Updated
Administrative Guidelines for the Traffic Impact Analysis Regulations

24VAC30-155

July 2014

Land Development Section
Transportation and Mobility Planning Division
Virginia Department of Transportation
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Preface

Text highlighted in **blue** identifies **hyperlinks** that allow the reader to:

- "Jump" to the **place in the document** where the highlighted item is located.
- Go to **Internet websites** where additional information on the topic can be found.

A summary of December 31, 2011 changes to the regulations due to 2011 General Assembly legislation is presented in the APPENDIX on page 79. Note: These 2011 changes are referenced throughout the document by highlighting key text in **bold** and the changes to the Regulations are identified by the use of *italics*.

Also, § 15.2-2223 B. 3 - 6 requires localities to add more details to their Transportation Plan and Transportation Map, and requires the documents to be consistent with VTrans, the Six-Year Improvement Program, and specific route locations chosen by the Commonwealth Transportation Board (CTB).

VDOT is directed to review locality transportation plans and comment on their consistency during the plan development or amendment process and, upon the local adoption of such plans or amendments, VDOT is to notify the CTB of inconsistencies. See the Comprehensive Plan Chapter starting on page 7 and Local/State Plan and Program Consistency on the VDOT web site.

The July 2014 edition contains updated information on the VDOT's (Northern Virginia District) responsibility to review comprehensive plans and plan amendments submitted by Northern Virginia localities to determine the extent to which the plan or amendment will increase traffic congestion or reduce the mobility of citizens in the event of a homeland security emergency. The 2014 General Assembly expanded this responsibility to also require an assessment of the measures and an estimate of the costs to mitigate the congestion or reduction in mobility. The findings are to be included in the District's comments to the locality on the submitted plan or amendment. See page 11 for more detail.

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***** These forms and checklists are available on the VDOT Traffic Impact Analysis Regulations website in a MS Word editable format so answers can be typed on them.

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BACKGROUND ON THE REGULATIONS

Roads are a critical public resource and constitute a major investment of the public's money. Traffic impacts caused by new development – a reduction in the traffic carrying capacity of the highways, more crashes and traffic congestion – can be very costly for state government and local governments, as well as the broader community.

As a result, over the years VDOT has become more and more involved in the local land development process assisting communities at their request in the review of the transportation portion of comprehensive plans, rezoning requests, site plans and subdivision plats.

In 2006, the General Assembly approved legislation (Chapter 527 of the 2006 Acts of Assembly) to enhance the coordination of land use and transportation planning. §15.2-2222.1 was added to state law to expand VDOT's role in the land planning and development review process. It authorized VDOT to promulgate regulations to administer this program responsibility.

The Traffic Impact Analysis Regulations, 24 VAC 30-155, that were adopted:

- Specify the procedures for the locality's submittal of the above documents to VDOT and for VDOT's submittal of traffic impact related findings and recommendations to the locality for inclusion in their official public record.
- Define what constitutes "substantially affect" transportation on state highways.
- Establish deadlines for VDOT's review responsibilities.
- Set out a schedule of fees for VDOT's review based on submission type and traffic.

The legislation does not affect local government authority to adopt plans and make decisions on proposed land uses. Instead, §15.2-2222.1 of the Code provides VDOT with the authority to analyze and provide comments to local governments on comprehensive plans and rezoning proposals that may have a significant impact on state-controlled highways.

The results from this analysis can then be used by localities in their planning and land use decision making process. VDOT's findings are advisory in nature.

The Administrative Guidelines for the Traffic Impact Analysis Regulations, therefore, has been prepared to provide guidance to VDOT personnel, local government staff, land developers, and transportation consultants on the details of §15.2-2222.1 of the Code and the Traffic Impact Analysis Regulations for VDOT's review of:

- Comprehensive plans and comprehensive plan amendments,
- Traffic impact studies for certain rezoning applications.

A chapter has been prepared on each of the above topics as well as on VDOT's administrative responsibilities and review fees. The regulations that apply to the chapter topic are presented at the end of each chapter.

Finally, it is important to note that:

- VDOT will continue to assist localities, at their request, to help evaluate any rezoning, site plan, or subdivision plat application that may not be required to be submitted under the requirements of §15.2-2222.1 of the Code, and
- The Traffic Impact Analysis Regulations do not affect VDOT's entrance permit authority established in the Land Use Permit Regulations 24VAC30-151 and the Access Management Regulations 24VAC30-72 and -73 – available at "Transportation and Land Use" on the VDOT web site.

REGULATIONS

24VAC30-155-20. Authority.

Section 15.2-2222.1 of the Code of Virginia requires localities to submit comprehensive plans and amendments to comprehensive plans that will substantially affect transportation on state-controlled highways to VDOT in order for the agency to review and provide comments on the impact of the item submitted. This section also requires localities to submit traffic impact statements along with proposed rezonings that will substantially affect transportation on state-controlled highways to VDOT for comment by the agency. Chapter 527 of the 2006 Acts of Assembly directs VDOT to promulgate regulations for the implementation of these requirements.

§ 15.2-2222.1. of the Code of Virginia
Coordination of state and local transportation planning

A. *1.* Prior to adoption of any comprehensive plan pursuant to § 15.2-2223, any part of a comprehensive plan pursuant to § 15.2-2228, or any amendment to any comprehensive plan as described in § 15.2-2229, the locality shall submit such plan or amendment to the Department of Transportation for review and comment if the plan or amendment will substantially affect transportation on state-controlled highways as defined by regulations promulgated by the Department. The Department's comments on the proposed plan or amendment shall relate to plans and capacities for construction of transportation facilities affected by the proposal.

2. If the submitting locality is located within Planning District 8, the Department of Transportation shall also determine the extent to which the proposed plan or amendment will increase traffic congestion or, to the extent feasible, reduce the mobility of citizens in the event of a homeland security emergency and shall include such information as part of its comments on the proposed plan or amendment. *Further, to the extent that such information is readily available, the Department shall also include in its comments an assessment of the measures and estimate of the costs necessary to mitigate or ameliorate the congestion or reduction in mobility attributable to the proposed plan or amendment. [Effective July 1, 2014]*

3. Within 30 days of receipt of such proposed plan or amendment, the Department may request, and the locality shall agree to, a meeting between the Department and the local planning commission or other agent to discuss the plan or amendment, which discussions shall continue as long as the participants may deem them useful. The Department shall make written comments within 90 days after receipt of the plan or amendment, or by such later deadline as may be agreed to by the parties in the discussions.

