FREDERICK COUNTY PLANNING COMMISSION
August 10, 2011

TITLE: **APFO – Roads Text Amendment**

REQUEST: **Recommendation to the BOCC**

PROJECT INFORMATION:

Adequate Public Facilities Ordinance (APFO) – Roads and Guidelines: Requesting recommendation to the BOCC concerning draft text amendments to the road adequacy provisions of the APFO (Chapter 1-20 of the Frederick County Code) and associated "Guidelines for the Preparation of Traffic Impact Analyses for Development Applications".

STAFF: Ronald Burns, Traffic Engineer

Enclosures:

Exhibit #1: Staff Report To BOCC for July 21 Work Session
Exhibit #2: Draft APFO Ordinance – Road Adequacy Provisions (Section1-20)
Exhibit #3: "Guidelines for the Preparation of Traffic Impact Analyses of Development Applications"

STAFF REPORT

ISSUE

Whether the Frederick County Planning Commission (FCPC) should recommend approval of the attached proposed Ordinance (Exhibit 1) and Guidelines (Exhibit 2) to the Board of County Commissioners (BOCC). The proposed Ordinance and Guidelines modify the current Adequate Public Facilities Ordinance (APFO) testing for roads, and make various other changes to the APFO.

BACKGROUND

On July 21, the BOCC gave permission to staff to advance the APFO changes that were presented to them to public hearing with little discussion and no modifications. The BOCC's public hearing on the Ordinance and Guidelines is planned for September 6.

DISCUSSION

Exhibit #1 contains the staff report for the July 21 BOCC worksession which summarizes the modifications being proposed for the new APFO and Guidelines. Exhibits #2 and #3 contain the proposed Ordinance and Guidelines, respectively. These changes were developed collaboratively with representatives of the development community and are driven by and consistent with the current BOCC strategic plan, the need to be job and business expansion friendly, fair, and as simple to understand and employ as possible. They represent the need to provide dynamic solutions for the current economic climate in which we operate and to not put Frederick County in a jobs attraction disadvantage relative to neighboring counties.

The one issue discussed at the BOCC worksession was whether or not the Road Rating System (RRS) methodology should be removed from the Guidelines. The question is how much flexibility to give the Planning Commission and the staff in determining findings related to roadway safety, condition, geometrics, and bike and pedestrian needs. The RRS is a quantitative methodology for determining this non-traffic related aspect resulting in a pass/fail initial outcome and an opportunity to test alternative mitigation measures to bring a failure up to a passing level. Currently, the APFO permits but does not require the Planning Commission to employ the RRS. The new proposal is to remove it from the Guidelines, thus permitting staff and the Planning Commission to use a wide variety of sources, including the RRS, in determining non-traffic related adequacy needs. While the changes to the current Guidelines are being proposed as a companion document to the APFO, they may and would be expected to be modified in the future at any time by BOCC resolution.

RECOMMENDATION

That the FcPc recommend approval of the proposed Ordinance and Guidelines to the BOCC.

Exhibit #1

DIVISION OF COMMUNITY DEVELOPMENT

FREDERICK COUNTY, MARYLAND

30 North Market Street Frederick, Maryland 21701 (301) 600-1138

MEMORANDUM

TO: Board of County Commissioners

THROUGH: Eric Soter, Director
Community Development Division

FROM: Ronald Burns, Traffic Engineer
Development Review Planning

DATE: July 5, 2011

SUBJECT: Revisions to the Roads portion of the Adequate Public Facilities Ordinance

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ISSUE:
Should the Board of County Commissioners (BOCC) send text amendments to the road adequacy provisions of the Adequate Public Facilities Ordinance (APFO) to public hearing?

BACKGROUND:
Frederick County adopted its first APFO in 1991 and has revised it on a number of occasions since then. The first APFO road adequacy provisions were rather rigid, with requirements to always build improvements at failure, no matter what the cost, not taking into account the financial needs of small to medium sized development. In 1994, a provision was added to permit fair share contributions toward road improvements to make development growth more economically viable and thus possible for relatively small impacting projects. Thereafter, various minor amendments to the APFO were adopted. The next major overhaul to the APFO road adequacy provisions took effect in 2009.

The purpose of the 2009 APFO revisions was to address two issues: road improvements not keeping pace with development, especially in the MD 351 and MD 85 corridors, and the need to address the geometric impacts of relatively dense rural developments on sub-standard access roads. The end result addressed these issues with the reduction of the fair share road contribution window, promoting more developer constructed improvements, and the application of a road rating procedure to assess, rate and identify cost effective improvement needs along roadway links, primarily in rural areas. The result of these changes toward a more growth management and less pay-go policy has made it more costly or impossible to develop for some developers in some corridors. At the same time however, many other road adequacy provisions in the APFO were updated and made more flexible to help meet some of the needs of the

development community, primarily through the creation of a less rigid ordinance and set of guidelines resulting in more "shoulds" than "shalls".

To address the needs of 2011, especially in the current economic climate, and the strategic plan goals of the current BOCC, a dialog with the private sector ensued for the purpose of finding common ground and win/win solutions that would still protect the traveling public, while reducing and/or making more equitable, the entitlement costs to some developers, especially those providing new jobs in the County. The result of these discussions is the attached draft ordinance, which modifies the road adequacy provisions of the APFO to be more jobs friendly, fair, and simpler to interpret and apply.

In order to address 2010 Strategic Plan Goal #1: *Job Growth*, the following aspects of the road adequacy provisions of the APFO were identified for modification: testing threshold, level of service (LOS) standards, exempted road facilities, eligibility to provide contributions rather than constructing improvements, certain analysis techniques and developer mitigation of improvements not made by others in the past. The following changes are being proposed:

Testing Threshold

Issue: Currently, traffic impact analyses (TIA) are required when more than 25 trips are generated per peak hour by a new development. Impacts are rarely found for developments that generate less than 50 trips per peak hour. The costs to smaller developers for these limited impact studies usually range for $6,000 to $12,000. Most jurisdictions require a TIA when between 25 and 50 trips are generated per peak hour.

Proposal: Raise the testing threshold for submittal of a TIA back to 50 trips per peak hour, which is where it had been prior to 2008. This will lesson the burden on small developers and minimize the probability of unwarranted studies.

Level of Service Standard

Issue: Level of Service (LOS) is the basic standard used to determine adequacy of public roadway facilities. Level of Service D has been the minimal national service standard applied in urban and suburban areas for road adequacy and determining road design for several decades. Because this is no longer possible in most regions as development has far outpaced public works investment since the 1970s, a new and more realistic standard is often being applied throughout Maryland, which is LOS E. Currently, the APFO standard is LOS D, except outside of growth areas it is LOS B when applied only to signalized and roundabout traffic control at intersections.

Proposal: Modify the LOS standard to LOS E (LOS D for roundabouts and signal controlled intersections outside of growth areas).

Developer Mitigation

Issue: Should developers be responsible for mitigating only the impact of their own development or should they be required to make improvements to satisfy the APFO road adequacy requirements?

Proposal: Recognizing that the cost to construct improvements to mitigate site trips alone can be costly, requiring a developer to mitigate for the "sins of the past", that is to make

Proposal: The current APFO gives the Planning Commission discretion under some limited circumstances to give credit for trips from previous uses. The current proposal gives full trip credit to existing buildings based on their highest level of trip making in the past with no qualifications.

Geometric and Safety Road Adequacy (Road Rating)

Issue: Should these issues remain in the APFO? Most Maryland jurisdictions do not have a quantitative analysis for identifying geometric deficiencies

Proposal: Keep requirement of maintaining safety and geometric roadway standards in the APFO but remove the Road Rating as a required tool in the Guidelines, giving the Planning Commission the discretion to define safe and geometric inadequacy.

Validation Period

Issue: How long should APFO approval remain valid?

Proposal: Keep the schedule as currently defined in section 1-20-8(D)(2) but consider them as targets that may be modified by the Planning Commission with justification provided by the developer.

Traffic Study Management

Issue: Should the County or developer manage the production of the traffic study? In most Maryland jurisdictions, the developer manages their own traffic studies.

Proposal: Developers should have the option of choosing whether they will hire a traffic consultant or have the County manage production of the study. Larger studies, usually needing an iterative approach, generally favor developer control, while smaller projects can sometimes be more efficiently and quickly accomplished under County management.

Background Traffic

Issue: Should the County continue using the complicated two tier review in the APFO for back ground traffic (year of opening plus full build-out) or can this be simplified?

Proposal: Background traffic will be determined like most other Maryland jurisdictions whereby the subject development must account for all previously approved (pipeline) development.

Surplus Capacity Reimbursement

Issue: How should developers, who build off-site APFO required road improvements, be reimbursed for excess capacity created but not used by the developer's project?

Proposal: Reimbursement would be by a combination of existing escrow account funds, excise tax credits and contributions from future developers required to contribute to an escrow account set up for the purpose of reimbursing the developer who constructs the improvement. If excise tax credits are used, the escrow account would reimburse the

improvements required because of insufficient CIP, CTP or developer improvements in the past, can stop development all together. Therefore a concession was reached with the development community to permit the mitigation of site trips alone. While this is the most fair and job friendly approach, it must be recognized that this policy decision will result in the need for a more robust CIP and CTP construction program in the future, in order to keep pace with demands from already approved development.

Exemptions – Roads

Issue: Prior to 2009, all freeways, expressways and their interchanges were exempt from APFO examination. After the 2009 APFO revisions, the freeway and expressway mainline roadway sections continued to be exempt, but the ramps at interchanges were not. Ramp failures are often a function of mainline interstate and intercounty traffic flows and it is often beyond the ability of a developer to construct improvements to correct these failures. Therefore, it should be the responsibility of the County or State to construct these improvements. Many counties do not require any freeway or expressway elements to be subject to APFO.

Proposal: Remove all freeway ramps (but not their intersections with interchanging roadways) from APFO testing.

Construction Threshold

Issue: What is the proper way to determine when a developer should build an improvement, rather than making a fair share contribution? As discussed under background, this question has been considered often. This is a policy decision based on a reasonable outcome determined by the size of a development and its impact on a failing transportation element.

Proposal: In determining whether or not a developer must construct an improvement or contribute a fair share amount, the following would apply:

- If the additional traffic from the proposed development causes a 25% of a reduction or less of one LOS at a particular intersection or roadway, the developer pays a fair contribution toward a future improvement by others;
- If the additional traffic from the proposed development causes a 50% of a reduction or more of one LOS at a particular intersection or roadway, the developer constructs an improvement;
- If the additional traffic from the proposed development causes between a 25% and 50% of a LOS reduction at a particular intersection or roadway, the developer would be permitted to pay a fair share contribution only if less than 50% of funds to build that improvement have already been collected (including the contributions from the subject developer), otherwise the developer would have to construct the improvement.

Vacant Buildings

Issue: How can the APFO be revised to encourage the re-use of existing but vacant or largely vacant buildings?

County for those lost funds over time. The opportunity to use excise tax credits would not be available until changes are made in the excise tax provisions of the Ordinance.

In addition to these major changes, there are a number of minor refinements included in the text of the attached exhibits.

RECOMMENDATION:
A consensus has been reached with the development community on revisions to the roads portion of the APFO in a collaborative manner. Therefore, staff recommends that the APFO and Guidelines Exhibits to this staff report be submitted to the Planning Commission for public hearing.

FUNDING INFORMATION:
Not Applicable

Attachments

ES/RTB

Exhibit #2

THE EFFECTIVE DATE OF THIS ORDINANCE IS _____, 2011

ORDINANCE NO. _____

AN ORDINANCE TO AMEND THE ADEQUATE PUBLIC FACILITIES ORDINANCE OF FREDERICK COUNTY, MARYLAND, CODIFIED IN CHAPTER 1-20 OF THE FREDERICK COUNTY CODE TO CHANGE ROAD ADEQUACY REQUIREMENTS

Background

Under the authority granted in Article 66B, §10.01, the Board of County Commissioners of Frederick County, Maryland ("BOCC") established an Adequate Public Facilities Ordinance ("APFO") in 1991, which is codified as Chapter 1-20 of the Frederick County Code.

The Frederick County APFO has been revised it on a number of occasions since 1991. With regard to road adequacy provisions, the initial requirements were rather rigid, with requirements to build road improvements if the development failed the APFO road adequacy test, and no option for "fair share" payments. In 1995 by Ordinance No. 95-06-130, provisions were added to permit fair share contributions toward road improvements to make development growth more economically viable.

Major changes to the APFO road adequacy provisions were adopted in 2009 by Ordinance No. 09-20-524. These revisions addressed two major issues: road improvements not keeping pace with development, and the need to address the geometric impacts of relatively dense rural developments on sub-standard access roads. The 2009 amendments reduced the fair share road contribution window, promoting more developer constructed improvements, and added a road rating procedure to assess, rate and identify cost effective improvement needs along roadway links, primarily in rural areas. In addition, all of the road adequacy provisions in the APFO were updated to be more flexible, primarily through the less rigid ordinance language and set of guidelines.

In light of the current economic climate, and to address the BOCC's strategic plan goals, this Ordinance modifies the road adequacy provisions of the APFO to be more job friendly, fair, and simpler to interpret and apply.

This Ordinance was initiated by the BOCC at a meeting on July 14, 2011, and was referred to the Frederick County municipalities for comment on July __, 2011.

The Frederick County Planning Commission held a duly advertised public hearing on these proposed amendments to the APFO on August 10, 2011, and recommended _____ of this Ordinance.

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The Board of County Commissioners held a duly advertised public hearing on this Ordinance on _____, 2011, at which time the public had an opportunity to comment on the proposed revisions and amendments.

Pursuant to Section 1-20-23(A) of the APFO, the Board of County Commissioners finds the proposed revisions and amendments to the APFO, as set forth in this Ordinance, to be in the best interests of the citizens of Frederick County and consistent with the general intent of the APFO.

