

When this annual analysis results in a finding of Acceptable with Partial Mitigation for a policy area for a fiscal year, the Planning Board must not approve any more subdivisions in that policy area in that fiscal year except as allowed under the current Growth Policy. For FY08, the Planning Board will consider certain policy areas to be Acceptable with Partial Mitigation for transportation at the policy area level. The full listing of policy areas for which either full or partial mitigation is required in FY08 are listed in Table 11.

Table 11
Trip Mitigation Required by Policy Area – 2012 PAMR Results (effective July 1, 2008)

Policy Area	Trip Mitigation Required
Aspen Hill	20%
Bethesda/Chevy Chase*	30%
Derwood/Shady Grove*	20%
Fairland/White Oak	45%
Gaithersburg City	100%
Germantown East	100%
Kensington/Wheaton*	15%
Montgomery Village/Airpark	100%
North Bethesda*	100%
Olney	10%
Potomac	45%
R&D Village	35%
Rockville	30%

The trip mitigation also applies to the MSPAs as indicated with an asterisk in the table above and itemized below:

- The Bethesda/Chevy Chase Policy Area includes the Bethesda CBD and Friendship Heights CBD Policy Areas
- The Derwood Policy Area includes the Shady Grove Policy Area
- The Kensington/Wheaton Policy Area includes the Glenmont and Wheaton CBD Policy Areas
- The North Bethesda Policy Area includes the Grosvenor, Twinbrook, and White Flint Policy Areas
- The Silver Spring/Takoma Park Policy Area includes the Silver Spring CBD Policy Area.

An applicant for a preliminary plan of subdivision need not take any mitigating action under PAMR if the Planning Board finds that the proposed development will generate three or fewer peak hour trips. For retail uses, mitigation applies to primary trips, but not pass-by or diverted trips.

The Planning Board, after considering recommendations of the County Executive, may approve a preliminary plan application in a policy area found by PAMR to be Acceptable with Full Mitigation or Acceptable with Partial Mitigation, as provided in this section. In approving plans in Acceptable with Full Mitigation policy areas, the Board should ensure that the average level of service for the relevant policy area is not adversely affected. Except as otherwise expressly stated in the Development District Participation section of the Growth Policy, the same level of service criteria must be used in evaluating an application under this section.

B. PAMR Trip Reduction/Mitigation

The following options to mitigate the traffic impacts of development approved in a preliminary plan may be used, individually or in combination:

Trip Mitigation

An applicant may sign a binding Traffic Mitigation Agreement (TMAg) under which up to 100 percent of the projected peak hour vehicle trips would be removed from the roadway by using Transportation Demand Management techniques to reduce trips generated by the applicant's development or by other sites, so that an applicant could still generate a certain number of trips if the mitigation program removes an equal number of trips from other sites in the same policy area. Note that traffic mitigation (TMAgs) apply to both LATR and PAMR.

Trip Reduction by Providing Non-Auto Facilities

An applicant may mitigate roadway congestion impacts to a limited extent by providing non-auto transportation facilities that will enhance pedestrian safety or increase the attractiveness of alternative modes of travel. The allowable facilities and their corresponding vehicle trip credits are shown in Table 5. These facilities can be provided in exchange for vehicle trip credits; both the credit value and maximum potential trip reduction credit (from 60 to 120 peak hour vehicle trips) will depend on the congestion standard for the policy area.

An applicant may mitigate a limited number of trips by providing non-auto facilities that will make alternative modes of transit, walking, and bicycling safer and more attractive. The allowable actions and number of trips associated with them, as well as the maximum number of trip credits allowable with these actions, which will depend in part on the congestion standards for the policy area they are applied to, will be adopted by the Planning Board in these Guidelines.

Adding Roadway Capacity

An applicant may mitigate trips by building link-based roadway network capacity. The conversion rate between vehicle trips and lane miles of roadway is shown in Table 12. The values in that table are derived from regional estimates of vehicle trip length by trip purposes and uniform per-lane capacities for roadway functional classes that should be applied county wide. Several conditions apply:

- The number of lane miles in Table 12 reflects total capacity provided, so that if an applicant widens a roadway by one lane in each direction, the total minimum project length would be half the length listed in the table.
- The roadway construction or widening must have logical termini, for instance connecting two intersections.
- The roadway construction must occur in the same policy area as the proposed development.
- The roadway construction must be recommended in a master plan.

Adding Transit Capacity

An applicant may mitigate inadequate PAMR conditions by buying 40-foot long hybrid electric fleet vehicles for the Ride On system, and guaranteeing 12 years of operations funding, at the rate of 30 peak hour vehicle-trips per fleet vehicle. To qualify as mitigation, any bus must be an addition to the size of the Ride On fleet and not a replacement for a bus taken out of service.

Payment instead of construction

The Planning Board may accept payment to the County of a fee commensurate with the cost of a required improvement if the applicant has made a good faith effort to implement an acceptable improvement, and the Board finds that a desirable improvement cannot feasibly be implemented by the applicant but the same improvement or an acceptable alternative can be implemented by a public agency within four years after the subdivision is approved.

In general, each mitigation measure or combination of measures must be scheduled for completion or otherwise be operational at the same time or before the proposed development is scheduled to be completed, and prior to use and occupancy permits being released. The nature, design, and scale of any additional facility or program must receive prior approval from any government agency that would construct or maintain the facility or program, and the applicant and the public agency must execute an appropriate public works agreement before the Board approves a record plat. The application must also be approved under LATR.

Both the subdivision plan and all necessary mitigation measures must be consistent with an adopted master plan or other relevant land use policy statement. For the Planning Board to accept a roadway capacity improvement as a mitigation measure, the applicant must show that alternative non-auto mitigation measures are not feasible or desirable. In evaluating mitigation measures proposed by an applicant, the Board must place a high priority on design excellence to create a safe, comfortable, and attractive public realm for all users, with particular focus on high-

quality pedestrian and transit access to schools, libraries, recreation centers, and other neighborhood facilities.