B. Upon submission to, or initiation by, a locality of a proposed rezoning under § 15.2-2286, 15.2-2297, 15.2-2298, or 15.2-2303, the locality shall submit the proposal to the Department of Transportation within 10 business days of receipt thereof if the proposal will substantially affect transportation on state-controlled highways. Such application shall include a traffic impact statement if required by local ordinance or pursuant to regulations promulgated by the Department. Within 45 days of its receipt of such traffic impact statement, the Department shall either (i) provide written comment on the proposed rezoning to the locality or (ii) schedule a meeting, to be held within 60 days of its receipt of the proposal, with the local planning commission or other agent and the rezoning applicant to discuss potential modifications to the proposal to address any concerns or deficiencies. The Department's comments on the proposed rezoning shall be based upon the comprehensive plan, regulations and guidelines of the Department, engineering and design considerations, any adopted regional or statewide plans and short and long term traffic impacts on and off site. The Department shall complete its initial review of the rezoning proposal within 45 days, and its final review within 120 days, after it receives the rezoning proposal from the locality. Notwithstanding the foregoing provisions of this subsection, such review by the Department shall be of a more limited nature and scope in cases of rezoning a property consistent with a local comprehensive plan that has already been reviewed by the Department as provided in this section.

C. If a locality has not received written comments within the timeframes specified in subsection B, the locality may assume that the Department has no comments.

D. The review requirements set forth in this section shall be supplemental to, and shall not affect, any requirement for review by the Department of Transportation or the locality under any other provision of law. Nothing in this section shall be deemed to prohibit any additional consultations concerning land development or transportation facilities that may occur between the Department and localities as a result of existing or future administrative practice or procedure, or by mutual agreement.

E. The Department shall impose fees and charges for the review of applications, plans and plats pursuant to subsections A and B, and such fees and charges shall not exceed $1,000 for each review. However, no fee shall be charged to a locality or other public agency. Furthermore, no fee shall be charged by the Department to a citizens' organization or neighborhood association that proposes comprehensive plan amendments through its local planning commission or local governing body.

DEFINITIONS

The Traffic Impact Analysis Regulations includes a section, 24VAC30-155-10, that provides definitions for the major terms that are used.

The 2011 amendments deleted definitions referring to terms used in the Secondary Street Acceptance Requirements 24VAC30-92 such as "connectivity index" and "network addition" and added new definitions for "Traffic impact statement", "Local traffic impact statement", "VDOT traffic impact statement", and "Receipt."

REGULATIONS

24VAC30-155-10. Definitions.

The following words and terms when used in this chapter shall have the following meanings unless the context clearly indicates otherwise:

"Floor area ratio" means the ratio of the total floor area of a building or buildings on a parcel to the size of the parcel where the building or buildings are located.

"Local traffic impact statement" means a traffic impact statement accepted or prepared by a locality pursuant to its land development approval process and whose requirements regarding content are set out in the locality's ordinances or published policies, if such ordinances or policies have been reviewed and certified by VDOT as requiring acceptable standards of preparation and providing sufficient information to determine the current and future impacts of development proposals.

"Locality" means any local government, pursuant to § 15.2-2223 of the Code of Virginia, that must prepare and recommend a comprehensive plan for the physical development of the territory within its jurisdiction.

"Network addition" means a group of interconnected street segments and intersections shown in a plan of development that is connected to the state highway system and meets the requirements of the Secondary Street Acceptance Requirements (24VAC30-92).

"Pedestrian facility coverage" means the ratio of: (length of pedestrian facilities, such as sidewalks, foot paths, and multi-use trails, along both sides of a roadway) divided by (length of roadway multiplied by two).

"Receipt" means the date on which a proposal or request for a meeting is first in the possession of VDOT or a locality or an agent thereof, as applicable.

"Redevelopment site" means any existing use that generates traffic and is intended to be developed as a different or denser land use.

"Service level" means a measure of the quality, level or comfort of a service calculated using methodologies approved by VDOT.

"Small area plan" means a plan of development for multiple contiguous properties that guides land use, zoning, transportation, urban design, open space, and capital improvements at a high level of detail within an urban development area or for a transit-oriented development that is at least 1/2 square mile in size unless otherwise approved by VDOT due to proximity to existing moderate to high density developments. A small area plan shall include the following: (i) densities of at least four residential units per acre and at least a floor area ratio of 0.4 or some proportional combination thereof; (ii) mixed-use neighborhoods, including mixed housing types and integration

of residential, office, and retail development; (iii) reduction of front and side yard building setbacks; and (iv) pedestrian-friendly road design and connectivity of road and pedestrian networks.

"State-controlled highway" means a highway in Virginia that is part of the interstate, primary, or secondary systems of state highways and that is maintained by the state under the direction and supervision of the Commonwealth Transportation Commissioner. Highways for which localities receive maintenance payments pursuant to §§ 33.1-23.5:1 and 33.1-41.1 of the Code of Virginia and highways maintained by VDOT in accordance with §§ 33.1-31, 33.1-32, 33.1-33 and 33.1-68 of the Code of Virginia are not considered state-controlled highways for the purposes of determining whether a specific land development proposal package must be submitted to meet the requirements of this regulation.

The Code sections cited above concern VDOT maintained highways serving state parks and state institutions (educational, correctional) within a jurisdiction that maintains its own local road system.

"Traffic impact statement" means the document prepared in accordance with best professional practice and standards that assesses the impact of a proposed development on the transportation system and recommends improvements to lessen or negate those impacts.

"Transit-oriented development" means an area of commercial and residential development at moderate to high densities within 1/2 mile of a station for heavy rail, light rail, commuter rail, or bus rapid transit transportation and includes the following: (i) densities of at least four residential units per acre and at least a floor area ratio of 0.4 or some proportional combination thereof; (ii) mixed-use neighborhoods, including mixed housing types and integration of residential, office, and retail development; (iii) reduction of front and side yard building setbacks; and (iv) pedestrian-friendly road design and connectivity of road and pedestrian networks.

"Transportation demand management" means a combination of measures that reduce vehicle trip generation and improve transportation system efficiency by altering demand, including but not limited to the following: expanded transit service, employer-provided transit benefits, bicycle and pedestrian investments, ridesharing, staggered work hours, telecommuting, and parking management including parking pricing.