NOW, THEREFORE, be it enacted and ordained by the Board of County Commissioners for Frederick County, Maryland, that Chapter 1-20 of the Frederick County Code is amended as specified below:

Section 1-20-4 is hereby amended as shown.

§ 1-20-4. INTENT.

This chapter is adopted with the intent that new residential, commercial, industrial and other development take place in accordance with the Frederick County Comprehensive Plan and the Capital Improvements Program and to ensure that adequate public facilities and services are REASONABLY available concurrent with new development so that orderly development and growth can occur. Provision of adequate facilities will take place in cooperation with municipalities~~ and, when possible, neighboring jurisdictions~~, especially when ~~these~~ facilities are affected by new development which falls under the requirements of this chapter. Development and adoption of municipal APF ordinances that correspond to this chapter is strongly recommended. For the purposes of this chapter, public facilities shall include road, water, sewerage, ~~fire and emergency medical services,~~ and school facilities.

The following definitions in §1-20-5 are hereby amended as shown.

§ 1-20-5. DEFINITIONS.

* * *

(B) In this chapter, the following terms are used as defined unless otherwise apparent from the context.

* * *

AT ONE LOCATION. All adjacent land of the applicant if:

(1) The property lines are contiguous at any point; or

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(2) The property lines are separated only by a public or private street, road, highway or utility right-of-way, or other public or private right-of- way at any point EXCEPT FOR AN APPROVED PLAT OF PUBLIC TAKING; or

(3) The property lines are separated only by other land of the applicant which is not subject to this chapter at the time of any permit, site plan, development or subdivision application by the applicant.

* * *

~~*DIVISION OF PLANNING (DOP).* One of two divisions within the county government that perform certain administrative functions for the Planning Commission and other functions as directed by the Planning Commission and/or Board of County Commissioners.~~

* * *

FEE-IN-LIEU. A cash payment made to an agency in an amount APPROXIMATELY equal to the cost of providing a service or constructing an improvement for the purpose of having the service or improvement provided or constructed by others.

* * *

LEVEL OF SERVICE (LOS). A standardized index of relative service provided by a transportation network element ranging from "A" to "F" ~~with "A" representing free, unobstructed flow and "F" representing a forced flow beyond capacity of the facility, or in the case of intersections a measurement of delay where "A" represents the least delay and "F" the most,~~ as defined in the "Highway Capacity Manual" published by the Transportation Research Board.

* * *

§ 1-20-8. APPROVAL OF SUBDIVISIONS, SITE PLANS.

(A) All major residential subdivisions, major and minor commercial/industrial subdivisions, site plans, PHASE II PLANS, and revised subdivision~~s~~, PHASE II or site plans resulting in an increase in density or intensity of use, received for approval, reapproval or extension by the Planning Commission shall meet the requirements set forth herein prior to preliminary plat or site plan approval except as provided for in § 1-20-7.

(B) Subdivision plats or site plans that do not meet the requirements for adequate public facilities in Articles III-VI herein shall not be granted preliminary subdivision or site plan approval by the Planning Commission. A conditional approval as allowed for in § 1-20-11 may be granted, provided no final approval shall be granted or lots recorded until the conditions set forth in the conditional approval have been satisfied.

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(C) Prior to the signing of a preliminary plat, site plan or Phase II plan, an adequate public facilities letter of understanding shall be forwarded to the Planning Commission and to the developer.

(D) Approval of adequate public facilities as set forth in this chapter shall be valid from the date of the meeting at which approval of the preliminary subdivision or site plan approval is first granted by the Planning Commission for the following time period as long as the preliminary plan or site plan approval remains valid.

(1) *Residential subdivisions.*

6-50 units	3 years
51-100 units	4 years
101-250 units	6 years
251-500 units	8 years
501- 750 units	10 years
751-1,000 units	11 years
1,001-1,250 units	12 years
1,251-1,500 units	13 years
1,501-1,750 units	14 years
1,751 + units	15 years

(2) *Nonresidential subdivisions.* Three years, plus one year per every complete 750 daily trip increment generated during the peak day of the site, up to a maximum of 15 years.

(3) *Site plans.* For as long as the site plan approval remains valid ~~but in no event shall it be for more than 3 years~~.

(4) At the request of the developer, the Planning Commission may approve a preliminary plan, PHASE II PLAN, ~~for a nonresidential subdivision~~ or site plan ~~for a nonresidential development~~ for a time period MORE OR less than that shown above, ~~but in no case for less than 1 year~~WHEN THE INCREASED OR DECREASED APPROVAL PERIOD CAN BE JUSTIFIED BY THE DEVELOPER.

(5) If a developer is seeking concurrent subdivision and site plan approval, the APFO testing shall be required as part of the subdivision approval. Notes shall be placed on both documents specifying approved use(s).

[The balance of §1-20-8 remains unchanged.]

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§ 1-20-9. APPROVAL OF PLANNED DEVELOPMENTS.

(A) All Planned Development Phase II plans or amended Phase II plans resulting in an increase in density or intensity of use shall meet the requirements of this chapter prior to approval. A phasing plan indicating the density and rate of development in accordance with the availability of adequate public facilities shall also be approved as part of the Phase II plan approval.

(B) Planned Development Phase II plans that do not meet the requirements for adequate public facilities in Articles III-VI herein, shall not be approved except as a conditional approval as allowed for in § 1-20-11(A) or (B). Final plat approval may be granted and lots recorded as the conditions set forth in the conditional approval are met.

(C) An Adequate Public Facilities Letter of Understanding shall be forwarded by the Planning Commission to the developer. Prior to final signature and approval of the Planned Development Phase II plan, the Adequate Public Facilities Letter of Understanding shall be approved and signed by both the developer and Planning Commission.

(D) Approval of adequate public facilities for planned developments shall be valid for the length of time of the original Phase II plan approval. The Planned Development Phase II APFO validity time period shall be the greater time of the validity periods determined per § 1-20-8(D)(1) and § 1-20-8(D)(2).

(E) If the Planned Development Phase II approval expires~~,~~ OR is voided, ~~or if the Planned Development Phase II plan is amended such that the density or intensity of use is increased,~~ then the unrecorded ~~or undeveloped~~ portion of the development shall meet the requirements of this chapter prior to again obtaining Phase II approval.

(F) All planned developments seeking Phase II approval must comply with all applicable regulations, including the county subdivision regulations and zoning ordinance.

(G) Prior to recordation of final plats for a planned development, all applicable state and local requirements must be met including but not limited to the Health Department, Division of Utilities and Solid Waste Management, Division of Permitting and Development Review, and Division of Public Works requirements.

§ 1-20-10. APPROVAL OF MIXED USE DEVELOPMENTS (MXDS) AND PLANNED UNIT DEVELOPMENTS (PUDS).

(A) All MXD plans, PUD Phase II plans, or amended Phase II plans resulting in an increase in density or intensity of use, shall meet the requirements of this chapter prior to MXD plan or PUD Phase II plan approval or reapproval. A phasing plan indicating the density and rate of development in accordance with the availability of adequate public facilities shall also be approved as part of the MXD plan or PUD Phase II approval or reapproval.

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(B) All PUDs with existing Phase II approval as of December 1, 1991, shall meet the requirements of this chapter prior to preliminary plat (Phase III) or site plan approval or reapproval. A phasing plan indicating the density and rate of development in accordance with the availability of adequate public facilities shall also be approved as part of the preliminary plat or site plan approval.

(C) MXD or PUD Phase II preliminary plans or site plans that do not meet the requirements for adequate public facilities in Articles III-VI herein, shall not be approved except as a conditional approval as allowed for in § 1-20-11 (A) or (B). Final plat approval may be granted and lots recorded as the conditions set forth in the conditional approval are met.

(D) Prior to the signing of the Phase II, or preliminary plat, an adequate public facilities letter of understanding shall be forwarded by the Planning Commission to the developer.

(E) Approval of adequate public facilities for PUDs shall be valid for the length of time of the original Phase II plan approval. The preliminary plan (Phase III) APFO approval shall be based on the number of units approved on the Phase II plan. MXD approval time shall be based upon the number of units and size (acreage) of the preliminary plan.

(F) If the Phase II or preliminary plat (Phase III) approval expires~~,~~ OR is voided ~~or is amended such that the density or intensity of use is increased~~, then the unrecorded ~~or undeveloped~~ portion of the development shall meet the requirements of this chapter prior to again obtaining Phase II or preliminary plat (Phase III) approval.

(G) All MXD or PUD developments seeking Phase II, preliminary subdivision (Phase III) or site plan approval must comply with the county subdivision regulations and zoning ordinance.

(H) Prior to recordation of final plats all Health Department and Department of Public Works requirements must be met.

§ 1-20-13. ESCROW ~~FUNDS~~ACCOUNTS FOR CONTRIBUTIONS TO ROAD IMPROVEMENTS FOR LIMITED IMPACT DEVELOPMENTS.

(A) In lieu of either providing the public facility improvements or waiting for public facilities to become adequate as provided in § 1-20-12, the developer of a "limited impact development" (as defined below) shall have the option of contributing money to an escrow account as set forth in this section, provided the Planning Commission determines that the developer has fulfilled each of the requirements of this section FOR SUCH CONTRIBUTION.

(B) The amount of money the developer shall be required to place in the escrow account ~~shall~~(WHETHER THE ESCROW ACCOUNT IS ESTABLISHED OR TO BE ESTABLISHED) FOR ITS LIMITED IMPACT DEVELOPMENT SHALL be the proportionate share of THE costs ATTRIBUTABLE TO THAT LIMITED IMPACT DEVELOPMENT of making the ROAD improvements required to satisfy the roads adequacy requirements in § 1-20-31 FOR

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THAT LIMITED IMPACT DEVELOPMENT. This proportionate share shall be based on an equitable allocation ~~or portion~~ of traffic trips in the peak hour, and in the critical direction or movement, that the proposed LIMITED IMPACT development is estimated to cause, when measured against AND ACCOUNTING FOR the additional capacity that the proposed ROAD improvement ~~is creating~~ WILL CREATE. In arriving at the equitable allocation ~~or portion~~FOR THAT LIMITED IMPACT DEVELOPMENT, the Planning Commission shall consider the traffic impact of the LIMITED IMPACT development as it relates to the entire road improvement being proposed. The Planning Commission shall determine the equitable allocation based on the procedures outlined in the G~~g~~uidelines.

(C) The LIMITED IMPACT DEVELOPMENT APPLICANT ~~proposed road improvement~~ may ~~upon the~~ request ~~of the applicant~~ THAT THE PROPOSED ROAD IMPROVEMENT be designed or RE-DESIGNED to create more new capacity than that which is required for ~~the development~~THAT LIMITED IMPACT DEVELOPMENT to satisfy the adequacy requirements in § 1-20-31, if the Planning Commission determines that the road link or intersection to be improved BY THE ROAD IMPROVEMENT will require greater improvement ~~application~~ to ~~handle~~ACCOMMODATE OTHER additional future development IN THE AREA consistent with the County Comprehensive Plan.

(D) Once a road improvement is approved for a particular road link or intersection and an escrow account is established, subsequent ~~applicants~~DEVELOPMENT APPLICATIONS FOR LIMITED IMPACT DEVELOPMENTS shall either: (I) contribute ~~to the escrow fund an~~ ITS equitable allocation of the approved road improvement TO THAT ESCROW ACCOUNT, until such time that the account is closed by the county; or (II) build the approved road improvement.

(~~C~~E) The Planning Commission shall approve the escrow ACCOUNT CONTRIBUTION request FOR A LIMITED IMPACT DEVELOPMENT if the Planning Commission determines (BASED ON THE APPROVED TIA AND THE GUIDELINES) that it would not be equitable to impose the entire cost of the required ROAD improvements on ~~the developer~~THAT LIMITED IMPACT DEVELOPMENT because ~~of the limited impact that the proposed development would have on the roads in question and if the Planning Commission finds that the development~~IT would not have a substantial adverse impact on traffic.

(F) THE PLANNING COMMISSION MAY APPROVE A SPECIAL FEE-IN-LIEU PAYMENT ESCROW ACCOUNT CONTRIBUTION REQUEST, AS DETERMINED BY THE STATE OR COUNTY, WHICH SHALL NOT BE SUBJECT TO PROPORTIONATE SHARE REQUIREMENTS, IF THE CONSTRUCTED IMPROVEMENTS NECESSARY TO ESTABLISH ADEQUACY ARE PRACTICALLY INFEASIBLE DUE TO CIRCUMSTANCES BEYOND THE CONTROL OF THE APPLICANT BUT WHICH MAY BE FEASIBLE IF CONSTRUCTED AS A PUBLIC PROJECT OR BY OTHERS.

(G) A limited impact development is a development that is projected (BY THE APPROVED TIA) to lower the level of service of a roadway ~~element~~ by no more than ~~10~~50% of one level of service. HOWEVER, FOR A LIMITED IMPACT DEVELOPMENT WHICH WILL IMPACT

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A ROADWAY BY BETWEEN 25% AND 50% OF ONE LEVEL OF SERVICE, THE PLANNING COMMISSION MAY DISAPPROVE THE ESCROW ACCOUNT CONTRIBUTION REQUEST, IF THE PLANNING COMMISSION DETERMINES THAT 50% OR MORE OF THE ESCROW ACCOUNT FUNDS, INCLUDING THE LIMITED IMPACT DEVELOPMENT APPLICANT'S PROPORTIONATE SHARE, HAVE BEEN ACCUMULATED IN AN ESCROW ACCOUNT FOR THAT ROAD IMPROVEMENT. ~~Additionally, the Planning Commission may approve a special fee-in-lieu payment escrow request, as determined by the state or county, which shall not be subject to proportionate share requirements, if the constructed improvements necessary to establish adequacy are practically infeasible due to circumstances beyond the control of the applicant but which may be feasible if constructed as a public project or by others. No escrow request shall be approved for a road improvement that the Planning Commission determines is infeasible or unreasonable to construct.~~ In determining whether a development has a limited impact, the Planning Commission shall consider the general requirement in § 1-20-6(B) that the developer not avoid the intent of this chapter by submitting piecemeal applications and may deny an escrow request for a piecemeal application.