Table 12
PAMR Mitigation Options for Providing Roadway Capacity
(Minimum length of roadway construction in lane miles of widening or new construction per 100 vehicle trips generated)

	Facility Type			
Land Use Type	**Freeway**	**Major Highway**	**Arterial**	**Primary Residential**
Office	0.38	0.51	0.77	1.54
Retail	0.24	0.31	0.47	0.94
Other Commercial	0.31	0.41	0.62	1.23
Residential	0.31	0.41	0.62	1.24

Appendix A

Weekday Peak Hour Trip Generation Formulas and Rates for Local Area Transportation Review

Table A-1
General Office

Applicable Size	Formula/Rate	Directional Distribution			
		AM		PM	
		Enter	Exit	Enter	Exit
Under 25,000 sf GFA	AM: T = 1.38(A) PM: T = 2.24(A)				
25,000 sf GFA and over	AM: T = 1.70(A) – 8 PM: T = 1.44(A) + 20	87%	13%	17%	83%
Over 300,000 sf GFA with special characteristics (See Table B-1)	AM: T = 1.70(A) + 115 PM: T = 1.44(A) + 127				
Within 1,000-foot radius of Metrorail station and outside the Beltway (D)	AM: Deduct P = 50% total trips from "T" PM: Deduct P = 4 (1000-D)/100 from "T"				

T = weekday peak-hour vehicle trips A = gross floor area (GFA) of building in 1,000 sf
P = percentage reduction in trips (P/100) D = straight line distance (in feet) from the main entrance to station

Table A-2
General Retail

Applicable Size	Formula/Rate	Directional Distribution			
		AM		PM	
		Enter	Exit	Enter	Exit
All sizes except convenience retail	AM: Use 25% of the weekday evening peak-hour trips				
Under 50,000 sf GLA	PM: T = 12.36(A)	52%	48%	52%	48%
From 50,000 sf up to 200,000 sf GLA	PM: T = 7.43(A) + 247				
Over 200,000 sf GLA	Special analysis required by applicant or use two times applicable ITE rate				
Convenience retail not part of a shopping center or groups of stores	AM and PM: Use applicable ITE formula/rate				

T = weekday peak-hour vehicle trips A = gross leasable area (GLA) of building in 1,000 sf
*For no major food chain store, deduct (P): P = 0.05 + 0.002 (200-A)

Table A-3
Fast Food Restaurants

	Formula/Rate	Directional Distribution			
		AM		PM	
		Enter	Exit	Enter	Exit
Weekday peak-hour trip-generation rates of fast food restaurants vary based on their type of menu selection (e.g., hamburgers vs. tacos vs. chicken) and their location relative to traffic volume on the adjacent roadway.	Develop trip-generation rates based on driveway counts from existing similar fast food restaurants at similar locations (e.g., McDonald's Restaurant on major highways) if data are available or can be obtained from previous studies. Otherwise, use ITE trip-generation data.	53%	47%	53%	47%

Table A-4
Residential

Applicable Size	Formula/Rate		Directional Distribution			
			AM		PM	
			Enter	Exit	Enter	Exit
Single-Family Detached	**Under 75 units** AM: T = 0.95 (U) PM: T = 1.11 (U)	75 units or over AM: T = 0.62 (U) + 25 PM: T = 0.82 (U) + 21	25%	75%	64%	36%
Townhouses	**Under 100 units** AM: T = 0.48 (U) PM: T = 0.83 (U)	100 units and over AM: T = 0.53 (U) – 5 PM: T = 0.48 (U) + 35	17%	83%	67%	33%
Garden and Mid-Rise Apartments (one to nine stories)	**Under 75 units** AM: T = 0.44 (U) PM: T = 0.48 (U)	75 units and over AM: T = 0.40 (U) + 3 PM: T = 0.47 (U) + 1	20%	80%	66%	34%
High-Rise Apartments (ten or more stories)	**Under 100 units** AM: T = 0.40 (U) PM: T = 0.46 (U)	100 units and over AM: T = 0.29 (U) + 11 PM: T = 0.34 (U) + 12	25%	75%	61%	39%

T = weekday peak-hour vehicle trips U = housing units

Table A-5
Private School (Weekday Morning Peak Period)

Applicable Size	Formula/Rate	Comments
K-8	AM: T = N x 0.92	For the weekday morning peak period, a special study is required to determine the trip-generation rate for private schools with over 400 students.
K-12	AM: T = N x 0.78	For the evening peak period, the applicant may be required to provide more data on site-generated traffic if it is anticipated that there will be major school-sponsored events during the evening peak period that would generate 50 or more weekday peak-hour trips.
Private schools predominately grades 10-12	Use the rates in the Institute of Transportation Engineer's *Trip Generation* Report for high schools (Land Use Code 530)	Trip-generation formulas or rates for private schools were developed based on the number of students during only the weekday morning peak period. Since classes for private schools end before the weekday evening peak period, a trip-generation rate during the weekday evening peak period was not developed.

	Trip Purpose			Directional Distribution	
Grade	New	Pass-by	Diverted	Enter	Exit
K-8	53%	15%	32%	54%	46%
K-12	65%	6%	29%	59%	41%

T = weekday peak-hour vehicle trips N = number of students

Table A-6
Automobile Filling Station

Applicable Size	Formula/Rate			
	Trip Rates per Pumping Station[1]:	**AM**	**PM**	
For stations with/without car washes, convenience stores, and garages	Station with fuel sales and:		Upcounty[2]	Downcounty[2]
	1) no other facilities	11.31	14.96	14.96
T = N x (trip rate)	2) garage	11.00	16.67	11.09
	3) convenience store[3]	12.28	21.75	12.32
	4) car wash and convenience store	17.33	21.75	15.08

Percentage by Trip Purpose

Weekday Peak Period	New	Pass-by	Diverted
AM	15%	60%	25%
PM	15%	50%	35%

Directional Distribution

AM		**PM**	
Enter	Exit	Enter	Exit
53%	47%	51%	49%

T = weekday peak-hour vehicle trips N = number of pumping stations (or positions)

[1]A pumping station is defined as the area at which any one vehicle can stop and pump fuel at any one time. A pumping station could also be referred to as a fueling position in front of a single nozzle dispenser or a multi-produce dispenser

[2]Downcounty locations are considered the urbanized areas with a congestion standard of 1,500 or higher (See Table 1). All other locations are considered upcounty.

[3]Note that a convenience store as *an accessory use* to an automobile filing station must have *less than 1,650 square feet of patron area*. Otherwise, such land uses are considered to be a "convenience store with gasoline pumps" with trip-generation rates available in the ITE *Trip Generation Report* as Land Use Code 853.