"Urban development area" means an area designated on a local comprehensive plan pursuant to § 15.2-2223.1 of the Code of Virginia that includes the following: (i) densities of at least four residential units per acre and at least a floor area ratio of 0.4 or some proportional combination thereof; (ii) mixed-use neighborhoods, including mixed housing types and integration of residential, office, and retail development; (iii) reduction of front and side yard building setbacks; and (iv) pedestrian-friendly road design and connectivity of road and pedestrian networks.

"VDOT" means the Virginia Department of Transportation, the Commissioner of Highways, or a designee.

"VDOT traffic impact statement" means a traffic impact statement prepared pursuant to 24VAC30-155-60.

REVIEW OF COMPREHENSIVE PLANS & AMENDMENTS

The Local Government Comprehensive Plan and Transportation Plan

A comprehensive plan is an official public document adopted by a local government as a policy guide for making decisions about the long-range physical development of the community. It indicates in a general way how the government leaders, based on citizen input, want the community to develop in the future - the quantity, character, location, and rate of growth.

The plan is comprehensive in that it encompasses all the functions that make a community work, e.g. land use, transportation, community facilities, economic development, housing, historic and natural resources. The comprehensive plan may include more detailed plans for specific areas of the community, e.g. neighborhoods, "villages", and sub-areas (a certain highway corridor or portion of the locality).

§15.2-2223 of the Code of Virginia requires the planning commission of every locality to prepare a comprehensive plan for consideration by the governing body and for the governing body of every locality to adopt a comprehensive plan. Localities must review their comprehensive plan and associated transportation plan at least every five years, pursuant to §15.2-2230 of the Code, to determine whether it needs to be updated.

The comprehensive plan must include a specific section dedicated to transportation planning or reference a document that serves as the community's transportation plan. The comprehensive plan, therefore, provides policy guidance and criteria for making both land use and transportation decisions and recommendations.

§15.2-2223 B. 3-6 requires localities to add more details to their Transportation Plans and associated Transportation Map, including a requirement to make these documents consistent with **VTrans**, the **Six-Year Improvement Program**, and specific route locations chosen by the Commonwealth Transportation Board (CTB). Furthermore, VDOT is directed to review locality transportation plans and comment on their consistency during the plan development or amendment process and, upon the adoption of such plans or amendments, to notify the CTB of inconsistencies. For more information see **Local/State Plan and Program Consistency** on the VDOT web site www.virginiadot.org

Providing Transportation Planning Technical Assistance to Localities

§15.2-2223 of the Code and 24VAC30-155-30 of the regulations (presented at the end of this Chapter) directs VDOT to provide technical assistance to local governments, *at their request*, in preparing the transportation plan in their comprehensive plan. The District Transportation and Land Use Director supervises this effort in most Districts.

Technical assistance may include:

- Providing roadway inventory and traffic data, highway capacity analysis, planned construction projects, and State Highway Plan and Statewide Planning System information.

- Determining the current and future functional classifications of the highways and advising on ultimate right of way needs based on functional classification.
- Evaluating the consistency between the Future Land Use Map/Policies and the Transportation Plan.
- Recommending and prioritizing roadway improvements.
- Identifying areas where bicycle and/or pedestrian facilities are warranted.
- Coordinating with other modal agencies (public transit, ports, airports, rail, etc).

Local jurisdictions and VDOT can gain valuable information for preparing the transportation plan in their comprehensive plan from the adopted transportation recommendations of the regional Metropolitan Planning Organization (MPO) Constrained Long-Range Plan (CLRP), a Small Urban Area Transportation Study (SUATS), or a Regional Long Range Plan (RLRP).

Transportation Plan in the Comprehensive Plan

§15.2-2223 of the Code specifies that the transportation plan within the locality's comprehensive plan shall be based on:

- An evaluation of the locality's existing transportation facilities,
- The identification of current transportation system needs,
- A comparison of the existing facilities with the community's plan for its future land use pattern (type, location, and intensity) and for the provision of public services (location of schools, public utilities, parks), and
- The identification of future transportation improvements that will be needed to support the future development, including highways (new, widening, changes to the hierarchy of roads or functional classification), bicycle and pedestrian accommodations, railways, bridges, waterway, airports, ports, and public transportation facilities.

§15.2-2223 B. 3-6 requires the locality's transportation plan to be consistent with:

- The Statewide Transportation Plan, known as VTrans**,** developed pursuant to §33.1-23.03,
- Significant new, expanded, or relocated state roadways in the Six-Year Improvement Program, and
- The specific locations of state highways set by the CTB in accordance with subdivision (1) of §33.1-12.

Finally, just identifying future transportation needs is **not** sufficient. §§15.2-2223 of the Code of Virginia requires the transportation plan to include:

- **A map** that shows road and transportation improvements that take into account current and future needs of the locality's residents while considering the current and future needs of the planning district within which the locality is located.
- **Cost estimates** for such road and transportation improvements.

Localities to Submit Comprehensive Plan, Transportation Plan, Plan Amendments, and Small Area Plans to VDOT for Review

§15.2-2222.1 of the Code (see page 3) and 24VAC30-155-30.A. of the Traffic Impact Analysis Regulations (presented at the end of this Chapter) establishes that prior to the local adoption of any comprehensive plan or the transportation plan pursuant to Code section §15.2-2223, any part of a comprehensive plan pursuant to §15.2-2228, or any amendment to any comprehensive plan per §15.2-2229 including a small area plan for all for a portion of an urban development area or transit-oriented development (see page 12 for more information on a small area plan):

- A locality shall submit such comprehensive plan, transportation plan, plan amendment, or small area plan to VDOT for review and comment if the locality anticipates that it will *substantially affect* transportation on state controlled highways. *Substantially affect* includes substantial *impacts* or *changes* to the existing transportation network of state highways.
- The locality is required to submit its comprehensive plan, transportation plan, plan amendment, or small area plan at least 100 days prior to when it estimates final action will be taken.

Localities should send their plan package to their District Transportation and Land Use Director (see the VDOT Organization chapter on page 67).

NOTE: This Code section and regulation *also* applies to cities, larger towns (over 3,500 in population), and Henrico/Arlington Counties when their comprehensive plan and plan amendments will produce a substantial impact or change, as defined below, to limited access state maintained highway interchanges or to non-limited access state maintained highways either internally or in neighboring localities.