(~~D~~H) Once an escrow ACCOUNT is established, any non- exempt developer generating more than 5 trips during the peak hour of the adjacent street, as defined in § 1-20-5, having an impact on the ROAD improvement project shall be required to pay its proportionate share into the escrow account or, if applicable, make the road improvements as provided in § 1-20-12 to gain adequate public facilities approval to allow development to proceed.

(~~E~~I) The escrow account shall be maintained by the county in an interest bearing account and shall be used solely for road improvements benefitting the property as determined by the Board of County Commissioners. While in most cases the escrow payments will be explicitly allocated to specific improvements at certain locations, escrow funds may be reallocated for any transportation improvements within the same link or intersection, as outlined in the G~~g~~uidelines, so long as the transportation improvements provide an identifiable benefit to the roadway links or intersections affected by ~~the~~THAT development. If, after 10 years from the date of the first escrow account contribution, the Board of County Commissioners determines that there is no reasonable probability of implementing the transportation improvements described above in the next 6 years, the escrow account may be closed. The funds in the ESCROW account may be transferred to another escrow account within the same planning region, at the discretion of the Planning Commission, for the purpose of constructing other unbuilt escrow account projects. If the money paid into an escrow account for road improvements exceeds actual costs, the applicant may seek a refund. Any application for refund must be filed with the Director of Finance within 1 year of the time at which the funds become available for refund.

(~~F~~J) If the Planning Commission approves an escrow fund for road improvements under this section and the development meets all other requirements UNDER THIS CHAPTER, then the Planning Commission shall grant to the development conditional site plan, preliminary plat or Phase II plan approval.

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(~~G~~K) If a developer constructs road improvements for which an escrow account has been established pursuant to this section, the funds in the escrow account shall NOT BE TRANSFERRED TO ANY OTHER IMPROVEMENT AND SHALL be made available to the developer to defray the construction costs of the improvements minus that developer's proportionate share of the improvement IN A MANNER OUTLINED IN THE GUIDELINES. .

(~~H~~L) A county, state or municipal government agency may participate in the construction of or reimbursement for road improvements for which an escrow account has been established.

ARTICLE III: ROADS

§ 1-20-30. THRESHOLDS.

(A) Except where an APFO escrow account (§ 1-20-13(~~D~~H)) has already been established, this article does not apply to developments which are expected to generate ~~25~~ **50** or less total vehicle trips during the highest daily peak hour of the adjacent street traffic~~and 50 or less trips during the peak hour of the site's generated traffic~~, as defined by the most recent edition of the Institute of Transportation Engineers (ITE) "Trip Generation Manual," or the Frederick County Guidelines for the use category determined by ~~DPDR~~THE COUNTY. Site generated trips are the sum of all peak hour traffic trips in and out of the proposed site.

(B) In determining whether a proposed development exceeds the thresholds described in § 1-20-30(A), all land at one location within the county under common ownership or control by a developer shall be included. A developer shall not purposefully avoid the intent of this section by submitting piecemeal applications for Phase II plans, preliminary plats or site plans. However, a developer may seek approval of only a portion of a subdivision or development, even if the site would generate less trips than the thresh~~h~~olds in this section, provided that upon seeking approval of the remaining subdivision or development which generates trips greater than the thresholds, including that approved previously under this subsection, the development shall comply with the requirements of this section.

~~(C) The reuse of all or a majority of certain existing commercial buildings, may be exempt from road adequacy testing if approved by the Planning Commission based on the following requirements and considerations:~~

~~(1) The net increase in trip generation, relative to the previous approved use, shall be 25 or less trips in the peak hours of the adjacent street;~~

~~(2) The previous use was not vacated for the express purpose of allowing the redevelopment application being considered for approval;~~

~~(3) The reuse would not be detrimental to the quality of the neighborhood;~~

New text is shown in CAPITALS and underlined. Deleted text is shown as ~~strike-through~~.

~~(4) The building is completely or mostly vacant at time of Planning Commission hearing and consideration is given to the length of time it has been unoccupied.~~

§ 1-20-31. DETERMINATION OF ADEQUACY.

(A) For development applications meeting or exceeding the thresholds outlined in § 1-20-30, a ~~traffic impact analysis (TIA) shall be prepared~~FINDING OF ADEQUACY SHALL BE DETERMINED BY THE PLANNING COMMISSION. The portion of existing road(s) required to be adequate shall be determined by ~~DPDR~~THE COUNTY, based on the completed and signed Notice of Intent to Develop (NID), as required in the guidelines, and either a pre-study conference or documented correspondence between the county and the developer. The ~~DPDR~~COUNTY shall use the guidelines to adopt a reasonable study area based on sound traffic engineering knowledge of the site and the surrounding area. Any disputes regarding study area or scope, whether raised prior to or after the adoption of a study area, shall be resolved by the Planning Commission.

(1) All freeway and expressway mainlines AND THE UNINTERRUPTED FLOW PORTION OF RAMPS shall be exempt from the requirements herein.

(2) All other roads ~~and interchanges~~ in the county shall be subject to the requirements herein.

(B) The TIA shall be prepared for the design hours, which are defined as the peak hours which will be most affected by the proposed development; i.e., any combination of a.m., mid-day, p.m., evening, weekend peak hour of the adjacent street, or peak hour of the generation by the land use as determined by ~~DPDR~~THE COUNTY. The TIA shall include, but not be limited to:

(1) Vehicle trip generation by the proposed development and traffic expected to be generated by approved development in the study area as outlined in the guidelines and as determined by ~~DPDR~~THE COUNTY. The latest edition of the ITE "Trip Generation Manual" shall be used unless specifically applicable rates are identified in or permitted by the guidelines;

(2) LOS capacity analysis of all required roadway corridors, intersections and links for existing conditions and specified intermediate and future conditions with and without the proposed development as delineated in the guidelines;

(3) In cases where traffic safety is identified as an issue by ~~DPDR~~THE COUNTY OR SHA, reported traffic crashes for the last 3 years for which data is available;

(4) Transportation improvements currently fully funded for construction in the most recent CIP or CTP by or before the year of expected completion of the project or project phase, assuming the project buildout criteria in § 1-20-8;

(5) Other improvements approved and permitted by the county, state or a municipality, or under construction, with a certification by that agency that construction is likely to be completed concurrent with the opening of the development project; and

(6) Any other information that may reasonably be required by ~~DPDR~~ THE COUNTY to effectively evaluate the road network or application.

(C) All TIA's shall use the analysis procedures and methodologies set forth in the guidelines.

(D) Using methodologies specified in the guidelines, the following level of service criteria shall be met to determine road adequacy.

(1) Signalized intersections and roundabouts located within designated growth boundaries in the County Comprehensive Plan shall be considered adequate if a LOS "~~D~~E" or better is maintained. Signalized Intersections and roundabouts located outside of these areas shall be considered adequate if a LOS "~~B~~D" or better is maintained.

(2) All other roadway ~~and ramp~~ links, unsignalized intersections and corridors when required by ~~DPDR~~ THE COUNTY, based on sound traffic engineering principles, shall be determined to be acceptable if a LOS "~~D~~E" or better is maintained or mitigation is provided in accordance with the guidelines.

(3) For land uses resulting in seasonal or irregularly scheduled special events or activities, which will generate relatively large amounts of traffic, generally not impacting the peak hour of the adjacent streets, adequacy may be determined by review of a traffic management plan (TMP), if required by ~~DPDR~~THE COUNTY. The projected number of vehicle trips for each special event, the classification and character of the roads which will be utilized to transport vehicles to and from the event, and the number of days per year the event will be held, shall be considered. The TMP shall be in accordance with the guidelines and supplement the specific standards set forth in subsections (B) and (C) above, as determined by the Planning Commission. In the event the facility would also contain permanent regular uses, in addition to special events, the regular peak period uses of the facility must be reviewed and comply with all parts of this article.

~~(E) As specified in the guidelines, certain master plan bicycle and/or pedestrian facilities, as well as any sidewalks, shall be constructed or improved, or a fee-in-lieu of improvement provided, if approved by the county and if the facility is either non-existent or deemed inadequate by DPDR.~~

(E~~F~~) If the road facilities are determined to be inadequate to accommodate the traffic flow projected by the TIA, the preliminary plan, Phase II or site plan approval shall be denied, except as provided for in § 1-20-11.

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(F~~G~~) ~~Road improvements~~TRANSPORTATION FACILITIES necessary to mitigate inadequacies shall be determined by the Planning Commission after reviewing the entire record, including the TIA, ~~road rating system~~, TMP, safety considerations, SIGHT DISTANCE, HORIZONTAL CURVATURE, VERTICAL GRADES, ROADWAY SECTION, STRUCTURAL ADEQUACY OF ROADS AND BRIDGES, BIKE AND PEDESTRIAN NEEDS, and Maryland State Highway Administration comments; and improvements, WHEN JUSTIFIED TO SUPPORT OR COMPLEMENT THE DEVELOPMENT, OR MITIGATE ITS IMPACTS, may be provided by the developer as prescribed in § 1-20-12.

(G~~H~~) ~~If one or more of the following criteria are met, the Planning Commission may approve a development if the~~A development SHALL BE RESPONSIBLE ONLY FOR THE CONSTRUCTION OF ROADWAY IMPROVEMENTS THAT mitigate~~s only~~ those trips that will be generated by the development:

~~(1) The development is located within a priority redevelopment area as provided for in the countywide Comprehensive Plan, including any corridor or community plans;~~

~~(2) The development impacts road(s) which would need to be built to a greater capacity than the master plan recommendation and which cannot reasonably be improved due to physical, historical or natural environmental constraints, as determined by DPDR;~~

~~(3) The majority of the development is located within a transit oriented development overlay zone/district;~~

~~(4) The improvement(s) necessary to achieve full adequacy is denied approval by the state, county, city or a municipality, whereby the Planning Commission may consider alternatives that would be acceptable to the controlling agency so long as the Planning Commission receives written confirmation from that agency, along with DPDR concurrence; or~~

~~(5) An interchange ramp terminal (weave, merge or diverge point) that is part of the development's study area is inadequate solely due to the volume on the mainline or the number of through lanes.~~

(H~~I~~) If ~~construction~~ THE DEVELOPMENT PROVIDES FULL MITIGATION (CONSTRUCTION OR FAIR SHARE CONTRIBUTION TO ESCROW ACCOUNTS AS REQUIRED UNDER THE LOU OR DRRA) of APFO road improvements for a development ~~is completed within the approval period of the preliminary plan, Phase II plan or site plan, and~~ within the APFO approval period, the APFO road approval shall be vested for the capacity created by the improvements and shall not be subject to further APFO roadway testing unless there is an increase in site trips or a significant redistribution of site traffic because of a change in land use or increase in site density, as defined in the guidelines.

AND BE IT FURTHER ENACTED AND ORDAINED that this Ordinance shall apply to applications for subdivision, re-subdivision, site plan, or Phase II approval or re-approval which have not yet received APFO approval as of the effective date of this Ordinance.

AND BE IT FURTHER ENACTED AND ORDAINED that the effective date of this Ordinance shall be _____, 2011.

The undersigned hereby certifies that this Ordinance was approved and adopted on the __, day of _____, 2011.

ATTEST:

BOARD OF COUNTY COMMISSIONERS OF FREDERICK COUNTY, MARYLAND

_____

David Dunn, Acting County Manager

By:_____(SEAL)

Blaine R. Young, President

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Exhibit #3

Guidelines for the Preparation of Traffic Impact Analyses for Development Applications

Frederick County

Adopted _____ ~~2009~~2011

DRAFT

FREDERICK COUNTY, MARYLAND

1748

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Introduction/Administration

These Guidelines have been adopted by the Frederick County Board of County Commissioners (BOCC) for use, as applicable, by County staff, consultants, the Frederick County Planning Commission (FCPC), and the BOCC for certain zoning matters, to assess the traffic impact of development proposals for testing road adequacy under the Frederick County Adequate Public Facilities Ordinance (APFO) and other codes as applicable. The Guidelines also indicate the manner in which traffic and road information will be presented to the FCPC and the BOCC. The Guidelines serve both the purpose of supplying regulation as well as practice. Tasks and methodologies preceded by "shall" are considered as regulation and those proceeded by "should" are considered as a practice or guideline.

While the need for and level of completeness of a traffic impact analysis (TIA) is determined by the Traffic Engineer, adequacy findings must be made for all developments as required by the APFO.

~~The Road Rating System, described in Appendix B, may be employed and used as a tool in zoning, subdivision and site plan cases where there is reason to believe that there may be inadequate roadway features on the site's adjacent roads, in order to provide for the health, safety or welfare of the development's greater neighborhood. Should deficiencies be identified, the BOCC or FCPC may use the System to identify necessary improvements to mitigate the deficiencies.~~

In addition to the other requirements of these Guidelines, all TIA's should include the following:

1. Name of the development, applicant and civil engineer, and their contact information.
2. Application reference to the type of application it supports.
3. A plan of appropriate scale showing all proposed driveways and internal roadways and the acreage and proposed density of the subject parcel.
4. A vicinity map showing the exact location and boundaries of the parcel.
5. Any previous application numbers and approvals associated with the parcel.