Table A-7
Senior/Elderly Housing

Type of Facility	Formula/Rate
Retirement Community with active seniors and minimal support services	Use ITE Land Use Code 250
Independent-Living Facilities with some support services plus minimal assisted-living and nursing home facilities	Formula Up to 150 units: AM: T = 0.05 (U) PM: T = 0.04 (U) Over 150* units: AM: T = 0.08 (U) PM: T= 0.11 (U)
Assisted-Living Facilities	AM: T = 0.03 (U) PM: T = 0.06 (U)
Nursing Homes	As a land use requiring a special exception, site-generated traffic can be determined based on the statement of operations rather than using ITE's trip-generation data. Except for the administrative staff, employees usually arrive before the weekday morning peak period to prepare and serve breakfast. They usually stay through the weekday evening peak period to prepare and serve dinner.

T = weekday peak-hour vehicle trips U = detached, attached apartment unit and/or room
*Usually large facilities with different levels of support services; may be considered "life cycle" care

Table A-8
Mini-Warehouse

Type of Facility	Formula/Rate	Comments
On-Site Vehicle Rental		
No	AM: T = 0.01 (N) PM: T = 0.01 (N)	Based on ITE Land Use Code 151 supplemented with more current local data
Yes	AM: T = 0.015 (N) PM: T = 0.02 (N)	

T = weekday peak-hour vehicle trips N = number of storage units

Table A-9
Child Daycare Center

Applicable Size	Formula/Rate
For 6 to 25 staff	AM: T = 1.75N + 17 PM: T = 2.06N + 16

	Trip Purpose			Directional Distribution			
				AM		PM	
Peak Period	New	Pass-by	Diverted	Enter	Exit	Enter	Exit
AM	32%	27%	41%	53%	47%	49%	51%
PM	27%	12%	61%				

T = weekday peak-hour vehicle trips N = number of staff

Appendix B

Weekday Peak Hour Trips Generated by Land Uses for Local Area Transportation Review

Table B-1
Number of Weekday PeakHour Trips Generated by General Office

General

Bldg Size (SF of GFA)	Weekday Peak-Hour Trips AM	PM
5,000	7	11
10,000	14	22
15,000	21	34
20,000	28	45
25,000	35	56
30,000	43	63
40,000	60	78
50,000	77	92
60,000	94	106
70,000	111	121
80,000	128	135
90,000	145	150
100,000	162	164
110,000	179	178
120,000	196	193
130,000	213	207
140,000	230	222
150,000	247	236
160,000	264	250
170,000	281	265
180,000	298	279
190,000	315	294
200,000	332	308
220,000	366	337
240,000	400	366
260,000	434	394
280,000	468	423
300,000	502	452
320,000	536	481
340,000	570	510
360,000	604	538
380,000	638	567
400,000	672	596
420,000	706	625
440,000	740	654
460,000	774	682
480,000	808	711
500,000	842	740

Equations Used

AM peak-hour trips = 1.38(GFA/1000)
PM peak-hour trips = 2.24(GFA/1000)

25,000 sf and over

AM peak-hour trips = 1.70 (GFA/1000) – 8
PM peak-hour trips = 1.44(GFA/1000) + 20

Special Cases

If a building is within 1,000 feet of a Metrorail station and outside the Beltway, reduce weekday peak-hour trips from chart at left.

Straight Line Distance to Station (in feet)	Percent Reduction in Trips AM	PM
0	50%	40%
50	50%	38%
100	50%	36%
150	50%	34%
200	50%	32%
250	50%	30%
300	50%	28%
350	50%	26%
400	50%	24%
450	50%	22%
500	50%	20%
550	50%	18%
600	50%	16%
650	50%	14%
700	50%	12%
750	50%	10%
800	50%	8%
850	50%	6%
900	50%	4%
950	50%	2%
1,000	50%	0%

If a building is over 300,000 sf with a single employer and NOT part of an activity center with different land uses

Building Size (SF of GFA)	Weekday Peak-Hour Trips AM	PM
300,001	625	559
320,000	659	588
340,000	693	617
360,000	727	645
380,000	761	674
400,000	795	703
420,000	829	732
440,000	863	761
460,000	897	789
480,000	931	818
500,000	965	847

Equations Used

AM peak-hour trips = 1.70(GFA/1000) + 115
PM peak-hour trips = 1.44(GFA/1000) + 127

Please note: Trip generation rates are calculated using the size of individual buildings, not the combined size of a group.

Table B-2
Number of Weekday Peak Hour Trips Generated by General Retail

With Major Food Chain Store

Bldg Size (SF of GLA)	Peak-Hour Trips AM	PM
50,000	155	619
55,000	164	656
60,000	173	693
65,000	182	730
70,000	192	767
75,000	201	804
80,000	210	841
85,000	220	879
90,000	229	916
95,000	238	953
100,000	248	990
105,000	257	1027
110,000	266	1064
115,000	275	1101
120,000	285	1139
125,000	294	1176
130,000	303	1213
135,000	313	1250
140,000	322	1287
145,000	331	1324
150,000	340	1362
155,000	350	1399
160,000	359	1436
165,000	368	1473
170,000	378	1510
175,000	387	1547
180,000	396	1584
185,000	405	1622
190,000	415	1659
195,000	424	1696
200,000	433	1733

Equations Used

50,000 to 200,000 sf

AM peak-hour trips = 0.25 [7.43 (GLA/1000) + 247]
PM peak-hour trips = 7.43 (GLA/1000) + 247

Adjustment Factor for No Major Food Chain Store

P = 0.05 + 0.002 [200 – (GLA/1000)]

Please note:
Under 50,000 sf

No equations, since major food chain store is typically at least 50,000 sf

Without Major Food Chain Store

Bldg Size (SF of GLA)	Peak-Hour Trips AM	PM
5,000	9	35
10,000	18	70
15,000	27	108
20,000	36	146
25,000	46	185
30,000	57	226
35,000	67	268
40,000	78	311
45,000	89	356
50,000	101	402
55,000	108	433
60,000	116	464
65,000	124	496
70,000	132	529
75,000	141	563
80,000	149	597
85,000	158	633
90,000	167	668
95,000	176	705
100,000	186	743
105,000	195	781
110,000	205	820
115,000	215	859
120,000	225	899
125,000	235	941
130,000	246	982
135,000	256	1025
140,000	267	1068
145,000	278	1112
150,000	289	1157
155,000	301	1203
160,000	312	1249
165,000	324	1296
170,000	336	1344
175,000	348	1393
180,000	360	1442
185,000	373	1492
190,000	386	1543
195,000	399	1594
200,000	412	1646