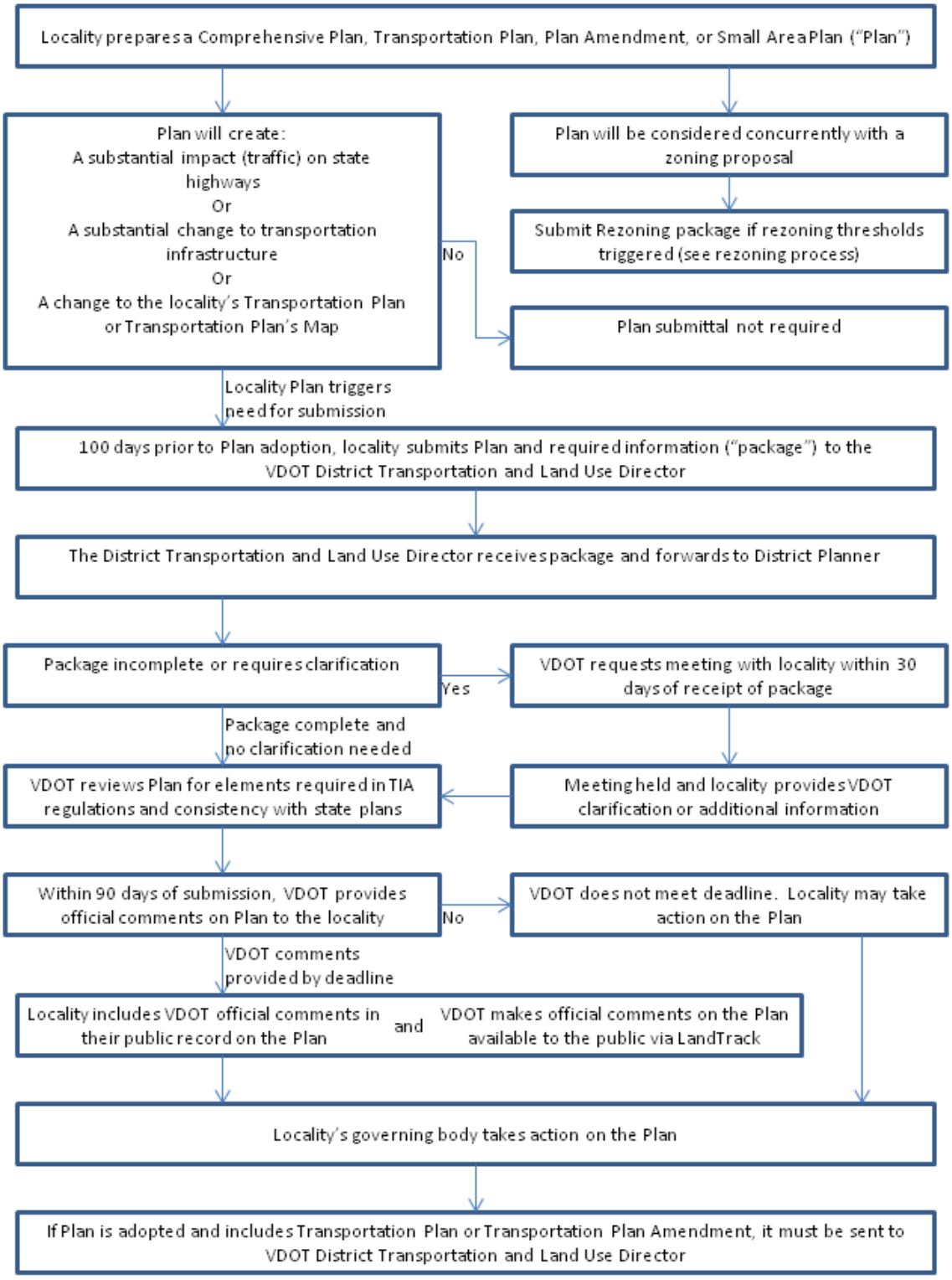
§15.2-2223 of the Code also requires all localities to submit their transportation plan or transportation plan amendment to the VDOT District Transportation and Land Use Director prior to adoption for review and comments on its consistency with the Commonwealth Transportation Board's (i) Statewide Transportation Plan (known as VTrans), (ii) significant new, expanded, or relocated state roadways in the Six-Year Improvement Program, and (iii) the specific locations of state highways set by the CTB in accordance with §33.1-12 (1).

VDOT shall provide written comments to the locality on such consistency within 90 days or such shorter period as mutually agreed upon by VDOT and the locality.

Once the transportation plan or any amendment is adopted, the locality shall submit a copy of such adopted plan or amendment to the District Transportation and Land Use Director to determine if there are any inconsistencies with the three documents referenced above.

For more information see **Local/State Plan and Program Consistency** on the VDOT web site www.virginiadot.org

PROCESS CHART
VDOT REVIEW OF A COMPREHENSIVE PLAN, TRANSPORTATION PLAN, PLAN AMENDMENT, OR SMALL AREA PLAN



24VAC30-155-30.A. of the regulations defines how to determine a proposed comprehensive plan's "substantial impact" and a "substantial change" (the Table on page 24 provides examples of the number of dwellings and the size of businesses that would produce such an impact or change).

A *substantial impact* is a change that would allow the generation of 5,000 additional vehicle trips per day on state-controlled highways **compared to the existing comprehensive plan** assuming the highest density of permissible use in accordance with the Institute of Transportation Engineers (ITE) "Trip Generation" (see page 73) or, subject to the approval of VDOT, the regional model as adopted by the local Metropolitan Planning Organization. When using the regional model approach, link volumes in the area of change are to be compared in order to determine if the submission threshold has been achieved.

Substantial changes shall include those changes that materially alter future transportation infrastructure, travel patterns, or the ability to improve future transportation facilities on state-controlled highways. Such changes would include items such as the designation of new county thoroughfares, significant expansion of agricultural or forestal districts, or changes to the locality's transportation plan or transportation plan's map.

The Locality's Comprehensive Plan/Amendment Package Submittal

VDOT will need sufficient information to evaluate a proposed comprehensive plan's, transportation plan's, or plan amendment's impact on or change to the existing transportation network. Usually the future land use policies and map will need to be assessed in this regard as well as any proposed new and expanded transportation facilities outlined in the proposed comprehensive plan or amendment to the plan.

NOTE: a traffic impact analysis study is not required for a comprehensive plan or plan amendment submittal, but can be provided.

The information to be included in the plan package submittal to VDOT is summarized in a checklist format on page 16. The locality needs to provide **one paper and one electronic copy** of this information to VDOT (see 24VAC30-155-30.B at the end of this Chapter).