A glossary of terms frequently used by transportation professionals is provided in Chapter 1 of these Guidelines. General information for initiating a TIA is provided in Chapters 2 through 4. Chapter 5 provides detailed guidance on TIA requirements for each type of application. Chapters 6 through 10 describe the specific procedures required for the TIA. Chapters 11 through 13 describe the procedures for Transportation Facilities Mitigation Plans.

These Guidelines assume certain levels of completeness and reliability of tools or resources that are referenced throughout this document. If or when these tools or resources are not at the level of reliability or completeness necessary for the accurate development of TIAs, the Traffic Engineer may require the use of alternative tools or resources, so long as they are consistent with professional engineering practices.

The portions of these Guidelines pertaining to the development of a TIA shall apply to any traffic engineer, regardless of whether or not they are contracted by the County or a developer.

CHAPTER 1
Glossary of Terms and Acronyms

Access Controls - Regulations by which access to a road facility from individual driveways, minor streets or major streets may be limited for the purpose of increasing roadway capacity and improving safety

Arterial - A roadway for through traffic linking major traffic generators and communities to regional highway facilities

At-Grade Intersection - The location at which two roadways cross and join at the same vertical elevation; access through the intersection may be controlled by traffic signals, roundabouts or stop/yield signs

Average Daily Traffic (ADT) - The total traffic volume passing a point or segment of a roadway in both directions during an average 24-hour period

Background Traffic - In a TIA, existing traffic in accordance with recent traffic counts + traffic generated by pipeline development + growth in through traffic on the current road network, all assigned to the existing and proposed roadway network

Capacity - On a roadway link, the maximum number of vehicles which can pass a given point during one hour under prevailing roadway and traffic conditions

Capital Improvement Projects (CIP) – County listing of programmed (budgeted) capital improvements by year of projected development

Collector - A roadway with no control of access linking residential or commercial communities with the arterial roadway system

Comprehensive Plan (CP) – Approved Countywide master plan including the official master plan of transportation; includes Corridor and Community Plans

Consolidated Transportation Program (CTP) - Maryland Department of Transportation (MDOT) listing of programmed (budgeted) capital improvements by year of projected development, primarily for State Highway Administration (SHA) roadways

Community Development Authority (CDA) – County authority set up to issue bonds for improvements to be repaid by the benefiting community.

Critical Lane Volume (CLV) - At an intersection, the sum of the critical movements in the north-south direction and the east-west direction

Critical Movement - At an intersection, the highest total of the through movement (and right turns when an adequate turn lane is not provided), plus its opposing left-turn movement in one direction on an hourly, per-lane basis

Cycle - The time period required for one complete sequence of traffic signal indications

De Minimus Development - A development which generates 5 or fewer peak hour trips during the peak hour of the adjacent street

Design Speed - The maximum safe speed for which the various features of the roadway are designed

Diverge Point - A location at which a single lane of traffic separates into two separate lanes, such as where a ramp leaves a highway

Existing Traffic - In a traffic analysis, current traffic in accordance with recent traffic counts on the current road network, "recent" being defined in Chapter 3

Expressway - A divided highway for through traffic with partial control of access (no driveways) mixing grade-separated interchanges and some well-spaced at-grade intersections

Freeway - A divided highway for through traffic with full control of access using grade-separated interchanges exclusively for access

Grade Separation - A location where roadways cross, with one passing over the other on an overpass, but lacking a direct connection via a system of ramps

Grade-Separated Interchange - A location where roadways cross, with one passing over the other on an overpass, with ramps joining the two roadways

Level of Service (LOS) - A qualitative measure using a sequence of letters from A through F to describe the quality of operational conditions within an intersection, roadway link or corridor.

Merge Point - A location where a ramp enters a highway, allowing traffic to enter the main traffic flow on the highway

Modal Split - The percentage of people using a particular means of transport, such as auto, transit, bicycle or walk, to make a trip

Operating Speed - The 85th percentile observed speed for given roadway and traffic conditions not affected by congestion or a traffic control device

Pass-By Trip - A trip generated by a land use which is already using the road adjacent to the site; frequently associated with non-destination land uses such as retail centers, service stations and fast-food restaurants

Peak Hour - The one-hour period of greatest utilization of a road, or other transportation facility; weekdays normally have two peaks, morning and afternoon

Peak Period - A three-hour period during which a road, or other transportation facility, has significantly increased use; includes the peak hour

Phase - A portion of a traffic signal cycle allocated to any traffic movement or combination of movements

Pipeline Development - Development having an approved or conditionally approved and valid preliminary plan of subdivision, site plan, Phase II plan or a recorded plat, but is not yet occupied

Ramp - A length of one way roadway providing an exclusive connection between two roadways

Roadway Link - A segment of roadway between two intersections

Study Area - Critical transportation facilities (defined as site access points; intersections; interchanges; roadway links and/or corridor) to which 25 percent, or 50 peak hour trips, of the site generated traffic is assigned, but not less than 13 trips

Through Traffic - Trips which begin and end outside of a given study area passing through the study area

Total Traffic - In a TIA, background traffic plus traffic generated by development under consideration

Traffic Impact Analysis (TIA) – The assessment of site traffic impacts and mitigation alternatives based on traffic forecasts and analysis techniques described in these Guidelines

Traffic Control Device (TCD) - Any sign, signal, pavement marking or device placed or erected for the purpose of regulating, warning or directing traffic and/or pedestrians

Traffic Engineer - The staff person located in the Development Review Engineering (DRE) Department of the Division of Permitting and Development Review (DPDR), or such other staff persons who may be designated to advise Commissioners on traffic issues

Traffic Management Plan (TMP) – Operations and safety plan developed for major events expected to overburden facilities over short periods of time

Transportation Facility – Roadway, transit, bike lane, sidewalk, trail, traffic control device, etc.

Transportation Facilities Management Plan (TFMP) - Conceptual improvement plan used to seek concurrence of scope among agencies

Travel Demand Management (TDM) - Strategies to reduce vehicular commuting trips, including the use of carpools, vanpools, buses, bicycling, walking, compressed work hours, or working from home.

Trip Assignment - The process of allocating vehicle travel generated by a land use to/from each link of the roadway network

Trip Distribution - The process of estimating the direction of travel and the length of vehicle trips originating from or destined for the development

Trip Generation - The process of estimating the number of vehicle trips originating from or destined for the uses on a land parcel

Volume-to-Capacity Ratio (V/C) - A performance measure computed using the ratio of an actual roadway volume to the capacity of a roadway link

Weaving Section - A highway section where the pattern of traffic traveling in the same direction entering and leaving at adjacent points of access results in vehicle paths crossing each other

CHAPTER 2
Traffic Scope, Development & Process

An assessment of the area that will be affected by traffic generated by the proposed development must be made. The size and shape of the study area should depend on the size and type of development proposed, the development's trip making characteristics, the existing and planned roadway system, adjacent and proposed land uses, and the presence of natural or man-made barriers.

Prior to beginning a traffic study, the applicant or designee ~~shall~~ normalluy submits a Notice of Intent to Develop (NID) and request that Development Review Engineering (DRE) identify the study scope. See Figure 1. DRE will ~~endeavor to respond to the NID at least 6 weeks prior to the applicant's intended date for submission of a development application. Within two weeks of initial receipt of the NID from the applicant, the Traffic Engineer, or designee, will endeavor to complete the County portion of the NID and~~ discuss with the applicant the scope of proposed study area and the other relevant assumptions associated with the proposed TIA.

The study area ~~shall~~ should include all significant and critical transportation facilities (defined as site access points; intersections between collectors, arterials, freeway ramps and/or expressways; ~~interchanges;~~ roadway links that are functionally deficient or where signalized intersections are not the critical peak direction traffic constraint; and/or corridor systems) to which 25 percent, or 50 peak hour trips, of the applicant's site-generated traffic is assigned, whichever is less (represents a lower volume), but ~~in no case~~usually not less than 13 trips; or as otherwise determined by the applicant and Traffic Engineer.

~~Once traffic engineers are procured by the County and fees are established, t~~The TIA ~~is to~~may be prepared by the ~~DRE~~ County consultant (generally within 2 to 4 weeks depending on complexity and traffic count requirements) or by a consultant contracted by the applicant and based on the Guidelines outlined in Chapters 3 through 10 of these Guidelines. Good communication between the applicant, Traffic Engineer and the consultant is paramount, especially for developer contracted work. Upon receipt of the completed TIA, it should be immediately logged and turned over to the Traffic Engineer who will endeavor to perform a review of the study for sufficiency within three days. This review consists of the following:

1. Verifying existing conditions and counts.
2. Checking consistency of all assumptions with the NID and other supporting documentation of the application, reviewing of pertinent assumptions with the applicant.
3. Confirming the appropriate use of procedures and methods of analysis from these Guidelines or from other professionally recognized sources.
4. Confirming the submission of all count sheets, surveys, project scoping or other site-specific field data.

Upon completion of this review, if the traffic study is deemed acceptable by the Traffic Engineer, it will be submitted electronically and 2 hard copies with~~via~~ disc (submitted with the plan submission), to the ~~applicant~~County, for distribution to SHA ~~(5 copies)~~, ~~DPW~~DPW ~~-~~and a municipality, if applicable, for review and comment. If it is not adequate, it will be immediately returned to the consultant for modification.

~~An applicant may petition the Frederick County Planning Commission (FCPC) to perform the TIA, instead of the County, prior to application submittal. The FCPC will consider the following in its decision:~~
~~If it would cost the applicant more money or take more time for the DRE consultant to complete the TIA;~~
~~If the applicant had already performed a TIA for another agency or could re-use significant parts of a previously performed TIA;~~
~~If there is a complex staging sensitivity analysis required as part of a preliminary plan;~~
~~If the developer's usual consultant is not under contract by the County; and~~
~~If another related traffic analysis, such as that required by SHA, would cause the developer to have to duplicate any work performed by the County consultant.~~

~~In the case of a developer provided TIA, a review fee shall be collected with each resubmission and the mandatory review period time frames may be suspended due to longer review times as needed.~~

Figure 1

Frederick County
Division of Permitting and Development Review
Development Review Engineering

Notice of Intent to Develop (NID)

This form should be completed at least 6 weeks prior to submitting a development application requiring APFO – Roads approval.

1. Date:

2. Applicant/Applicant's Engineer and phone/e-mail:

3. Development Name:

4. Type of Application (Site or Preliminary Plan):

5. Location (attach map showing site location and boundaries) including address and/or Liber/Folio:

6. Existing Use (check one): Residential_____ Commercial_____ Other:
If Residential, number and type of units:
If Commercial, amount and type of space & site size:
If other, describe:

7. Proposed Use (check one): Residential_____ Commercial_____ Other:
If Residential, number and type of units proposed:
If Commercial, amount and type of space proposed & site size:
If other, describe:

8. Other assumptions, comments &/or attachments, if applicable:

9. DPDR to select Traffic Engineering (TE) firm ____
Or, preferred TE firm(s) (order of preference):

SIGNED: _____ _____
Applicant or Applicant's Representative Date
Staff Use Only

- o APFO Exempt (< 6 new trips during street peak hours)
- o APFO Consideration (6 to 25 new trips during street peak hours)
- o APFO Testing (> 25 new trips during street peak hours or > 50 during site peak)

County Traffic Engineer **Date**

CHAPTER 3
Inventory

Roadway Configuration
As part of the TIA, an inventory of the study area should be performed, indicating the characteristics of existing roadways, shown on a map of appropriate scale. A field inspection of the roadways which will be affected by traffic generated by the proposed development should be made to determine the number of lanes, the number of approach lanes at intersections, the location of median openings, type of TCD's in place, and horizontal and vertical alignment (if irregular). ~~If a Road Rating System analysis is required, as described in Appendix B, additional field information will be required to be gathered.~~

Traffic Counts
Recent traffic counts ~~shall~~ should be included for all links and intersections within the study area. Counts at intersections should normally consist of AM and PM weekday peak-hour turning movements and/or turning movements at other times as deemed necessary by the Traffic Engineer. The beginning and ending times for the peak hours will be identified by inspection of peak period or longer duration count tabulations. Traffic counts may be available from the State Highway Administration (SHA) or County DPW. Traffic data must reflect existing normal peak-hour conditions at the time of the study, and should not normally be used if the data is more than one year old at the time of original submission of the NID or if significant changes have occurred at or near the count location since the count was taken. The traffic consultant shall be responsible for providing traffic counts that are not available through the state or the County. Traffic counts assessing typical weekday AM and PM peak hours should not be conducted during periods when schools are closed, or on the day of and days before or after national or local holidays, or on Mondays or Fridays. While summer counts are discouraged, they may be used when approved by the Traffic Engineer with the application of an appropriate adjustment factor based on SHA's Traffic Trends Report.
A count ~~must~~ should not be used if there are significant traffic incidents (crashes, closures, etc.) or inclement weather in the vicinity of the count location during the count. In addition, ongoing construction on nearby roadways may cause temporary diversions that could result in counts which do not reflect normal conditions. Adjustments to counts taken under these circumstances should be made using a method acceptable to the Traffic Engineer.

Transit
Existing transit service that serves the proposed development should be noted. The location of bus routes, location of bus stops, frequency of service, and hours of operation should be noted. This information is ~~required necessay~~necessary if vehicle trip reductions are being assumed.

Pedestrian and Bikeway Facilities
Facilities delineated in the County Bikeway and Trails Plan which connect or are proposed to connect the proposed development to nearby trip-generating uses should be noted. This information is required if vehicle trip reductions are being assumed because of these facilities as well as for defining site frontage and off-site needs. Data on the expected share and distribution of pedestrian and cyclist trips may be considered in the preparation of the traffic study by the Traffic Engineer.

Land Use
Knowledge of nearby existing land uses and their approved access locations is useful in assessing the access required from the roadways in the study area. Field inspection will determine existing land uses.