Equations Used

Under 50,000 sf

AM peak-hour trips = 0.25 [12.36(GLA/1000)](1-P)
PM peak-hour trips = [12.36 (GLA/1000)](1-P)

50,000 to 200,000 sf

AM peak-hour trips = 0.25 [7.43(GLA/1000) + 247](1-P)
PM peak-hour trips = [7.43(GLA/1000) + 247](1-P)

Table B-3
Number of Weekday Peak Hour Trips Generated by Residential Units

No. of Units	Single-Family		Townhouse		Garden Apartment		High-Rise Apartments	
	AM	PM	AM	PM	AM	PM	AM	PM
1	1	1	0	1	0	0	0	0
5	5	6	2	4	2	2	2	2
10	10	11	5	8	4	5	4	5
15	14	17	7	12	7	7	6	7
20	19	22	10	17	9	10	8	9
25	24	28	12	21	11	12	10	12
30	29	33	14	25	13	14	12	14
35	33	39	17	29	15	17	14	16
40	38	44	19	33	18	19	16	18
45	43	50	22	37	20	22	18	21
50	48	56	24	42	22	24	20	23
55	52	61	26	46	24	26	22	25
60	57	67	29	50	26	29	24	28
65	62	72	31	54	29	31	26	30
70	67	78	34	58	31	34	28	32
75	72	83	36	62	33	36	30	35
80	75	87	38	66	35	39	32	37
85	78	91	41	71	37	41	34	39
90	81	95	43	75	39	43	36	41
95	84	99	46	79	41	46	39	44
100	87	103	48	83	43	46	40	46
110	93	111	53	88	47	53	43	49
120	99	119	59	93	51	57	46	53
130	106	128	64	97	55	62	49	56
140	112	136	69	102	59	67	52	60
150	118	144	75	107	64	72	55	63
160	124	152	80	112	67	76	57	66
170	130	160	85	117	71	81	60	70
180	137	169	90	121	75	86	63	73
190	143	177	96	126	79	90	66	77
200	149	185	101	131	83	95	69	80
210	155	193	106	136	87	100	72	83
220	161	201	112	141	91	104	75	87
230	168	210	117	145	95	109	78	90
240	174	218	122	150	99	114	81	94
250	180	226	128	155	103	119	84	97
275	196	247	141	167	113	130	91	106
300	211	267	154	179	123	142	98	114
325	227	288	167	191	133	154	105	123
350	242	308	181	203	143	166	113	131
375	258	329	194	215	153	177	120	140
400	273	349	207	227	164	189	127	148
425	289	370	220	239	173	201	134	157
450	304	390	234	251	183	213	142	165
475	320	411	247	263	193	224	149	174
500	320	431	260	275	203	236	156	182
550	366	472	287	299	223	260	171	199
600	397	513	313	323	243	283	185	216

Equations Used

SINGLE-FAMILY DETACHED

Under 75 Units

AM peak-hour trips = 0.95(# of units)
PM peak-hour trips = 1.11(# of units)

75 Units and Over

AM peak-hour trips = 0.62(# of units) + 25
PM peak-hour trips = 0.82(# of units) + 21

TOWNHOUSES OR SINGLE-FAMILY ATTACHED

Under 100 Units

AM peak-hour trips = 0.48(# of units)
PM peak-hour trips = 0.83(# of units)

100 Units and Over

AM peak-hour trips = 0.53(# of units) - 5
PM peak-hour trips = 0.48(# of units) + 35

GARDEN & MID-RISE APARTMENTS

(one to nine stories)

Under 75 Units

AM peak-hour trips = 0.44(# of units)
PM peak-hour trips = 0.48(# of units)

75 Units and Over

AM peak-hour trips = 0.40(# of units) + 3
PM peak-hour trips = 0.47(# of units) + 1

HIGH-RISE APARTMENTS

(ten or more stories)

Under 100 Units

AM peak-hour trips = 0.40(# of units)
PM peak-hour trips = 0.46(# of units)

100 Units and Over

AM peak-hour trips = 0.29(# of units) + 11
PM peak-hour trips = 0.34(# of units) + 12

Table B-4
Number of Weekday Peak Hour Trips Generated by a Child Daycare Center

Number of Staff	Total AM Trips	Total PM Trips
6	28	28
7	29	30
8	31	32
9	33	35
10	35	37
11	36	39
12	38	41
13	40	43
14	42	45
15	43	47
16	45	49
17	47	51
18	49	53
19	50	55
20	52	57
21	54	59
22	56	61
23	57	63
24	59	65
25	61	68

Directional Distribution			Trip Purpose		
Peak Period	Entering	Exiting	New	Pass-by	Diverted
AM	53%	47%	32%	27%	41%
PM	49%	51%	27%	12%	61%

For six or fewer staff, there is no need for a traffic study to satisfy LATR. The applicant may proffer a specific schedule of the arrival and departure of those staff arriving during weekday peak periods specified in the special exception statement of operation.

Table B-5
Number of Weekday Peak Hour Trips Generated by a Private School

Number of Students Enrolled	School Program for Kindergarten to:	
	12th Grade	8th Grade
25	20	23
50	38	46
75	59	69
100	78	92
125	98	115
150	117	138
175	137	161
200	156	184
225	176	207
250	195	230
275	215	253
300	234	276
325	254	299
350	273	322
375	293	345
400	312	368

Please note: For over 400 students, a special study is required to determine the trip-generation rate.