When a comprehensive plan or comprehensive plan amendment and related rezoning proposal that cover the same geographical area *are being considered concurrently* by a locality, only a rezoning package per 24VAC30-155-40 needs to be prepared and provided to VDOT for review.

NOVA District Plan Review: Homeland Security Emergency Evacuations

§15.2-2222.1 of the Code requires comprehensive plans and plan amendments submitted by localities in Planning District 8 (Northern Virginia) to also be reviewed to determine the extent to which the plan or amendment will increase traffic congestion or, to the extent feasible, reduce the mobility of citizens in the event of a homeland security emergency and to include such information in the comments to the locality.

During the 2014 session of the General Assembly, §15.2-2222.1 of the Code was further amended to require the Department to also assess the measures and estimate the costs, *based on readily available information*, to mitigate the congestion or reduction in mobility attributable to the proposed comprehensive plan or amendment. The findings shall be included in the Department's comments to the locality on the submitted plan or amendment.

VDOT's Northern Virginia (NOVA) District encompasses Planning District 8, which includes: Arlington, Fairfax, Loudoun, Prince William Counties; the Cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park; and the Towns of Dumfries, Herndon, Leesburg, Purcellville, and Vienna.

To accomplish the legislative directive, upon receipt of a comprehensive plan or amendment, the NOVA District Transportation and Land Use Directors will notify and forward a copy to the District Transportation Planning and Investment Director and the Northern Region Operations Director. They will be responsible for assessing potential impacts on evacuation in the event of a homeland security emergency, the options for reducing these impacts, and their costs.

Changes to the location and/or density of future residential and business development and changes to future transportation infrastructure (e.g. new thoroughfares or Metro stations) will affect emergency evacuation situations. During such an evacuation, people in the vicinity of the emergency will attempt to leave the area at the same time using the available transportation modes: car, bus, Metro, walking, bicycle, train.

The mobility of people in the event of an emergency is dependent on the presence of multiple transportation options for vacating a given area. As a result, comprehensive plans and plan amendments submitted under the Regulations will be reviewed to determine the availability of the following evacuation options in the plan area:

- Multiple entry and exit points.
- Bus routes.
- A bridge (stream/river in the area).
- "Shelter in Place"
- Proximity of a Metro or railroad station.
- Multi-lane highways.
- Sidewalks, bicycle lanes.
- Operational strategies to mitigate congestion

Key strategies for homeland security event evacuation involve changes in signalization, temporary control of access points by law enforcement, providing for emergency vehicle access in gridlock, and creating staging areas for emergency operations.

It also will be important to consider if the proposed change to the comprehensive plan will adversely affect the capacity of the roadways within the NoVA Emergency Evacuation Roadway system.

Northern Region Operations and the NOVA District Transportation Planning/Investment section will coordinate a basic assessment of transportation options available for evacuation. Traffic analysis, evaluating alternative scenarios, and planning level qualitative analysis may be used as appropriate to estimate possible impacts the plan or plan amendment could have on mobility during emergency situations. Then using readily available information potential measures to reduce this impact and a general estimate on their cost will be identified.

The findings will be forwarded to the appropriate Transportation and Land Use Director to be included in the overall District TIA Regulation comments to the locality on the proposed plan or plan amendment.

Localities in Northern Virginia are encouraged to review the above referenced state law and consider emergency evacuation as part of their comprehensive planning process.

Small Area Plan Amendments to Comprehensive Plans

Compact, mixed-use development can help reduce the demand for additional transportation capacity such as new roads and road widening. However, these benefits are not always quantified when each proposed development is considered individually.

The Traffic Impact Analysis Regulations were amended in 2010 to offer local governments the option of conducting a single traffic impact analysis for all parcels that are part of a small area plan adopted as an amendment to the local comprehensive plan:

> A small area plan is a plan of development for multiple contiguous properties that guides land use, zoning, transportation, urban design, open space, and capital improvements at a high level of detail . . . that is at least ½ square mile in size.

The *small area plan* must be for properties within an *urban development area* designated pursuant to § 15.2-2223.1 of the Code or for a *transit-oriented development* area of commercial and residential development near a transit station (see the Definitions Chapter).

VDOT has selected an alternative non-ITE trip generation methodology that is automatically approved by VDOT for use when a local government conducts a single traffic impact analysis for the parcels within the small area plan. It is the Mixed Use Trip Generation Model V 4.0 providing trip reduction for compact, mixed use development (p. 43 in the Traffic Impact Analysis Chapter).

The single traffic impact analysis prepared for the small area plan can be used as the traffic impact statement (study) required by the Regulations for a proposed rezoning within the small area plan, if the rezoning is in substantial conformance with the small area plan (see the page 27).

The traffic impact analysis study for the small area plan may reduce the number of individual traffic impact analyses required for developments that are proposed within the small area plan.

A Locality's Small Area Plan Amendment Package Submittal

A locality that prepares a small area plan as an amendment to their comprehensive plan for an urban development area or transit-oriented development may submit a small area plan package.

The small area plan package submitted by the locality to VDOT shall contain sufficient information and data to determine the location of the area, its size, its impact on state-controlled highways, and the methodology and assumptions used in the analysis of the impact. This will allow related rezoning(s) in the boundaries of the small area plan to use the study to as the traffic impact statement requirement for a rezoning.

Submittal of an incomplete package shall be considered deficient in meeting the submission requirements of §15.2-2222.1 of the Code and shall be returned to the locality and the applicant, if applicable, identifying the deficiencies noted.

This information is summarized in a checklist format on page 16. The quickest way for the locality to send this information, and for VDOT to use it internally, is in an electronic version.

The Comprehensive Plan Review Process Rules 24VAC30-155-30.D.

The locality should submit their comprehensive plan, plan amendment, or small area plan (the "Plan") package to the District Transportation and Land Use Director. This individual will coordinate the review of the plan with the appropriate sections within the District Office (see the VDOT Administration of the Regulations chapter, page 66).

MEETING WITH LOCALITY. §15.2-2222.1 of the Code specifies that within **30 days** of receipt of the Plan package, VDOT (e.g. the District Transportation and Land Use Director) may request, and the locality shall agree to, a meeting with the planning commission or other agent to discuss the plan or amendment, which discussions shall continue as long as the participants deem them useful.

VDOT'S OFFICIAL WRITTEN COMMENTS ON THE PLAN PACKAGE. The District Transportation and Land Use Director will supervise the submittal of VDOT's official comments to the locality.