Traffic Crash Data
Information relating to traffic safety and efficiency, including access points, directional signing, internal circulation and general parking proposals may be assessed. The crash data to be presented should be obtained for the most recently available three-year period prior to the submission of the study. Crash rates (based on total and fatal crashes) for the subject roadway link should be compared to the average for roadways of comparable classification in Frederick County. Crash data and rates are ~~available~~ obtained from the SHA and County.

CHAPTER 4
Projected Traffic Growth and Planned Transportation Improvements

For the TIA, the growth in traffic within a study area should include traffic generated by certain other approved development in the study area and an estimate of growth in through traffic.

Growth in through traffic may be estimated using either historical traffic data, knowledge of the surrounding area, or application of the County travel demand model. Extrapolation of historical data, normally from ten years previous based on actual counts, may be considered acceptable for developments that will be built within a five-year time horizon. More in-depth study of the surrounding area is encouraged for development proposals of a broader scale. For those study areas that are within 2 miles of the County line or a municipality, an effort should be made to identify those trips in the study area that have an origin or destination from land uses outside the County. Through traffic growth should normally only be shown on arterials, expressways and freeways.

The amount of approved development that ~~must~~ should be considered in traffic studies for various types of development reviews (i.e. zoning, subdivisions, site plan, and special exceptions) will vary depending on the type of development review underway and the expected date of development opening and completion. The requirements for considering approved development for each type of study are identified in the appropriate paragraphs in Chapter 5. At this time, there is no single source of reference for approved, or background, development. Field checking of background development is required for all land uses in stages of physical development.

Planned transportation system improvements considered in preparing traffic studies will also vary depending on the type and phasing of the development under study. Planned improvements that should be considered are identified in Chapter 5. Improvements in the County's Capital Improvement Program (CIP) and the State's Consolidated Transportation Program (CTP) which are fully funded for construction can be considered so long as they are projected to be open to traffic by the time the development opens. Improvements by others with full surety would have the same status as CIP or CTP improvements when the following criteria are met:

1. The surety is sufficient to fully cover the estimated construction cost of the improvement assumed in the traffic analysis.
2. The construction or right-of-way permit has been approved by the SHA or County, respectively.
3. ~~A construction schedule (for the improvements to be open to traffic by the opening of the applicant's development) has been included in the permit package. In order to include an improvement by others in a traffic analysis, the applicant must clearly demonstrate that the above criteria have been met and construction of the improvement should have commenced.~~

CHAPTER 5

Requirements for Traffic Studies for Various Types of Applications

Any TIA should provide the necessary information to support the required findings for the proposed development. Those developments generating ~~25~~ 50 or fewer trips during the identified peak hour(s) of the adjacent street ~~and 50 or fewer trips during the peak hour of the site~~ are exempt from APFO but shall be required to contribute to existing escrow accounts, unless they are considered a de minimus development and therefore, will not be required to contribute to any existing escrow accounts.

The following discussions highlight more detailed information required for TIAs associated with the major types of development applications.

Floating Zones A summary of required procedures is described below for Non-Euclidean zones, Planned Unit Developments (PUD) and Mixed Use Developments (MXD), Phase I and II applications. Additional guidance can be provided by the Traffic Engineer.

(1) *Phase I (Rezoning) Applications*:
If deemed necessary by DOP, the traffic analysis for a Phase I application should support the requirements for approval. DOP Staff may prepare an evaluation of the transportation facilities on the Comprehensive Plan (CP) in conjunction with the full development of the area; taking into consideration any known changes that have taken place in development since the master plans were approved.
The traffic analysis will be based on forecasts of average daily traffic (ADT) volumes developed utilizing the DOP travel demand forecasting model applied to roadway links. The specific requirements of a traffic analysis PUD/MXD Phase I applications is as provided for in the Frederick County Zoning Ordinance.

(2) *Phase II Plans*:
Approval of Phase II Plans requires that adequate transportation facilities consistent with the requirements of the APFO will be available to support the proposed development. See the following discussion for specific details for TIA development of subdivision/site plans as the requirements are the same.

Subdivision and Site Plans
The Frederick County Code (Chapter 1-20) requires that the Planning Commission determine that the roads that will serve a proposed development will be adequate. To make this finding, a TIA is typically required if the proposed development will produce more than ~~25~~ 50 trips during the identified peak hour(s) of the adjacent street ~~or more than 50 trips during the peak hour of the generator~~.

The study must forecast future traffic volumes for the roads and streets within a study area that has been approved by the Traffic Engineer. This would include ~~only~~ pipeline and pending development, producing more than 5 trips per hour, which could realistically be built by the time the subject development, is completed in whole or by phase, as determined by the Traffic Engineer. Additional pipeline development may be required that is anticipated to be in place beyond the year of site opening so long as the required road improvements associated with that development are built, under construction or permitted for construction. If these unfunded improvements are necessary to support the subject development, the applicant would be required to mitigate the improvement and count the land use tied to its initial designation.~~If no constructed improvements would be required to satisfy APFO requirements under this traffic scenario, a second scenario assuming the accounting of trips from all pipeline and pending development, regardless of when it would be developed, must be analyzed. Under this scenario, however, the developer would only be required to provide mitigation that ameliorates impacts created by its own development trips.~~

A listing of all properties considered in projecting future traffic volumes shall be provided by the Traffic Engineer and must be included in all TIAs submitted. Growth in through traffic should be projected using the methods outlined in Chapter 4.

Transportation improvements that may be used for traffic studies as part of the required test for adequacy must have 100 percent of the construction funds programmed in either the adopted County CIP or the current State CTP on or before the expected year of opening of the site, or if phased, the opening of the particular phase of the site (per APFO Sec.1-20-31(B)(4)). Roadway improvements participated in or funded by the developer will also be considered, provided such improvements are imposed by the FCPC as a condition or conditions of approval. Improvements by others may have the same status as CIP or CTP improvements when the criteria in Chapter 4 are met.

~~The thresholds for determining adequacy and potential mitigation of off-site master plan trails and on-street bikeways, as well as sidewalks, are as follows:~~

1. ~~The site is contiguous to or contains a master plan trail or on-street bikeway (bike lane, shoulder or marked shared lane) and~~
2. ~~A complimentary attracting land use (e.g., between residential and schools, commercial sites, other residential and public facilities),,either existing or approved, is within 1.2 miles of the site's border for considering master plan trails and bike lanes or 0.6 mile of the site for considering sidewalks (The threshold is increased to the FCPS walking limits for schools when the attracting land use is a public school.), or~~
3. ~~Any existing or approved land use is within the distance criteria in #2 above and the site is located within the designated Growth Boundaries.~~

When assessing any development with a noted or assumed site generated trip cap that is exceeded in any critical peak hour, an entirely new TIA (and APFO approval) must be developed using current day counts and assumptions. In the case of change of use of an approved development that is still within the identified trip cap, but whose new peak hour trip assignment is greater than 25 trips on any link, the original approved TIA's counts and other assumptions may be used, but with the new trip distribution and assignment based on the new land use. When assessing any vacant building, the highest level of trips that the previous use had generated shall be considered the base case and only those additional trips may be considered as new for the purpose of establishing study threshold and APFO mitigation requirements. If any mitigation is required it would be in conformance with Chapters 11-13 of these Guidelines.

CHAPTER 6
Trip Generation

The TIA must always include a breakdown of the development proposed, consistent with zoning and the site plan (when applicable), and consistent with the proposed uses shown and described in the NID. A complete summary of gross square footage by land use category should be provided for all nonresidential land uses. A summary of the number and type of dwelling units proposed should be provided for residential land uses. This information will facilitate the application of appropriate trip generation rates.

Appendix A provides trip generation rates for various land uses unique to Frederick County. These rates were developed by studies of existing land uses in Frederick County and should be used in all traffic studies when applicable. Trip generation rates for land uses not cited in these Guidelines should be estimated using the most recent edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. Trip generation rates for any uses not cited in the Guidelines or the ITE manual should be researched for validity and are subject to approval by the Traffic Engineer. Should the trip generation data be collected, the trip generation report should include the following:

1. Specific time period for data collection (i.e. dates and times)
2. Specific location of measurement stations
3. Measurement techniques (visual, mechanical)
4. Specific description of the site(s) chosen (to include size of development, land uses, occupancy, number of employees at work on the day of data collection, and hours of operation, if relevant)
5. Description of pertinent site characteristics (e.g., number of employees, square footage, ownership, availability of transit and parking).

It is expected that normally AM and PM weekday peak hour rates and weekend mid-day peak hour rates, by direction, will be analyzed unless the Traffic Engineer has agreed otherwise. When using ITE rates, the formula is always preferred over the average rate unless there is some particular technical or statistical justification to propose otherwise, which will require approval by the Traffic Engineer.

The trip generation rate estimate developed should reflect the potential of the proposed land use(s) to produce or attract vehicular trips. The estimates developed in the traffic study are useful in determining access requirements. Analyzing the impact of the proposed land use(s) on the roadway network may necessitate considering other factors, such as diversion from the existing stream of traffic. For example, much of the traffic to and from a community shopping center may actually be newly generated trips; the remainder is intercepted from traffic already on the roadway, referred to as either diverted or pass-by trips. Diverted trips may be attracted from a nearby facility and are usually conservatively assumed to be new trips, especially in smaller study areas. However, pass-by trips should be calculated using the procedure in the latest edition of the ITE manual. For an office building, however, virtually all of the traffic is newly generated with few or no trips diverted from the traffic already on the highways.

Adjustments for internal "captured" trips may be applied for new land uses or additions to multi-use developments, consistent with ITE methodologies and with concurrence from the Traffic Engineer

For nonresidential development, trip generation will be based on the amount of each type of land use specified in the traffic study.
When recommending approval of the subject development, the Traffic Engineer will include a condition that caps the trips being generated by the development based on the TIA. Similar conditions or capping would also apply to multifamily or condominium residential development.

Any trip reduction strategy proposed at the outset of a study process ~~must~~ should be identified in the NID and strategies outlined in the TIA as ~~conditioned with appropriate surety and remedies~~ outlined in Chapters 10 and 11 ~~in order to be included in the TIA~~.

CHAPTER 7
Trip Distribution

Existing and projected traffic volumes entering and leaving the study area should be assigned to the roadway network by time of day. The existing traffic distribution, by principal direction of travel, may be used as a guide for determining the site trip distribution when the proposed development is of limited scope and major alteration of the roadway system is not planned. The most recently published US Census of Travel or MWCOG Regional Household Travel Survey can also be considered during the distribution of trips. Depending on the scale of the proposed development, planned roadway improvements, and existing traffic conditions, it may be desirable to use regional trip tables from the County travel demand model for the distribution of trips.

When using a different technique than described above, the distribution of trips associated with the proposed development ~~must~~ should be justified by the relative location of other generators. For mixed-use developments, it will be necessary to distribute residential, shopping and employment trips separately based on surrounding residential, retail and commercial development.

CHAPTER 8
Modal Split

During this stage of the analysis, the use or potential use of transit service or trip reduction strategies may be addressed. Transit availability as determined in the inventory stage is used to assess the potential for future transit use.

It should be recognized that the trip generation rates presented in Appendix A were based on surveys of sites in Frederick County where public transit service may have been available. The same is true of sample sites in the ITE Trip Generation Manual. Any projected increases in transit ridership should be based on planned changes in the availability of service, cited references or actual data. It should further be realized that transit use varies for differing trip purposes (work trips, shopping trips, etc.) and should be applied as a percentage reduction of total trips.

Assumptions regarding future travel to the site with the use of trip reduction strategies ~~must~~ should be based on regional or local survey data, and the proximity of various other land uses, related to the trip reduction strategies to be implemented by the applicant. Local data may be collected and utilized if the collection method is agreed to by Traffic Engineer prior to conducting such surveys.

CHAPTER 9
Trip Assignment

After reducing generated trips by modal splits, if applicable, projected traffic volumes should be assigned to the roadway network within the study area using the distribution factors previously developed per Chapter 7. Should more than one parallel route option be available in the same travel shed, a further subdivision of trip distribution is encouraged resulting in reasonable assignments based on likely travel times, avoiding such situations as all or nothing assignments whenever possible.

CHAPTER 10
Network Evaluation

The ability of the roadway network to accommodate projected traffic volumes generated by the proposed development ~~must~~ should be assessed utilizing various techniques to measure capacity of the transportation network facilities.
Facility capacities- are defined over a range of operating conditions utilizing the level-of-service (LOS) concept. A description of this concept is included in the *Highway Capacity Manual* (HCM). The techniques selected to measure capacity and determine corresponding levels of service depend on the nature of the study area and the facilities under study.

In areas where the flow of traffic is controlled by signals, spaced far enough apart that their operation do not conflict with one another (generally one mile or more), the critical lane volume (CLV) analysis, which is a broad evaluation of the capacity of an intersection that determines the LOS for a given set of demand volumes and geometrics, should be used. The advantage of the technique is that it is simple and easy to use. The technique to be utilized is to be found in the Guidelines for Traffic Impact Reports/Studies published on line by the SHA: http://marylandroads.com/businesswithsha/permits/ohd/AppendixE.asp

In those cases when signal phasing is known, it should be assumed that such phasing will continue to be used in the future. There are cases when the analysis indicates that an improved LOS could be achieved by changing the phasing of an existing signal or restriping the approach to an intersection. The approval of the appropriate operating agency must be obtained by the applicant before such a change will be considered in any staff recommendation.