Table B-6
Number of Weekday Peak Hour Trips Generated by an Automobile Filling Station

No. of Pumping Stations	With Fuel Only		With Fuel and Garage Only				With Fuel and Convenience Store Only				With Fuel, Car Washes, and Convenience Store			
	All Areas		Upcounty		Downcounty		Upcounty		Downcounty		Upcounty		Downcounty	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	11	15	11	17	11	11	12	22	12	12	17	22	17	15
2	23	30	22	33	22	22	25	44	25	25	35	44	35	30
3	34	45	33	50	33	33	37	65	37	37	52	65	52	45
4	45	60	44	67	44	44	49	87	49	49	69	87	69	60
5	57	75	55	83	55	55	61	109	61	62	87	109	87	75
6	68	90	66	100	66	67	74	131	74	74	104	131	104	90
7	79	105	77	117	77	78	86	152	86	86	121	152	121	106
8	90	120	88	133	88	89	98	174	98	99	139	174	139	121
9	102	135	99	150	99	100	111	196	111	111	156	196	156	136
10	113	150	110	167	110	111	123	218	123	123	173	218	173	151
11	124	165	121	183	121	122	135	239	135	136	191	239	191	166
12	136	180	132	200	132	133	147	261	147	148	208	261	208	181
13	147	194	143	217	143	144	160	283	160	160	225	283	225	196
14	158	209	154	233	154	155	172	305	172	172	243	305	243	211
15	170	224	165	250	165	166	184	326	184	185	260	326	260	226
16	181	239	176	267	176	177	196	348	196	197	277	348	277	241
17	192	254	187	283	187	189	209	370	209	209	295	370	295	256
18	204	269	198	300	198	200	221	392	221	222	312	392	312	271
19	215	284	209	317	209	211	233	413	233	234	329	413	329	287
20	226	299	220	333	220	222	246	435	246	246	347	435	347	302
Rate per Pumping Station	11.31	14.96	11.00	16.67	11.00	11.09	12.28	21.75	12.28	12.32	17.33	21.75	17.33	15.08

Appendix C

Weekday Peak Hour Trip Generation Rates and Directional Splits for the Bethesda, Friendship Heights, and Silver Spring CBDs

Table C-1
Weekday Morning and Evening Peak-Hour Trip Generation Rates for the Bethesda and Friendship Heights CBDs

Land Use Per Trip Rate Unit	Rate AM Peak-Hour Vehicle Trips per Unit of Development	% In	% Out	Rate PM Peak-Hour Vehicle Trips per Unit of Development	% In	% Out
Office (1,000 sf)	1.50	85	15	1.50	25	75
Retail (1,000 sf)	0.65	50	50	2.60	50	50
Grocery Store (1,000 sf)	1.22	70	30	6.20	50	50
Residential High Rise (dwelling unit)	0.30	20	80	0.30	67	33
Residential Garden Apt. (dwelling unit)	0.45	20	80	0.45	67	33
Residential Townhouse (dwelling unit)	0.45	20	80	0.45	67	33
Residential Single-Family (dwelling unit)	0.80	25	75	0.80	67	33
Hotel (room)	0.22	60	40	0.22	55	45
Miscellaneous Service (1,000 sf)	1.30	50	50	1.30	50	50
Hospital (employee)	0.33	70	30	0.29	30	70
Industrial (1,000 sf)	1.10	85	15	1.10	15	85

Table C-2
Weekday Morning and Evening Peak Hour Trip Generation Rates for the Silver Spring CBD

	Morning			Evening		
Land Use	Rate	% In	% Out	Rate	% In	% Out
Office (existing vacant/1,000 sf)	1.60	85	15	1.60	15	85
Office (pending + future/1,000 sf)	1.40	85	15	1.40	15	85
Industrial (1,000 sf)	1.00	85	15	1.00	15	85
Retail (1,000 sf)	0.50	50	50	2.00	50	50
Residential (high rise)	0.30	20	80	0.30	70	30
Residential (townhouse)	0.45	20	80	0.45	67	33
Hotel (room)	0.20	60	40	0.20	55	45

Appendix D

Trip Distribution and Traffic Assignment Guidelines

Introduction

This document provides trip distribution guidance to be used in all traffic studies prepared for development sites in Montgomery County. Vehicle trip distribution and trip assignment are described in Sections VII-D and VII-F of the Guidelines. For most development sites, the process is a combination of trip distribution and traffic assignment.

Definitions

Trip distribution specifies the location where trips that originate at a development site are destined to, and 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 purpose of reviewing trip distribution, Transportation Planning staff divided the region into 16 geographic areas, called super districts. Eleven of these super districts are in Montgomery County, as shown in Figure D-1. The remaining five super districts represent neighboring jurisdictions.

The trip distribution assumptions are contained in Tables D-1 through D-11 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, 18.1 percent of trips generated by a general office development in Germantown (see Table D-9) would be expected to travel to or from Frederick County. However, only two 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 1990 census journey-to-work information, updated to reflect regional housing and employment totals as of 1998. The distribution for residential development in each super district is based on the reported workplace locations for 1990 census respondents who lived in that super district. Similarly, the distribution for office development for each super district is based on the distribution of all census households nationwide that reported a workplace in that super district. Trip distribution for other land uses will be decided based on consultation with staff and the applicant prior to submission of the traffic study.

The application of the trip distribution information in Tables D-1 through D-11 is straightforward in cases where a traffic 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.

Figure D-2 provides 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 leftmost column of data shows the trip distribution by super-district as found in Table D-4 (used for development in the Rockville/North Bethesda super district). The information located in the center of the table (inside the boxes) describes the assumed route, or assignment, taken for trips

between the site and each super-district. *The data inside the boxes must be developed using judgment and confirmed by Transportation Planning staff.* The rightmost portion 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 is then summed to develop an aggregate trip assignment for the trips generated by the office and residential components of the site, respectively.

Figure D-1
Super Districts in Montgomery County

Figure 2. Trip Distribution - Assignment Matrix
Hypothetical Case in North Bethesda with both Office and Residential Components