The official comments include: (i) a transmittal letter (a sample official comment letter is presented on the last page of the Appendix) and (ii) a written report containing comments on the transportation facilities that will be needed to support the current and planned development of the locality based on the results of VDOT's evaluation of the Plan package.

If the plan package included the locality's Transportation Plan or an amendment to that plan, VDOT's comments shall include an evaluation of the consistency of the locality's plan or amendment with VTrans, SYIP, and the location of state routes. See page 7 and 9.

NOTE: key findings in the written report may be included within the body of the letter.

- A description of the contents of **VDOT's written report** is presented on the next page.

DEADLINE TO PROVIDE VDOT'S OFFICIAL WRITTEN COMMENTS TO THE LOCALITY. The District Transportation and Land Use Director's coordination of VDOT's review of the Plan must be completed so that VDOT's comments can be transmitted to the locality:

- Within *90 days* of the receipt of the Plan package, or by such later deadline as may be agreed to by the parties.

LOCALITY MAY TAKE ACTION IF DEADLINES ARE NOT MET. If VDOT's official comments are not received by the above deadline, the locality may choose to take action on the Plan. Again, the intent of the regulations is that VDOT's review does not lengthen the local planning process.

LOCALITY SHALL INCLUDE VDOT'S COMMENTS IN THEIR OFFICIAL RECORD. The regulations (24VAC30-155-30.D, page 18) specify that the local government include VDOT's official comments in the locality's official public record on the plan or plan amendment.

- The local government can do so by placing VDOT's official comments (transmittal letter and written report) in the locality's files for the Plan and by referencing this information in the locality's staff report on the Plan.
- The key findings and comments in VDOT's written report also should be acknowledged in the minutes of the Planning Commission and the governing body's public hearings on the comprehensive plan, plan amendment, or small area plan proposal.

VDOT TO MAKE OFFICIAL COMMENTS AVAILABLE TO THE PUBLIC. VDOT must make its written comments available to the public through various means, e.g. through the external LandTrack web page on the VDOT public web site (see page 77), copies at the local government offices, or a presentation to the locality.

Written Report with VDOT's Comments 24VAC30-155-70

VDOT will provide the locality with a written report containing the key findings of VDOT's evaluation of the comprehensive plan, plan amendment, or small area plan.

The focus of the analysis will be on identifying and recommending transportation improvements that will be needed to support the community's plan for future growth (future land use plan) and the community's plan for future public services (location of schools, public utilities, parks). Transportation improvements may include highways, bicycle and pedestrian accommodations, railway, transit, and other facilities as identified in the comprehensive plan, or that should be considered by the locality.

VDOT can provide comments on how the locality's proposed Plan policies on such matters as the location of future residential and business development or plans for new community facilities such as schools and water/sewer utilities will influence the need for future road improvements. Part of this review may include providing cost estimates to the local government for transportation improvements recommended by the Plan.

Finally, the locality can be advised about VDOT regulations and standards that can help protect highway corridors from congestion and traffic crashes. For example, the plan should address the importance of managing future access to highways. Plan policies could reference the need to review land development proposals to assure compliance with VDOT's access management regulations and standards. The comprehensive plan can recommend that detailed transportation plans be prepared for highway corridors that will experience growth and increased traffic. District staff can assist localities with their transportation planning efforts.

This chart summarizes how VDOT can analyze the need for future transportation improvements:

Plan Element	Existing transportation network	Future land use, population growth, new public utilities	Deficiency analysis performed	Deficiencies are addressed	Cost estimates included	Map of needed improvements	Consistency with state plans
Inventory	X					X	X
Assumptions	X	X					
Needs Assessment	X	X	X	X			
Recommendations	X	X	X	X	X	X	X

Comprehensive Plan or Plan Amendment Package Checklist*

For a comprehensive plan or a transportation plan, the locality shall provide one paper and one electronic copy of the following:

☐ **A COVER SHEET**, containing:

- ☐ **CONTACT INFORMATION** for the locality, and
- ☐ **A SUMMARY OF MAJOR CHANGES** made to the comprehensive plan or transportation plan;

☐ **THE PROPOSED COMPREHENSIVE PLAN OR TRANSPORTATION PLAN and the following Elements**:

- ☐ **INVENTORY** – An inventory (written or graphic) of the existing transportation network, which shall include at a minimum all roadways within the Federal Aid system - any roadway classified as a Major or Urban Collector or higher functional classification or is included within the National Highway System (for more information on these terms see VDOT's web site). VDOT District staff can provide assistance regarding which roadways must be included in the inventory.
- ☐ **ASSUMPTIONS** – Planning assumptions directly influence the demand placed on the transportation system. Examples of planning assumptions that may be addressed include population growth, employment growth, and location of critical infrastructure such as water and sewer facilities.
- ☐ **NEEDS ASSESSMENT** – Written or graphic evaluation of the transportation systems current and projected performance and conditions. This evaluation should compare the existing transportation system with the future land use policies and maps in order to determine how future growth will affect the transportation system.

  The needs assessment will identify specific deficiencies based on current conditions, as well as future improvements that will be needed to serve the anticipated development based on the future land use policies and maps.

- ☐ **RECOMMENDATIONS** – Proposed improvements or additions to transportation infrastructure.

  Recommendations should be specific so that the need, location and nature of the proposed improvements are clear and understandable. The recommendations should address some or all of the needs identified in the needs assessment step, above. **The recommendations must be consistent with VTrans; significant new, expanded, or relocated highway projects in the SYIP; and the selected location of state highways set by the CTB.**

  Localities are encouraged to include pedestrian, bicycle, transit, rail and other multi-modal recommendations as they deem appropriate.

  - ☐ **MAP** - The transportation plan shall include a map showing road and transportation improvements, taking into account the current and future needs of residents in the locality while also considering the current and future needs of the planning district within which the locality is situated.
  - ☐ **COST** - Recommended improvements shall include cost estimates as available from VDOT.

☐ **FEES** (SEE BELOW)

For an *amendment* to a comprehensive plan or transportation plan, the locality shall provide one paper and one electronic copy of the following:

☐ **A COVER SHEET**, containing:

- ☐ **CONTACT INFORMATION** for the locality;
- ☐ **A SUMMARY OF THE PROPOSED AMENDMENT** or amendments to the comprehensive plan or transportation plan;

- ☐ **PROPOSED IMPROVEMENTS/ADDITIONS TO THE STATE HIGHWAY SYSTEM** must be consistent with VTrans; significant new, expanded, or relocated highway projects in the SYIP; and the selected location of state highways set by the CTB; and
- ☐ **An OVERVIEW** of reasoning and purpose for amendments.