~~In areas served by interchanges, techniques for estimating the capacity of weaving sections, merge and diverge points, and ramps should be utilized. These techniques are found in the Freeway Weaving and Ramps and Ramp Junctions chapters of the HCM. For the weave area, LOS will be measured by weaving speed and non weaving speed and conform to the values shown in current Exhibit 24-2 of the HCM.~~

~~For non-freeways, the potential for site traffic to cause deterioration of the weaving area traffic flow and the methods to quantify such deterioration may need to be considered. Although weaving and non-weaving speeds are independent, it is desirable that these speeds be balanced. The impact of site traffic cannot be permitted to deteriorate this balance. Ramp standards are based on density, the primary measure of effectiveness, and the level of service criteria shown in current Exhibit 25-4 of the HCM. On freeway or expressway mainline sections, when ramp terminals and weaving sections are found to be inadequate, solely due to the mainline traffic flows or basic number of through lanes, required mitigation will be determined based on the impact of the site trips alone.~~

Traffic volumes on the roadway links (segments) in the study area should generally be analyzed when the distance between traffic signals is two miles or greater or when deemed necessary by the Traffic Engineer, often in cases where the effect of grade or lane reductions can create a bottleneck type constraint. In such cases the procedures outlined in the Two and Multi-lane Highways chapters of the HCM, should be utilized. LOS for multilane uninterrupted flow locations will be measured by density and volume to capacity ratio (V/C) and conform to the values shown in ~~current Exhibit 21-2 of~~ the HCM. ~~For two lane roads, adequacy is defined as 80% of one direction capacity (defined on current page 20-3 in the HCM).~~

When multiple signals spaced closely together (usually within ½ mile) and other factors combine in a cumulative effect on congestion, the independent analysis of links and intersections may underestimate the actual levels of congestion. In this case, such as in some sections of the US 40, MD 85 and MD 351 corridors, the analysis procedures outlined in the Urban Streets Chapters of the HCM, may need to be utilized.

When un-signalized intersections are deemed critical by the Traffic Engineer, the procedures recommended in the ~~Un-signalized Intersection~~Stop Controlled chapters of the HCM for analyzing such intersections, ~~should~~ may be employed. ~~LOS will be measured by control delay per current Exhibits 17-2 and 17-22 (LOS Criteria for two way stopped controlled and all-way stopped controlled intersection) of the HCM.~~ When average vehicle delay for a turning movement exceeds the adequa-

cy threshold, additional studies, including queuing analysis, should be conducted to determine potential means to correct the deficiency. The type of study deemed appropriate would be determined by the Traffic Engineer. In some cases, elimination of a movement and diversion of the demand to a nearby location ~~is~~ may be the preferred treatment. A review of the interaction of conflicting movements at adjacent access points may be required. For all critical intersections with State roadways, the CLV analysis should also be performed

If a traffic signal warrant study is deemed appropriate, the warrant study must be conducted in accordance with the requirements of SHA (http://www.marylandroads.com/businesswithsha/bizStdsSpecs/desManualStdPub/publicationsonline/oots/mmutcd/pdfs/sections/4c.pdf). When an intersection is proposed to be signalized in the traffic study, the intersection ~~should~~ must be analyzed under the CLV procedure to ensure that further physical improvements to the intersection beyond the signalization are not needed to achieve adequacy. However, unacceptable delay during a peak hour at a site entrance is not ~~necessarily~~ usually a justification for the installation of a traffic signal. While the installation of a signal may be appropriate at some point, in which case an agreement to fund that signal shall be required, SHA or the County shall determine whether and when to install signals.

Where the site generated volume on a stop-controlled approach would be ~~10~~ 30 vehicles per hour (vph) or less, any LOS problem that may exist is considered to be negligible and an adequacy finding and mitigation ~~are~~ would not normally be required.

The current US version of the aaSIDRA evaluation model shall be used for the analysis of roundabouts.

In circumstances where a TIA identifies a deficiency within the study area, the applicant may choose to recommend an action that would ~~result in adequate operations~~~~physically~~ mitigate the deficiency per the ~~LOS standards~~requirements established in the APFO (Section 1-20-31). Such actions can consist of physical improvements, which add capacity to the transportation system, or programmatic initiatives that would result in trip reduction.

Physical improvements, such as roadway widening, intersection geometric improvements, intersection movement diversions, or signalization improvements attributable to the applicant will be considered, provided responsibility for carrying out such actions is clearly identified. The design and construction of any recommended improvement must receive the concurrence of the appropriate state, county, municipal or other appropriate public agency. The design policies and standards of the agency shall apply to any applicants who propose to construct the improvements under permit to the agency. These standards may include provision of sidewalks, trails, and bike lanes adjacent to the roadway or intersection improvements (including agency defined~~those necessary for~~ ADA compliance) within the agency's right-of-way or easements.

Trip reduction programs should be tied to the staging of the proposed development so that their potential for success can be evaluated. ~~For example, the applicant may suggest that the traffic impact of a proposed 500,000 square foot office development can be reduced by 20 percent by implementing a carpooling program. A simple staging plan might involve approval of 250,000 square feet with the implementation of the carpool program. The program would then be monitored to determine if the proposed 20% reduction in vehicular traffic has occurred. Only when the goal of 20% trip reduction is met, or a FCPC approved revised TIA assuming different TDM goals re-demonstrates adequacy, would approval for the construction of the remainder of the development be granted. The staging program should be developed so that no more development is included in the first stage than can be accommodated by the existing and programmed transportation system. If the trip reduction programs accomplish more than anticipated, provisions for accelerating future phases of development may be considered.~~ Provision should be made for a trip monitoring techniques that can be validated by the Traffic Engineer. The program may include typical elements such as: employee transit incentives, parking management, car sharing and car pooling programs. The elements of the plan, trip reduction goals and monitoring periods would be determined through consultation between the developer, his traffic engineer and the County Traffic Engineer.

Along all County collector and arterial roadways, entrance and intersection sight distance (ISD) ~~requirements shall~~ should meet American Association of State Highway and Transportation Officials (AASHTO) standards as outlined in Chapter 9 of the "Green Book" for new public streets and other new access points that generate more than five trips per hour. All new entrances, regardless of facility type and number of trips being generated, shall meet the AASHTO "Green Book" Chapter 3 requirements for stopping sight distance (SSD).**.

~~When required, t~~The analysis may need to~~shall~~ identify and evaluate off-site~~related impacts on~~ bicycle, pedestrian, and transit access, ~~circulation,~~ and ~~facilities~~roadway safety needs, as well as on-site circulation and operational needs. ~~APFO required improvements would be necessary if the LOS standards (see Appendix C for bike and pedestrian uses) are not attained and these facilities shall be assessed and noted in the analysis.~~

For Phase I analysis and in all other cases when there are no existing escrow accounts, limited file information, and no signalized intersections, the County's travel demand model output and the LOS ADT lookup chart found in Appendix C could be used to make the requisite APFO findings and considerations. Other than for Phase I considerations, this "short form" would only be used at the discretion of the Traffic Engineer and if there is a clear finding of adequacy with no conditions of improvements.

~~When required by the Traffic Engineer, the Road Rating System (RRS) in Appendix B is to be applied to identify geometric deficiencies and optimize solution alternatives that may be conditioned by the PC to achieve a passing score and resulting adequacy finding.~~

For land uses limited to special events which will generate relatively large amounts of traffic, usually during non-traditional, non-weekday, peak periods for limited durations throughout the year, adequacy ~~shall~~ should be determined by review of a traffic management plan (TMP), in addition to other applicable analysis techniques discussed in the scoping meeting. The Traffic Engineer ~~shall~~ should consider the projected number of vehicle trips for each such special event compared to the safety and operational capabilities of the feeder roads to accommodate that traffic ~~(the RRS may be employed in this determination)~~; the classification and character of the roads which will be utilized for access and egress to and from the event as it relates to the change in use of the roadways or intersections that the events may temporarily cause; and the number of days per year and hours per day the event will impact the local users of the road.

The Traffic Management Plan (TMP) shall contain at least the following elements:

1. Routes through which the bulk of the traffic will be directed or otherwise find its way from the nearest major arterials to the project site, and the manner in which such traffic will be directed. On and off site traffic direction (point control) by law enforcement or other qualified personnel, shall be delineated if required by the traffic engineer.
2. Temporary traffic control solutions for infrequent special events (in the event the site will have regular permanent uses, permanent improvements must be provided) such as spot intersection widening, signing, traffic control devices (e.g. temporary and adjusted signals) and ITS.
3. Operational analysis containing, but not limited to: projected queuing, intersection and corridor speeds and delay, and safety analysis.
4. A procedure for the event organizer to notify appropriate parties of the event in a specified timeframe prior to implementation of a special event or series of special events.
5. Provisions for emergency vehicle access to the site from arterial and higher classified roadways.

The plan must be provided to the DPDR for distribution to the Sherriff's office, DPW and other roadway agencies, such as SHA, for comment and be approved by the Planning Commission in conjunction with site plan approval. The special event TMP will be subject to review by the agencies annually or as otherwise determined by the Traffic Engineer.

CHAPTER 11

Mitigation Plans

Mitigation measures will be required when LOS results do not meet the APFO standards. The TIA should identify optimal methods of mitigating off-site deficiencies for present and proposed phases of the development. It should not necessarily limit the mitigation focus to the specific location identified where an unacceptable deterioration of the LOS standards has been identified. In some cases it may be preferable to direct site-generated traffic to other roadways. In other cases, improvements made apart from the identified deficient location may divert enough background traffic to create enough reserve capacity for the site generated traffic and thus mitigate the impacts. Build out year and development phasing may be considered in the mitigation section of the report.

Mitigation ~~must~~ should be consistent with improvements identified in the transportation element of the master plan and CP. At a minimum, the TIA should consider ultimate rights-of-way and additional streets, bicycle, transit, and pedestrian connections and extensions and intersection improvements that are identified in the CP. Mitigation measures may also include, but are not limited to, alternative or additional street connections and street extensions, turn lanes and turn lane extensions, intersection turning movement elimination, signalization, signal modifications, installation of medians, shared access and other access management strategies, geometric improvements such as lane geometry improvements, and intersection realignments, structure widening, frontage roads, local or collector roads, and alternative access.

Off-site bicycle and pedestrian facilities may be required when there is a reasonable attraction between the development and a nearby attraction, such as between a residential development and a school or train station~~,~~. W~~w~~hen deemed necessary and reasonably implementable, the improvement should ~~shall~~ not exceed a distance of 0.~~6~~ 5 mile for sidewalks and 1~~.2~~ miles ~~for~~ bicycle and trail facilities. ~~These distances may be extended for pedestrian facilities if the Frederick County Public Schools (FCPS) Walk Area Policy justifies an extension to provide adequate service to an existing or programmed school.~~ A fee-in-lieu of construction may be permitted by the Planning commission if costs are deemed excessive either from a cost per dwelling unit basis or a larger than normal cost element, such as a bridge, is required to accomplish the project; or if right-of-way cannot be acquired.

Where stop-controlled intersections do not meet the minimum performance standard, an additional street connection or a street extension to distribute traffic from the site to another access point, preferably on a different road, should be considered as a potential mitigation measure, especially when installation of a signal can be avoided.

Mitigation measures must be evaluated with regard to their operational, safety and effectiveness before being recommended. A measure that provides ~~adequate~~ additional capacity but creates an operational or potential safety problem is not acceptable. Mitigation measures that involve changes in the number or usage of lanes at an intersection or the phasing at a signalized intersection will require conceptual approval from SHA or Frederick County Division of Public Works (DPW).

The mitigation section of the TIS may include a travel demand management plan in accordance with these Guidelines. The trip reduction anticipated in an approved travel demand management plan ~~shall be deemed to~~should reduce the site trips, thereby also reducing site traffic impacts and associated financial obligations~~. Remedies must be provided in the event of non-performance, in the form of reduced site density, surety for avoided road improvements or other mutually agreed upon solutions, should the TDM plan be unsuccessful.~~ All monitoring would be the responsibility of the developer with review and approval by the Traffic Engineer~~; all revised plans shall require Planning Commission approval~~.

Any construction, whether it be performed by the applicant, another developer or a road club, must be permitted for construction prior to the

issuance of specified building permits (for site plans) or recordation of specified plats (for subdivisions) for the subject development. Construction ~~shall~~ needs to proceed on a timetable so as to assure that the improvement will be open to traffic prior to the issuance of any ~~use and occupancy permits.~~ Certificates of Occupancy (COO), which may be withheld until the improvement is open to traffic.

The Transportation Facilities Mitigation Plan (TFMP) is a conceptual set of improvements jointly identified by the applicant and Traffic Engineer to delineate the conditionally approved improvements by the FCPC. Every reasonable effort must be made to minimize a piecemeal approach to mitigation and one that is not consistent with County and State long range plans. The TFMP defines what needs to be done and when it needs to be accomplished but is generally silent on how it is to be built and by whom (except when a road club or fee in lieu of construction is proposed). The TFMP would be circulated for review and comment to SHA and DPW for acceptance, and to a municipality or city if the improvements are contained in or within one mile of that municipality/city. These concepts must be approved by the implementing agencies prior to development of Improvement Plans. All conditioned improvements shall be noted on final plats and site plans.

In the case of improvements of Interstate interchange ramp intersections with cross streets, ~~improvements~~, Interstate Access Point Approval (IAPA) or lesser reviews may be necessary, and if so required, needs to commence at least a year prior to submission of a County Improvement Plan (IP) or SHA permit plans so as to minimize any delays that may be forthcoming associated with added State and Federal reviews and approvals.