Part 1. Office Component

	Trip distribution by super-district	Trip assignment for origin by super-district: Montrose west	MD 355 north	Randolph east	MD 355 south	MD 187 south	TOTAL	Trip assignment for development case: Montrose west	MD 355 north	Randolph east	MD 355 south	MD 187 south	TOTAL
Bethesda	**3.5%**				50%	50%	100%	0.0%	0.0%	0.0%	1.8%	1.8%	3.5%
Silver Spring	**2.2%**				100%		100%	0.0%	0.0%	0.0%	2.2%	0.0%	2.2%
Potomac	**8.0%**	80%				20%	100%	6.4%	0.0%	0.0%	0.0%	1.6%	8.0%
Rockville	**12.8%**	25%	75%				100%	3.2%	9.6%	0.0%	0.0%	0.0%	12.8%
Kensington	**7.2%**			80%	20%		100%	0.0%	0.0%	5.8%	1.4%	0.0%	7.2%
Fairland	**4.1%**			80%	20%		100%	0.0%	0.0%	3.3%	0.8%	0.0%	4.1%
Gaithersburg	**14.4%**	75%	25%				100%	10.8%	3.6%	0.0%	0.0%	0.0%	14.4%
Olney	**8.5%**	20%	50%	30%			100%	1.7%	4.3%	2.6%	0.0%	0.0%	8.5%
Germantown	**6.5%**	90%	10%				100%	5.9%	0.7%	0.0%	0.0%	0.0%	6.5%
Agricultural Area (West)	**0.9%**	100%					100%	0.9%	0.0%	0.0%	0.0%	0.0%	0.9%
Agricultural Area (East)	**4.2%**	40%	40%	20%			100%	1.7%	1.7%	0.8%	0.0%	0.0%	4.2%
Washington, DC	**3.6%**	70%			30%		100%	2.5%	0.0%	0.0%	1.1%	0.0%	3.6%
Prince George's County	**8.8%**				100%		100%	0.0%	0.0%	0.0%	8.8%	0.0%	8.8%
Virginia	**7.8%**	80%		10%		10%	100%	6.2%	0.0%	0.8%	0.0%	0.8%	7.8%
Frederick County	**4.6%**	100%					100%	4.6%	0.0%	0.0%	0.0%	0.0%	4.6%
Howard County	**2.9%**		10%	10%	80%		100%	0.0%	0.3%	0.3%	2.3%	0.0%	2.9%
TOTAL	**100.0%**							**43.9%**	**20.1%**	**13.5%**	**18.4%**	**4.1%**	**100.0%**
							USE ==>	**44%**	**20%**	**14%**	**18%**	**4%**	**100%**

Part 2. Residential Component

	Trip distribution by super-district	Trip assignment for origin by super-district: Montrose west	MD 355 north	Randolph east	MD 355 south	MD 187 south	TOTAL	Trip assignment for development case: Montrose west	MD 355 north	Randolph east	MD 355 south	MD 187 south	TOTAL
Bethesda	**15.6%**				50%	50%	100%	0.0%	0.0%	0.0%	7.8%	7.8%	15.6%
Silver Spring	**2.4%**				100%		100%	0.0%	0.0%	0.0%	2.4%	0.0%	2.4%
Potomac	**3.3%**	80%				20%	100%	2.6%	0.0%	0.0%	0.0%	0.7%	3.3%
Rockville	**31.0%**	25%	75%				100%	7.8%	23.3%	0.0%	0.0%	0.0%	31.0%
Kensington	**2.6%**			80%	20%		100%	0.0%	0.0%	2.1%	0.5%	0.0%	2.6%
Fairland	**0.7%**			80%	20%		100%	0.0%	0.0%	0.6%	0.1%	0.0%	0.7%
Gaithersburg	**10.6%**	75%	25%				100%	8.0%	2.7%	0.0%	0.0%	0.0%	10.6%
Olney	**1.7%**	20%	50%	30%			100%	0.3%	0.9%	0.5%	0.0%	0.0%	1.7%
Germantown	**1.0%**	90%	10%				100%	0.9%	0.1%	0.0%	0.0%	0.0%	1.0%
Agricultural Area (West)	**0.0%**	100%					100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Agricultural Area (East)	**0.2%**	40%	40%	20%			100%	0.1%	0.1%	0.0%	0.0%	0.0%	0.2%
Washington, DC	**13.9%**	70%			30%		100%	9.7%	0.0%	0.0%	4.2%	0.0%	13.9%
Prince George's County	**6.1%**				100%		100%	0.0%	0.0%	0.0%	6.1%	0.0%	6.1%
Virginia	**9.7%**	80%		10%		10%	100%	7.8%	0.0%	1.0%	0.0%	1.0%	9.7%
Frederick County	**0.5%**	100%					100%	0.5%	0.0%	0.0%	0.0%	0.0%	0.5%
Howard County	**0.7%**		10%	10%	80%		100%	0.0%	0.1%	0.1%	0.6%	0.0%	0.7%
TOTAL	**100.0%**							**37.7%**	**27.0%**	**4.2%**	**21.7%**	**9.4%**	**100.0%**
							USE ==>	**38%**	**27%**	**4%**	**22%**	**9%**	**100%**

figure2

Figure D-2
Trip Distribution Converted to Traffic Assignment

Table D-1
Trip Distribution Report in Super District 1: Bethesda/Chevy Chase

Auto-Driver Trip Distribution for Development in Super District 1: Bethesda/Chevy Chase

Trip Distribution to Super District for	Office Development	Residential Development
1. Bethesda/Chevy Chase	11.7%	22.8%
2. Silver Spring/Takoma Park	3.8%	2.1%
3. Potomac/Darnestown/Travilah	7.3%	1.8%
4. Rockville/North Bethesda	9.4%	9.8%
5. Kensington/Wheaton	8.7%	1.6%
6. White Oak/Fairland/Cloverly	4.3%	0.7%
7. Gaithersburg/Shady Grove	7.5%	4.0%
8. Aspen Hill/Olney	5.1%	0.4%
9. Germantown/Clarksburg	3.3%	0.2%
10. Rural: West of I-270	0.6%	0.0%
11. Rural: East of I-270	2.0%	0.15%
12. Washington, DC	7.4%	39.5%
13. Prince George's County	12.4%	4.6%
14. Virginia	12.2%	11.7%
15. Frederick County	2.1%	0.2%
16. Howard County	2.2%	0.5%

Table D-2
Trip Distribution Report in Super District 2: Silver Spring/Takoma Park

Auto-Driver Trip Distribution for Development in Super District 2: Silver Spring/Takoma Park

Trip Distribution to Super District for	Office Development	Residential Development
1. Bethesda/Chevy Chase	2.2%	9.1%
2. Silver Spring/Takoma Park	11.5%	13.3%
3. Potomac/Darnestown/Travilah	2.2%	0.9%
4. Rockville/North Bethesda	3.0%	7.7%
5. Kensington/Wheaton	10.0%	4.6%
6. White Oak/Fairland/Cloverly	11.9%	2.7%
7. Gaithersburg/Shady Grove	3.9%	4.2%
8. Aspen Hill/Olney	6.3%	0.8%
9. Germantown/Clarksburg	1.3%	0.6%
10. Rural: West of I-270	0.1%	0.6%
11. Rural: East of I-270	2.8%	0.2%
12. Washington, DC	7.2%	32.5%
13. Prince George's County	24.5%	12.8%
14. Virginia	6.4%	8.9%
15. Frederick County	1.1%	0.2%
16. Howard County	5.6%	1.4%