☐ **APPLICATION FORMS** and documentation presented to or prepared by the local jurisdiction,

☐ **ASSOCIATED MAPS OR NARRATIVES** that depict and detail the amendment under consideration,

☐ **ANY CHANGES** to the planning assumptions associated with the amendment, and

☐ **LOCAL ASSESSMENT** of the potential impacts the amendment may have on the transportation system.

☐ **The ELEMENTS IDENTIFIED ABOVE** (4th checkbox on previous page) that VDOT determines are needed in order to review and comment on impacts to state-controlled highways.

☐ **FEES (SEE BELOW)**

For a small area plan amendment to a comprehensive plan, the locality shall provide:

☐ **A COVER SHEET**, containing:

- ☐ **CONTACT INFORMATION** for the locality;
- ☐ **SMALL AREA PLAN DETAILS**:
  - ☐ **LOCATION**;
  - ☐ **HIGHWAYS** and **TRANSIT FACILITIES** adjacent to the site;
  - ☐ **PARCEL NUMBER** or **NUMBERS**; and
  - ☐ **PROPOSAL SUMMARY** with development names, size, and proposed zoning.

☐ **A VDOT TRAFFIC IMPACT STATEMENT** prepared in accordance with 24VAC30-155-60.

☐ **A PLAN OF DEVELOPMENT** for the area encompassed by the small area plan.

FEES

NO FEE is charged by VDOT if the comprehensive plan, plan amendment, or small area plan amendment **is initiated by a locality or public agency**.

NO FEE is charged by VDOT to **a citizens' organization or neighborhood association** that proposes comprehensive plan amendments through its local planning commission or local governing body.

FOR A PRIVATE SECTOR initiated plan amendment (usually tied to a rezoning proposal) or a small area plan amendment to the comprehensive plan:

☐ **A $1,000 FEE** paid by the applicant for the initial or second review of a comprehensive plan, an amendment to the plan, or a small area plan amendment to the comprehensive plan.

☐ **A $1,000 FEE** paid for a third or subsequent submission of a comprehensive plan, plan, or a small area plan amendment that is requested by VDOT on the basis of the failure of the applicant to address deficiencies previously identified by VDOT.

* This checklist is on the VDOT Traffic Impact Analysis Regulations website as a MS Word editable form.

REGULATIONS

24VAC30-155-30. Comprehensive plan and comprehensive plan amendment.

A. Plan and amendment submittal. Prior to adoption of any comprehensive plan pursuant to § 15.2-2223 of the Code of Virginia, any part of a comprehensive plan pursuant to § 15.2-2228 of the Code of Virginia, or any amendment to any comprehensive plan as described in § 15.2-2229 of the Code of Virginia, including small area plans, if required by this section of this chapter, the locality shall submit such plan or amendment to VDOT for review and comment, such submission should take place at least 100 days prior to anticipated final action by the locality. The Virginia Department of Transportation shall, upon request, provide localities with technical assistance in preparing the transportation plan of the comprehensive plan. The comprehensive plan or comprehensive plan amendment package shall be submitted to VDOT if it is reasonably anticipated to substantially affect transportation on state controlled highways. Substantially affect, for the purposes of comprehensive plans, includes substantial changes or impacts to the existing transportation network. For the purposes of this section, a substantial impact shall be defined as a change that would allow the generation of 5,000 additional vehicle trips per day on state-controlled highways compared to the existing comprehensive plan assuming the highest density of permissible use in accordance with the Institute of Transportation Engineers Trip Generation, 8th Edition, 2008 or, subject to the approval of VDOT, the regional model as adopted by the local Metropolitan Planning Organization, and substantial change shall include those changes that materially alter future transportation infrastructure, travel patterns, or the ability to improve future transportation facilities on state-controlled highways.

B. Required elements. The submission by the locality to VDOT shall contain sufficient information so that VDOT may evaluate the system of new and expanded transportation facilities, outlined in the transportation plan, that are needed to support the current and planned development of the territory covered by the plan. In order to conduct this evaluation, the package submitted to VDOT shall contain the following items:

1. For a comprehensive plan or a transportation plan, the locality shall provide one paper and one electronic copy of the following:

a. A cover sheet, containing:
   (1) Contact information for the locality, and
   (2) Summary of major changes made to the comprehensive plan or transportation plan;

b. The proposed comprehensive plan or transportation plan, and the following elements:
   (1) Inventory – an inventory (written or graphic) of the existing transportation network, which shall include at a minimum all roadways within the Federal Aid system.
   (2) Assumptions – planning assumptions shall be detailed, since these assumptions directly influence the demand placed on the transportation system. Population growth, employment growth, location of critical infrastructure such as water and sewer facilities, among others, are examples of planning assumptions that may be addressed.
   (3) Needs assessment – written or graphic evaluation of the transportation system's current and projected performance and conditions. The needs assessment identifies specific deficiencies.
   (4) Recommendations – proposed improvements or additions to the transportation infrastructure. Recommendations should be specific so that the need, location and nature of the proposed improvements are clear and understandable. Localities are encouraged to include pedestrian, bicycle, transit, rail and other multi-modal recommendations as they deem appropriate. The transportation plan shall include a map showing road and transportation improvements, taking into account the current and future needs of residents in the locality while considering the current and future

needs of the planning district within which the locality is situated. Recommended improvements shall include cost estimates as available from VDOT.

2. For an amendment to a comprehensive plan or transportation plan, the locality shall provide one paper and one electronic copy of the following:

a. A cover sheet, containing:
   (1) Contact information for the locality;
   (2) Summary of proposed amendment or amendments to the comprehensive plan or transportation plan; and
   (3) Overview of reasoning and purpose for amendments.

b. Application forms and documentation presented to or prepared by the local jurisdiction,

c. Associated maps or narratives that depict and detail the amendment under consideration,

d. Any changes to the planning assumptions associated with the amendment,

e. Local assessment of the potential impacts the amendment may have on the transportation system, and

f. Those elements identified in subdivision 1 b of this subsection that VDOT determines are needed in order to review and comment on impacts to state-controlled highways.

C. Small area plans for urban development areas and transit oriented developments. A locality that develops a small area plan for all or a portion of an urban development area or transit-oriented development and corresponding amendments to their comprehensive plan, as described in § 15.2-2229 of the Code of Virginia, that will have a substantial effect on the state transportation network pursuant to this section of the regulation, may in lieu of submitting a comprehensive plan amendment package as required under subsection B of this section submit a small area plan package.