~~CHAPTER 12~~
~~**Special Mitigation Plans**~~

~~The APFO requires that any public roadway facilities that are found to be inadequate, concurrent with the development of a site, shall be mitigated or improved in one of the following manners:~~

- ~~*A.* Construction concurrent with the development build-out, fully achieving the adequacy threshold~~
- ~~*B.* Construction concurrent with the development build-out, just mitigating the traffic impact of the development~~
- ~~*C.* Contribution of a fair share pro rata payment toward future construction by others.~~

~~Condition A is the default situation covered in Chapter 11 with conditions B and C requiring certain parameters to be met in order to qualify. This chapter will discuss the parameters for permitting condition B and Chapter 13, Condition C.~~

~~The APFO authorizes the Planning Commission to consider traffic mitigation procedures, identified in the TFMP, to allow development to proceed conditionally, under certain circumstances, experiencing unacceptable transportation service levels. However, the development could occur only if transportation improvements are constructed and would result in an improvement in traffic operations beyond what would have been expected if the development had not occurred (i.e., the site trips alone are fully mitigated). This special mitigation plan is a process by which developments are allowed to provide roadway improvements (or funding for transit improvements) that would improve traffic operations over existing conditions but not fully mitigate background traffic from pipeline development. Under this special mitigation, the Planning Commission may consider the use of special mitigation procedures under circumstances found in APFO Sec. 1-20-31(H).~~

CHAPTER ~~13~~12

Escrow Accounts for Pro-Rata Contributions and Surplus Capacity Reimbursement

Road improvement escrow accounts are established every time a developer qualifies to provide a fair share pro-rata contribution toward a future improvement or construct an improvement. Once established, the escrow account shall remain open and active until the necessary funds are fully contributed to either fund the improvement or reimburse the party responsible for its construction.

The APFO permits the Planning Commission to allow an applicant to pay a fair share pro-rata cost, determined by the Traffic Engineer, of the improvements necessary to alleviate any inadequacy per APFO Sec. 1-20-12(C). These payments may not be phased and shall be made prior to the initial building permit issuance (for site plans) or first recorded plat (for subdivision). Any improvement would need to be consistent with the approved master plan or other County or State plans, and acceptable to the implementing agency. ~~Should, over time, circumstances dictate different improvements than were initially scoped; the contributions may be utilized as needed by the County such that the original improvement intent of the contribution is still generally maintained. If after 10 years from the date of contribution there is no likelihood of implementing the scoped or similar improvement, the escrow account may be closed and monies transferred to another account, preferably within the planning area, at the discretion of the Planning Commission for the purpose of stimulating other construction.~~

The calculation of the pro-rata share contribution, whether it is for future or previously built improvements, is based on the proportion of the development's impact to the capacity created by the improvement. For instance, if a site adds 10 CLV's to an intersection's LOS and the identified improvement required to achieve adequacy improves the intersection by 200 CLV's, the pro-rata share of the improvement cost would be 5% or 0.05 times the cost in total fee. Where capacity cannot be easily defined, such as with a signal improvement, the pro-rata share is a proportion of the developer's impact to the impact from future development at CLV=1450. As in the case of the previous example, the share would be 10 CLV's divided by the difference between 1450 and existing CLV's. In the case where the existing CLV exceeds 1450, 1600 would be used as the number from which the existing CLV's are subtracted.

The development of a cost estimate on which to apply the pro-rata share contribution is necessary in order to determine the actual cash payment required. This is performed by the engineer for the applicant first requiring the establishment of the escrow account. The estimate must be performed using the best available information and generate quantities necessary to provide a reasonable level of accuracy and shall include all anticipated hard and soft costs associated with the improvement. The more the detail, the lower the contingency factor, and the less the detail the higher the contingency factor that would be added to the neat cost estimate. In general, SHA project planning stage I cost per mile estimates would be acceptable for links and stage II quantity costs would be acceptable for intersections. The engineering cost associated with the development of the estimate may be credited to the first developer's pro-rata share payment.

The cost basis of the improvement, whether actual or estimated, ~~shall~~ will be inflated annually by the Traffic Engineer based on an appropriate published construction cost index

The APFO allows for a developer or government agency that creates surplus capacity on the roadway network to be partially or fully reimbursed by other developers under certain circumstances. This section of the Guidelines establishes the criteria that County staff would use to identify potential Surplus Capacity Reimbursement (SCR) improvements.

The ~~following~~ sole criteria ~~shall be~~ is used to determine whether a transportation improvement that is a condition of APFO approval for a development should also be considered by the Planning Commission as an SCR improvement is that:~~T~~the transportation improvement is needed to find adequate public facilities and

does not include any access-related or frontage-related improvements required by SHA or, the County~~;~~.

~~1. The total estimated cost to complete the transportation improvement is greater than $100,000, as determined at the time of APFO approval;~~

~~2. The improvement, once completed and in place, must create "appreciable surplus capacity" beyond that required by the applicant to satisfy a finding of adequate public facilities. This substantial surplus capacity can be used by future developers to make a finding of adequate public facilities for their subdivisions. For the purpose of this procedure, surplus capacity under total traffic with the transportation improvement shall be considered "appreciable" if the constructing developer's pro-rata share, as determined in accordance with procedures herein, is equal to or less than 60% of the capacity created.~~

~~3. The improvement is developer or government funded and is not part of a County Community Development Authority (CDA) improvement agreement, unless the agreement language explicitly permits SCR and identifies the appropriate beneficiary of the reimbursement.~~

If a transportation improvement meets ~~all of~~ the above criteria, the applicant ~~shall~~ would normally provide the following information and data for review by the Traffic Engineer for the possible establishment of an SCR:

1. Engineering and construction plans for the transportation improvement sufficient to provide detailed cost estimates for completion, including right-of-way acquisition, utility relocation, design, inspection and construction management costs.
2. An executed agreement or permit with the County DPW, SHA or municipality, certifying total estimated cost.

Once an SCR improvement is established (or any escrow account), all future non-exempt developments generating more than 5 trips ~~will~~ would normally be required to pay their fair share toward the improvement, whether the account be inside or outside the project's study area. Reimbursement to developers for constructed road improvements, up to but not beyond their identified financial responsibility would first be via existing escrow funds, second excise tax credits (once permitted by ordinance), and finally future escrow account contributions. Any tax credits used to compensate the developer for the excess capacity created, would be repaid by future escrow account.

Once the Traffic Engineer determines that the surplus capacity associated with an SCR improvement has been fully utilized, the escrow account shall be closed. A fully utilized account is one that is equal to the total actual (not inflated) approved cost, minus the constructing developer's pro-rata fair share contribution to the improvement. Additional participation in an SCR improvement by subsequent parties will not be allowed. Instead, a finding of adequate public facilities will be required for these future development proposals, and roadway improvements above and beyond the SCR improvement may be made a condition of that finding.

Escrow accounts may be established for mitigation associated with justified ~~the failure to achieve the requisite Road Rating System (see Appendix B) score of 70~~safety, geometric, pedestrian and bike enhancements, but only if the cost of such improvements are deemed excessive by the planning commission~~, if the site assigns 50 or less peak hour trips and the score falls between 55 and 69. Fair share contributions for the defined improvements necessary to achieve a score of 70 shall be based on site assigned trips divided by existing trips on the road~~.

APPENDIX A

Frederick County Trip Generation Rates
[to be developed by the County traffic engineering consultants under direction of the Traffic Engineer]

Active Adult Single Family Detached

Active Adult Single Family Attached

Senior Housing

Other

APPENDIX B

~~Road Rating System~~

~~Introduction~~

~~This appendix is a user's manual for the road rating system (RRS). As different types of roadways perform different functions, it is important to evaluate them according to various criteria by road classification. Scores are assessed by calculation, weighted and summed up for each identified roadway deemed to be critical for a development. Road segments receiving a score of 70 or greater considered adequate for this analysis tool, but those not achieving the requisite score must identify improvement(s) necessary to bring the score up to an adequate level.~~

~~Roadways are generally divided into segments as follows:~~

- ~~By intersecting roads controlled by TCD's~~
- ~~By permanent changes in typical sections or character~~
- ~~By logical breakpoints not to exceed one mile~~

~~Because much judgment may be applied on the part of the consulting engineer, the County Traffic Engineer opinion will be sought when considered necessary. Both sides of the roadway need to be evaluated and worst case conditions should govern. When sections vary by side, such as an open section on one side and closed on the other, the segments should be evaluated independently with the lower rating governing. No compromise grades are considered – they must be selected based on one whole number score or the other.~~

~~This system is similar to and modified from the RRS currently employed in Anne Arundel County and presented by Tim Ryan et. al. as a technical paper at the 64th annual meeting of the Institute of Transportation Engineers annual convention in Dallas Texas in 1994.~~

~~Elements of the Road Rating System (One point if attribute is below minimum values)~~

~~Minimum Lane Width (feet)~~

~~Rating Points~~	~~Maj. Art.~~	~~Min. Art.~~	~~Collector~~	~~Local~~	~~Rural Local~~
~~12~~	~~–~~	~~–~~	~~12~~	~~12~~	~~11~~
~~10~~	~~12~~	~~12~~	~~11~~	~~11~~	~~10~~
~~8~~	~~11~~	~~11~~	~~10~~	~~10~~	~~9~~
~~6~~	~~10~~	~~10~~	~~9~~	~~9~~	~~8~~
4	~~9~~	~~9~~	~~8~~	~~8~~	~~–~~

~~Minimum Outside Paved Shoulder Width (feet)~~

~~Rating Points~~	~~Maj. Art.~~	~~Min. Art.~~	~~Collector~~	~~Local~~	~~Rural Local~~
~~12~~	~~12~~	~~12~~	~~10~~	~~8~~	~~6~~
~~10~~	~~10~~	~~10~~	~~8~~	~~6~~	~~4~~
~~8~~	~~8~~	~~8~~	~~6~~	~~4~~	~~2~~
~~6~~	~~6~~	~~6~~	~~4~~	~~2~~	~~0~~
4	~~4~~	~~4~~	~~2~~	~~0~~	~~–~~

~~Minimum Stopping and Headlight Sight Distance (feet)~~

~~Rating Points~~	~~Maj. Art.~~	~~Min. Art.~~	~~Collector~~	~~Local~~	~~Rural Local~~
~~12~~	~~800~~	~~700~~	~~600~~	~~500~~	~~400~~
~~10~~	~~700~~	~~600~~	~~500~~	~~400~~	~~300~~
~~8~~	~~600~~	~~500~~	~~400~~	~~300~~	~~250~~
~~6~~	~~500~~	~~400~~	~~300~~	~~250~~	~~200~~
~~4~~	~~400~~	~~300~~	~~250~~	~~200~~	~~150~~

~~Roadside Friction~~

~~OPEN SECTIONS~~

~~Rating Points~~	~~Measurement~~	~~Description~~
~~11~~	~~Very Good~~	~~>8' clear zone; guardrail and standard median if warranted~~
~~9~~	~~Good~~	~~>6' clear zone; guardrail & min. med./center turn lane if warranted~~
~~7~~	~~Fair~~	~~>4' clear zone; some guardrail; undivided~~
~~4~~	~~Poor~~	~~>2' clear zone; some guardrail; undivided~~
~~1~~	~~Very Poor~~	~~<2' clear zone; no guardrail; undivided~~

~~CLOSED SECTIONS~~

~~Rating Points~~	~~Measurement~~	~~Description~~
~~11~~	~~Very Good~~	~~>6' clear zone; guardrail & standard median if warranted~~
~~9~~	~~Good~~	~~>4' clear zone; guardrail & min. med./center turn lane if warranted~~
~~7~~	~~Fair~~	~~>2' clear zone; some guardrail; undivided~~
~~4~~	~~Poor~~	~~>1' clear zone; some guardrail; undivided~~
~~1~~	~~Very Poor~~	~~<1' clear zone; no guardrail; undivided~~

~~Clear Zone = Area beyond shoulder or curb where no obstructions or drop-offs occur and slope does not exceed 4:1~~

~~Sidewalks~~

~~Rating Points~~	~~Measurement~~	~~Description~~
~~11~~	~~Very Good~~	~~Width 5' or more; ADA std.; 5' or more offset from street~~
~~9~~	~~Good~~	~~Width >4'; ADA; some obstructions/minor cracks; >2' offset to street~~
~~7~~	~~Fair~~	~~Width >4'; frequent obstructions; cracking~~
~~4~~	~~Poor~~	~~Width 4' or less; frequent obstructions; poorly maintained~~
~~1~~	~~Very Poor~~	~~Width <4'; frequently obstructed; portions unpaved~~

~~Note: Minimum point value along open section = 7~~

~~Bike Lanes~~

~~Rating Points~~	~~Measurement~~	~~Description~~
~~11~~	~~Very Good~~	~~5' bike lane or shoulder provided~~
~~9~~	~~Good~~	~~4' bike lane or shoulder provided~~
~~7~~	~~Fair~~	~~4' or greater bike lane or shoulder, discontinuous at intersections~~
~~4~~	~~Poor~~	~~<4' bike lane or shoulder~~
~~1~~	~~Very Poor~~	~~Bikes travel in vehicle lane~~

~~Access Frequency (feet/mile)~~

~~Rating Points~~	~~Maj. Art.~~	~~Min. Art.~~	~~Collector~~	~~Local~~	~~Rural Local~~
~~11~~	~~200~~	~~245~~	~~290~~	~~365~~	~~330~~
~~9~~	~~245~~	~~290~~	~~330~~	~~400~~	~~365~~
~~7~~	~~425~~	~~495~~	~~565~~	~~700~~	~~630~~
~~4~~	~~600~~	~~700~~	~~800~~	~~1000~~	~~900~~
~~1~~	~~1500~~	~~1700~~	~~1900~~	~~2300~~	~~2100~~

~~Safety Rating~~

~~Rating Points~~	~~Measurement~~	~~Description~~
~~11~~	~~Very Good~~	~~No recorded crashes in previous 3 recorded years~~
~~9~~	~~Good~~	~~Less than 0.5 crashes per 100 MVM of travel~~
~~7~~	~~Fair~~	~~Less than 1.0 crashes per 100 MVM of travel~~
~~4~~	~~Poor~~	~~Candidate Safety Improvement (CSI) Section~~
~~1~~	~~Very Poor~~	~~CSI Section with fatal crash in previous 3 years~~