Table D-3
Trip Distribution Report in Super District 3: Potomac/Darnestown/Travilah

Auto-Driver Trip Distribution for Development in Super District 3: Potomac/Darnestown/ Travilah

Trip Distribution to Super District for	Office Development	Residential Development
1. Bethesda/Chevy Chase	5.7%	13.0%
2. Silver Spring/Takoma Park	2.4%	1.9%
3. Potomac/Darnestown/Travilah	21.0%	6.2%
4. Rockville/North Bethesda	12.1%	20.5%
5. Kensington/Wheaton	6.8%	1.4%
6. White Oak/Fairland/Cloverly	2.3%	0.7%
7. Gaithersburg/Shady Grove	11.1%	13.3%
8. Aspen Hill/Olney	5.1%	0.6%
9. Germantown/Clarksburg	4.5%	1.7%
10. Rural: West of I-270	1.1%	0.1%
11. Rural: East of I-270	2.2%	0.2%
12. Washington, DC	3.8%	22.1%
13. Prince George's County	7.2%	5.1%
14. Virginia	10.4%	12.4%
15. Frederick County	2.8%	0.4%
16. Howard County	1.5%	0.4%

Table D-4
Trip Distribution Report in Super District 4: Rockville/North Bethesda

Auto-Driver Trip Distribution for Development in Super District 4: Rockville/North Bethesda

Trip Distribution to Super District for	Office Development	Residential Development
1. Bethesda/Chevy Chase	3.5%	15.6%
2. Silver Spring/Takoma Park	2.2%	2.4%
3. Potomac/Darnestown/Travilah	8.0%	3.3%
4. Rockville/North Bethesda	12.8%	31.0%
5. Kensington/Wheaton	7.2%	2.6%
6. White Oak/Fairland/Cloverly	4.1%	0.7%
7. Gaithersburg/Shady Grove	14.4%	10.6%
8. Aspen Hill/Olney	8.5%	1.7%
9. Germantown/Clarksburg	6.5%	1.0%
10. Rural: West of I-270	0.9%	0.0%
11. Rural: East of I-270	4.2%	0.2%
12. Washington, DC	3.6%	13.9%
13. Prince George's County	8.8%	6.1%
14. Virginia	7.8%	9.7%
15. Frederick County	4.6%	0.5%
16. Howard County	2.9%	0.7%

Table D-5
Trip Distribution Report in Super District 5: Kensington/Wheaton

Auto-Driver Trip Distribution for Development in Super District 5: Kensington/Wheaton

Trip Distribution to Super District for	Office Development	Residential Development
1. Bethesda/Chevy Chase	2.7%	12.3%
2. Silver Spring/Takoma Park	6.2%	6.9%
3. Potomac/Darnestown/Travilah	2.6%	1.6%
4. Rockville/North Bethesda	5.1%	14.8%
5. Kensington/Wheaton	26.0%	11.1%
6. White Oak/Fairland/Cloverly	10.6%	2.2%
7. Gaithersburg/Shady Grove	5.5%	6.0%
8. Aspen Hill/Olney	10.3%	2.0%
9. Germantown/Clarksburg	2.1%	0.6%
10. Rural: West of I-270	0.2%	0.0%
11. Rural: East of I-270	4.3%	0.4%
12. Washington, DC	3.7%	22.6%
13. Prince George's County	11.9%	9.5%
14. Virginia	4.1%	8.2%
15. Frederick County	1.5%	0.2%
16. Howard County	3.2%	1.5%

Table D-6
Trip Distribution Report in Super District 6: White Oak/Fairland/Cloverly

Auto-Driver Trip Distribution for Development in Super District 6: White Oak/Fairland/ Cloverly

Trip Distribution to Super District for	Office Development	Residential Development
1. Bethesda/Chevy Chase	1.3%	6.8%
2. Silver Spring/Takoma Park	4.5%	9.0%
3. Potomac/Darnestown/Travilah	1.7%	0.6%
4. Rockville/North Bethesda	1.7%	9.3%
5. Kensington/Wheaton	6.1%	5.0%
6. White Oak/Fairland/Cloverly	23.5%	9.3%
7. Gaithersburg/Shady Grove	3.2%	3.8%
8. Aspen Hill/Olney	6.2%	1.4%
9. Germantown/Clarksburg	0.4%	0.4%
10. Rural: West of I-270	0.1%	0.0%
11. Rural: East of I-270	2.8%	1.1%
12. Washington, DC	3.7%	23.4%
13. Prince George's County	26.4%	20.1%
14. Virginia	3.4%	7.1%
15. Frederick County	1.6%	0.0%
16. Howard County	13.4%	2.7%

Table D-7
Trip Distribution Report in Super District 7: Gaithersburg/Shady Grove

Auto-Driver Trip Distribution for Development in Super District 7: Gaithersburg/Shady Grove

Trip Distribution to Super District for	Office Development	Residential Development
1. Bethesda/Chevy Chase	1.8%	8.5%
2. Silver Spring/Takoma Park	1.5%	2.2%
3. Potomac/Darnestown/Travilah	6.6%	2.1%
4. Rockville/North Bethesda	5.6%	23.7%
5. Kensington/Wheaton	3.7%	1.9%
6. White Oak/Fairland/Cloverly	2.2%	0.9%
7. Gaithersburg/Shady Grove	25.2%	32.4%
8. Aspen Hill/Olney	5.3%	1.8%
9. Germantown/Clarksburg	10.9%	3.4%
10. Rural: West of I-270	1.6%	0.1%
11. Rural: East of I-270	7.1%	0.8%
12. Washington, DC	2.5%	8.4%
13. Prince George's County	6.7%	4.0%
14. Virginia	4.6%	7.9%
15. Frederick County	12.1%	1.3%
16. Howard County	2.6%	0.6%

Table D-8
Trip Distribution Report in Super District 8: Aspen Hill/Olney

Auto-Driver Trip Distribution for Development in Super District 8: Aspen Hill/Olney