~~Note: Subtract one point for every reported bicycle crash over previous 3 years. Crashes clearly associated with human factors may be excluded by the Traffic Engineer.~~

~~Weightings~~

~~The weightings to be used for each element for each roadway classification are shown below~~

~~WEIGHTINGS~~

~~Open Section~~	~~Maj. Art.~~	~~Min. Art.~~	~~Collector~~	~~Local~~	~~Rural Local~~
~~Min Lane Width~~	~~1.3~~	~~1.2~~	~~1.2~~	~~1.2~~	~~1.2~~
~~Outside Shoulder Width~~	~~1.3~~	~~1.2~~	~~1.2~~	~~1.2~~	~~1.1~~
~~SSD/HSD~~	~~1.7~~	~~1.8~~	~~1.9~~	~~2.1~~	~~2.3~~
~~Roadside Friction~~	~~1.5~~	~~1.3~~	~~1.2~~	~~1.2~~	~~1.3~~
~~Sidewalks~~	~~0.7~~	~~1.0~~	~~1.5~~	~~1.5~~	~~1.3~~
~~Bike Lanes~~	~~0.9~~	~~1.1~~	~~0.8~~	~~0.7~~	~~0.7~~
~~Access Frequency~~	~~1.1~~	~~1.0~~	~~0.9~~	~~0.8~~	~~0.8~~
~~Safety~~	~~1.5~~	~~1.4~~	~~1.3~~	~~1.3~~	~~1.3~~

~~Closed Section~~	~~Maj. Art.~~	~~Min. Art.~~	~~Collector~~	~~Local~~	~~Rural Local~~
~~Min Lane Width~~	~~1.6~~	~~1.6~~	~~1.5~~	~~1.5~~	~~N/A~~
~~Outside Shoulder Width~~	~~0~~	~~0~~	~~0~~	~~0~~	~~N/A~~
~~SSD/HSD~~	~~1.6~~	~~1.7~~	~~1.9~~	~~2.2~~	~~N/A~~
~~Roadside Friction~~	~~1.5~~	~~1.3~~	~~1.3~~	~~1.1~~	~~N/A~~
~~Sidewalks~~	~~1.4~~	~~1.5~~	~~1.7~~	~~2.1~~	~~N/A~~
~~Bike Lanes~~	~~1.1~~	~~1.4~~	~~1.1~~	~~0.9~~	~~N/A~~
~~Access Frequency~~	~~1.2~~	~~1.0~~	~~1.1~~	~~0.8~~	~~N/A~~
~~Safety~~	~~1.6~~	~~1.5~~	~~1.4~~	~~1.4~~	~~N/A~~

~~FREDERICK COUNTY ROAD RATING SYSTEM~~

~~FIELD WORKSHEET~~

~~Road Name:~~
~~Segment Limits:~~
~~Survey Date:~~
~~Technician:~~

~~Attribute~~	~~Quantity~~
~~Segment Length (miles)~~	
~~Roadway Classification~~	
~~Section Type (open/closed)~~	
~~Median Type/Center Turn Lane?~~	
~~Minimum Lane Width (feet)~~	
~~Min. Outside Shoulder Width (feet)~~	
~~Minimum Sight Distance (feet)~~	
~~Roadside Friction~~	
~~Sidewalks~~	
~~Bike Lanes~~	
~~Access Frequency (opening ft./mile)~~	
~~Safety Rating~~	

~~FREDERICK COUNTY ROAD RATING WORKSHEET~~

~~Road Name:~~ ~~Segment Length:~~
~~Segment Limits – From:~~ ~~Section Type (open/closed):~~
~~To:~~ ~~Roadway Classification:~~
~~Today's Date:~~ ~~Median/Center Turn Lane?~~
~~Technician's Name:~~

~~Element Name~~	~~Data Input~~	~~Rating Point~~	~~x Weight~~	~~=~~	~~Score~~
~~Minimum Lane Width (feet)~~					
~~Min. Outside Shoulder Width (feet)~~					
~~Minimum Sight Distance (feet)~~					
~~Roadside Friction~~					
~~Sidewalks~~					
~~Bike Lanes~~					
~~Access Frequency (opening ft./mile)~~					
~~Safety Rating~~					

~~ROAD RATING TOTAL =~~

TABLE 4 - 1

GENERALIZED **ANNUAL AVERAGE DAILY** VOLUMES FOR FLORIDA'S **URBANIZED AREAS***

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	2,000	7,000	13,600	19,600	27,000
4	Divided	20,400	33,000	47,800	61,800	70,200
6	Divided	30,500	49,500	71,600	92,700	105,400

STATE TWO-WAY ARTERIALS

Class I (>0.00 to 1.99 signalized intersections per mile)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	4,200	13,800	16,400	16,900
4	Divided	4,800	29,300	34,700	35,700	***
6	Divided	7,300	44,700	52,100	53,500	***
8	Divided	9,400	58,000	66,100	67,800	***

Class II (2.00 to 4.50 signalized intersections per mile)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	1,900	11,200	15,400	16,300
4	Divided	**	4,100	26,000	32,700	34,500
6	Divided	**	6,500	40,300	49,200	51,800
8	Divided	**	8,500	53,300	63,800	67,000

Class III (more than 4.5 signalized intersections per mile and not within primary city central business district of an urbanized area over 750,000)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	**	5,300	12,600	15,500
4	Divided	**	**	12,400	28,900	32,800
6	Divided	**	**	19,500	44,700	49,300
8	Divided	**	**	25,800	58,700	63,800

Class IV (more than 4.5 signalized intersections per mile and within primary city central business district of an urbanized area over 750,000)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	**	5,200	13,700	15,000
4	Divided	**	**	12,300	30,300	31,700
6	Divided	**	**	19,100	45,800	47,600
8	Divided	**	**	25,900	59,900	62,200

NON-STATE ROADWAYS

Major City/County Roadways

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	**	9,100	14,600	15,600
4	Divided	**	**	21,400	31,100	32,900
6	Divided	**	**	33,400	46,800	49,300

Other Signalized Roadways
(signalized intersection analysis)

Lanes	Divided	Level of Service A	B	C	D	E
2	Undivided	**	**	4,800	10,000	12,600
4	Divided	**	**	11,100	21,700	25,200

Source: Florida Department of Transportation 02/22/02
Systems Planning Office
605 Suwannee Street, MS 19
Tallahassee, FL 32399-0450
http://www11.myflorida.com/planning/systems/smvlos/default.htm

FREEWAYS

Interchange spacing ≥ 2 mi. apart

Lanes	Level of Service A	B	C	D	E
4	23,800	39,600	55,200	67,100	74,600
6	36,900	61,100	85,300	103,600	115,300
8	49,900	82,700	115,300	140,200	156,000
10	63,000	104,200	145,500	176,900	196,400
12	75,900	125,800	175,500	213,500	237,100

Interchange spacing < 2 mi. apart

Lanes	Level of Service A	B	C	D	E
4	22,000	36,000	52,000	67,200	76,500
6	34,800	56,500	81,700	105,800	120,200
8	47,500	77,000	111,400	144,300	163,900
10	60,200	97,500	141,200	182,600	207,600
12	72,900	118,100	170,900	221,100	251,200

BICYCLE MODE

(Note: Level of service for the bicycle mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not number of bicyclists using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/ Bicycle Lane Coverage	Level of Service A	B	C	D	E
0-49%	**	**	3,200	13,800	>13,800
50-84%	**	2,500	4,100	>4,100	***
85-100%	3,100	7,200	>7,200	***	***

PEDESTRIAN MODE

(Note: Level of service for the pedestrian mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not number of pedestrians using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	Level of Service A	B	C	D	E
0-49%	**	**	**	6,400	15,500
50-84%	**	**	**	9,900	19,000
85-100%	**	2,200	11,300	>11,300	***

BUS MODE (Scheduled Fixed Route)

(Buses per hour)

(Note: Buses per hour shown are only for the peak hour in the single direction of the highest traffic flow.)

Sidewalk Coverage	Level of Service A	B	C	D	E
0-84%	**	>5	≥4	≥3	≥2
85-100%	>6	>4	≥3	≥2	≥1

ARTERIAL/NON-STATE ROADWAY ADJUSTMENTS

DIVIDED/UNDIVIDED

(alter corresponding volume by the indicated percent)

Lanes	Median	Left Turns Lanes	Adjustment Factors
2	Divided	Yes	+5%
2	Undivided	No	-20%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

ONE-WAY FACILITIES

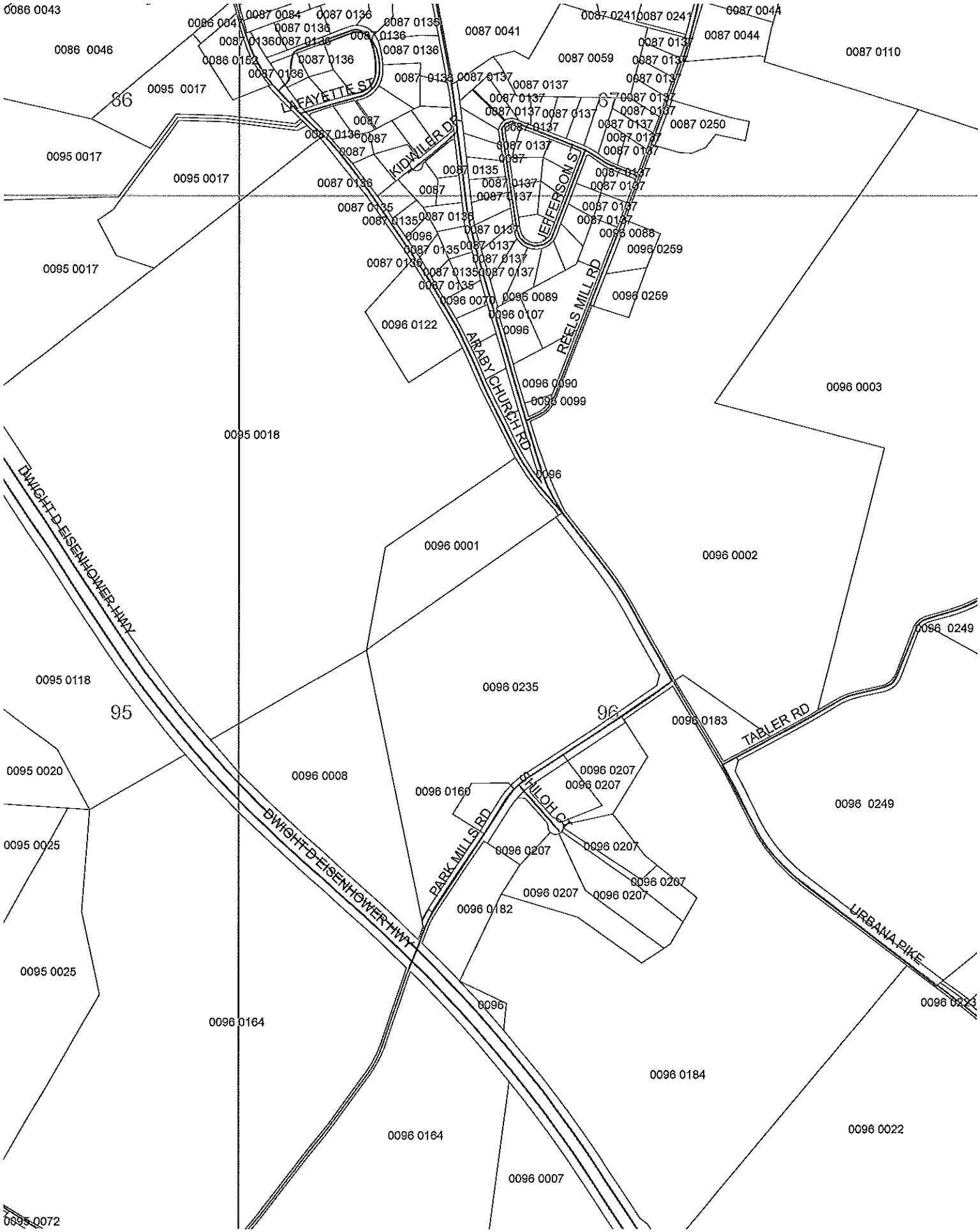
Decrease corresponding two-directional volumes in this table by 40% to obtain the equivalent one directional volume for one-way facilities.

*This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and detailed computer models should not be used for corridor or intersection design, where more refined techniques exist. Values shown are two-way annual average daily volumes (based on K_{100} factors) for levels of service and are for the automobile/truck modes unless specifically stated. Level of service letter grade thresholds are probably not comparable across modes and, therefore, cross-modal comparisons should be made with caution. Furthermore, combining levels of service of different modes into one overall roadway level of service is not recommended. The table's input value defaults and level of service criteria appear on the following page. Calculations are based on planning applications of the Highway Capacity Manual, Bicycle LOS Model, Pedestrian LOS Model and Transit Capacity and Quality of Service Manual, respectively for the automobile/truck, bicycle, pedestrian and bus modes.

**Cannot be achieved using table input value defaults.

***Not applicable for that level of service letter grade. For automobile/truck modes, volumes greater than level of service D become F because intersection capacities have been reached. For bicycle and pedestrian modes, the level of service letter grade (including F) is not achievable, because there is no maximum vehicle volume threshold using table input value defaults.

85


LAFAYETTE ST
KIDWILLER DR
JEFFERSON ST
REELS MILL RD
ARABY CHURCH RD
DWIGHT D EISENHOWER HWY
TABLER RD
PARK MILLS RD
SHILOH CT
URBANA PIKE
86
87
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0086 0043
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