Trip Distribution to Super District for	Office Development	Residential Development
1. Bethesda/Chevy Chase	1.2%	9.3%
2. Silver Spring/Takoma Park	1.9%	5.5%
3. Potomac/Darnestown/Travilah	1.9%	1.5%
4. Rockville/North Bethesda	6.1%	22.5%
5. Kensington/Wheaton	8.6%	5.7%
6. White Oak/Fairland/Cloverly	5.5%	2.8%
7. Gaithersburg/Shady Grove	9.4%	11.0%
8. Aspen Hill/Olney	26.0%	8.1%
9. Germantown/Clarksburg	3.1%	0.8%
10. Rural: West of I-270	0.1%	0.1%
11. Rural: East of I-270	14.1%	1.3%
12. Washington, DC	2.2%	15.2%
13. Prince George's County	6.4%	7.7%
14. Virginia	3.1%	6.2%
15. Frederick County	4.7%	0.4%
16. Howard County	5.7%	1.9%

Table D-9
Trip Distribution Report in Super District 9: Germantown/Clarksburg

Auto-Driver Trip Distribution for Development in Super District 9: Germantown/ Clarksburg

Trip Distribution to Super District for	Office Development	Residential Development
1. Bethesda/Chevy Chase	0.6%	8.1%
2. Silver Spring/Takoma Park	1.4%	1.6%
3. Potomac/Darnestown/Travilah	5.5%	1.8%
4. Rockville/North Bethesda	3.5%	22.9%
5. Kensington/Wheaton	2.3%	1.6%
6. White Oak/Fairland/Cloverly	1.6%	0.2%
7. Gaithersburg/Shady Grove	17.2%	30.2%
8. Aspen Hill/Olney	2.5%	1.3%
9. Germantown/Clarksburg	25.2%	10.5%
10. Rural: West of I-270	2.6%	0.1%
11. Rural: East of I-270	8.0%	1.0%
12. Washington, DC	0.7%	7.0%
13. Prince George's County	5.8%	3.8%
14. Virginia	3.0%	7.4%
15. Frederick County	18.1%	2.0%
16. Howard County	2.1%	0.5%

Table D-10
Trip Distribution Report in Super District 10: Rural – West of I-270

Auto-Driver Trip Distribution for Development in Super District 10: Rural – West of I-270

Trip Distribution to Super District for	Office Development	Residential Development
1. Bethesda/Chevy Chase	0.8%	9.7%
2. Silver Spring/Takoma Park	2.7%	0.7%
3. Potomac/Darnestown/Travilah	4.3%	2.9%
4. Rockville/North Bethesda	2.1%	20.1%
5. Kensington/Wheaton	0.8%	1.2%
6. White Oak/Fairland/Cloverly	0.0%	0.4%
7. Gaithersburg/Shady Grove	7.0%	30.0%
8. Aspen Hill/Olney	3.0%	0.4%
9. Germantown/Clarksburg	4.1%	7.1%
10. Rural: West of I-270	47.7%	9.1%
11. Rural: East of I-270	1.7%	0.5%
12. Washington, DC	0.0%	7.4%
13. Prince George's County	2.1%	1.7%
14. Virginia	4.8%	4.5%
15. Frederick County	18.9%	3.8%
16. Howard County	0.0%	0.5%

Table D-11
Trip Distribution Report in Super District 11: Rural – East of I-270

Auto-Driver Trip Distribution for Development in Super District 11:
Rural – East of I-270

Trip Distribution to Super District for	Office Development	Residential Development
1. Bethesda/Chevy Chase	0.4%	5.9%
2. Silver Spring/Takoma Park	0.8%	3.9%
3. Potomac/Darnestown/Travilah	1.3%	1.0%
4. Rockville/North Bethesda	1.3%	17.7%
5. Kensington/Wheaton	3.4%	3.8%
6. White Oak/Fairland/Cloverly	8.8%	2.1%
7. Gaithersburg/Shady Grove	9.0%	23.5%
8. Aspen Hill/Olney	8.8%	6.9%
9. Germantown/Clarksburg	4.9%	4.1%
10. Rural: West of I-270	0.4%	0.1%
11. Rural: East of I-270	27.5%	6.7%
12. Washington, DC	0.5%	7.3%
13. Prince George's County	9.8%	7.0%
14. Virginia	0.5%	5.2%
15. Frederick County	10.5%	2.0%
16. Howard County	12.1%	2.8%

Appendix E

Procedures Delegating Certain APF Findings under Chapter 8 to Staff at Time of Building Permit

A. For a building permit where the PAMR and LATR tests are not needed, or when the tests are conducted and a finding of no mitigation is required, a Transportation Planning supervisor can make a finding that public facilities will be adequate to support the proposed development, set the validity period for the APF approval and authorize release of the building permit.

B. For a building permit where the PAMR test requires mitigation between one and four trips, a Transportation Supervisor may authorize release of the building permit by letter if:

   1. The supervisor finds that the public facilities will be adequate for the proposed development with the proposed trip mitigation and sets the validity period for the APF approval; AND
   2. DPWT, the Superintendent of the Montgomery County Public School System, County Fire and Rescue Services, the Department of Police, and DPS have been notified of the method of mitigation, and have not explicitly objected; AND
   3. Interested parties and the applicant have been given notice of the pending case, and have not objected to the proposed mitigation (see below, Noticing); AND
   4. A copy of a permit for construction within the ROW for the mitigation item has been received from DPS by the building permit coordinator.

C. For cases requiring mitigation of more than four vehicle trips, the item will be scheduled for an APF finding at a public hearing before the Planning Board after 1), 2) and 4) above are met. If no objections are raised by any interested parties or any of the agencies listed in 2) above, the case may be scheduled as a consent item before the Planning Board.

D. If an Applicant requests a hearing before the Planning Board or if any interested party or agency listed in 2) or 3) above objects to the proposed mitigation, the item will be scheduled for an APF finding at a public hearing before the Planning Board.

Noticing

Applicant must notice all confronting and adjacent property owners, and community and homeowners associations (following the procedure in the Development Review Manual) of the application for APF approval as well as any proposed mitigation measures. The notice must also state that anyone objecting to the proposal must do so in writing within 14 days to Transportation Planning and provide the appropriate contact information.

Monthly Report

The Chief of Transportation Planning will provide a monthly report to the Planning Board indicating each case approved by staff under this procedure in the previous month, and provide a copy of the report to the Office of General Counsel.

Details on the DPS Public ROW Permit application process are found online at:

http://permittingservices.montgomerycountymd.gov/dpstmpl.asp?url=/permitting/r/nfdp.asp

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