The small area plan package submitted by the locality to VDOT shall contain sufficient information and data so that VDOT may determine the location of the area impacted by the small area plan, its size, its impact on state-controlled highways, and the methodology and assumptions used in the analysis of the impact. Submittal of an incomplete small area plan package shall be considered deficient in meeting the submission requirements of § 15.2-2222.1 of the Code of Virginia and shall be returned to the locality and the applicant, if applicable, identifying the deficiencies noted. A small area plan package submitted to VDOT shall contain the following items:

1. A cover sheet containing:

   a. Contact information for locality;

   b. Small area plan location, highways and transit facilities adjacent to site, and parcel number or numbers;

   c. Proposal summary with development names, size, and proposed zoning;

2. A VDOT traffic impact statement prepared in accordance with 24VAC30-155-60; and

3. A plan of development for the area encompassed by the small area plan.

D. Review process. VDOT may, pursuant to §15.2-2222.1 of the Code of Virginia, request a meeting with the locality to discuss the plan or amendment. The request must be made within 30 days of receipt of the proposal. VDOT must provide written comments to the locality within 90 days of the receipt of the plan or plan amendment or by such later deadline as may be agreed to by the parties. VDOT will conduct its review and provide official comments to the locality for inclusion in the official public record of the locality. VDOT shall also make such comments available to the public. Nothing in this section shall prohibit a locality from acting on a comprehensive plan or plan

amendment if VDOT's comments on the submission have not been received within the timelines in this section.

E. Concurrent consideration. For the purposes of this regulation, when a related comprehensive plan or comprehensive plan amendment and a rezoning proposal that cover the same geographical area are being considered concurrently by a locality, only a rezoning package as required under 24VAC30-155-40 shall be prepared and provided to VDOT for review.

24VAC30-155-70. Departmental analysis.

After concluding its review of a proposed **comprehensive plan or transportation plan or plan amendment**, or rezoning, VDOT shall provide the locality and applicant, if applicable, with a written report detailing its analysis and when appropriate recommending transportation improvements to mitigate any potential adverse impacts on state-controlled highways. VDOT shall provide recommendations for facilitating other modes of transportation including but not limited to transit, bus, bicycle and pedestrian facilities or accommodations where such facilities or accommodations are planned or exist, or where such facilities have a significant potential for use. In addition, VDOT shall provide the locality and the applicant, if applicable, with preliminary recommendations regarding compliance with other VDOT regulations such as the Secondary Street Acceptance Requirements (24VAC30-92), the Access Management Regulations: Principal Arterials (24VAC30-72), and the Access Management Regulations: Minor Arterials, Collectors, and Local Streets (24VAC30-73).

REVIEW OF REZONING PROPOSALS

Zoning Basics

Zoning is the main regulatory tool used by local governments to control the use of land. Zoning districts are established for the major categories of land use such as residential, commercial, industrial, and agricultural. A locality may have one or more zoning district classifications for each category, e.g. neighborhood commercial district, highway commercial district. The zoning map illustrates how each property in the locality is zoned.

The zoning ordinance specifies the permitted uses of land in each district, the density (minimum lot size or maximum number of dwelling units per acre), building bulk (height, yard/setback from lot lines), and such matters as landscaping, signs, and parking. §§15.2- 2280, 15.2-2283, and 15.2-2284 of the Code of Virginia describe the purposes of zoning.

In addition to a list of permitted uses, zoning districts also may include a list of conditional uses, special uses, and/or special exceptions that will only be allowed with certain conditions to protect the surrounding residences, businesses, environmental resources, and public infrastructure including roads (see §15.2-2286 (3) of the Code). Examples include kennels, home occupations, and quarries. The governing body sets the conditions for approval which may address such matters as noise levels, hours of operation, lighting, transportation improvements, etc.

NOTE: The Traffic Impact Analysis Regulations do apply to conditional use, special use, or special exception requests as these are considered zoning proposals.

The zoning of the community, and rezoning decisions for individual properties, should be based on the guidance provided by the comprehensive plan – the future land use plan, transportation plan, and public facilities plan.

A Key Opportunity to Resolve Land Development Issues

The rezoning process allows VDOT to review land development proposals at the earliest point in the local land use regulatory process when there is a great deal of flexibility in design details of the development.

A locality's zoning ordinance specifies the permitted uses in each zoning district. The list of permitted uses in a district can be fairly extensive, particularly for commercial and industrial districts. A General Business District, for example, can offer a wide range of uses: antique shop, fast food restaurant, office building, and movie theater. The permitted uses can also differ in size: a small vs. large shopping center, gas station, or office building. The type, size, and intensity of the use will help determine whether it will have a minor or substantial impact on state highways.

As a result, it is important for the rezoning applicant to submit basic details on their intended use the subject property such as the location, acreage, maximum number of lots, types of land uses, and maximum square feet of commercial or industrial uses. It is also helpful to have the rezoning applicant provide a "conceptual", "preliminary", or "master" plan of their proposed

development with their application to illustrate in general terms the characteristics of the proposal: location, types of uses, physical features of the property, adjacent roads, internal layout of structures and streets.

NOTE: The locality cannot require the rezoning applicant to comply with supplementary information submitted with the rezoning application such as the basic details on the intended use of the property or a conceptual plan unless such details and conceptual plan of development are proffered as conditions of the rezoning (conditional zoning is discussed below).

There are a number of rural counties that have not adopted conditional zoning. Or the applicant may not agree to proffer such details as the types of uses, maximum number of lots, maximum square feet of business buildings, conceptual plan showing the general layout of the proposed land uses and internal street system.

In these cases, the VDOT reviewer should evaluate the rezoning according to the use in the zoning district's list of permitted uses that will likely have the highest trip generation while taking into consideration the characteristics of the property, local development trends, and patterns of development. For example, factors that may limit the size and types of uses that could be developed include the topography, the availability of water/sewer utilities, the type of highway to be accessed, and the types of businesses in the vicinity.

It is therefore extremely important that VDOT receive sufficient information about the intended use of the property in the rezoning documents and through meetings with the locality and the applicant to be able to thoroughly evaluate the rezoning case. In this way VDOT can help localities to recognize how a proposed rezoning will impact the existing transportation network and how to best address these impacts.

The locality can then use the results of VDOT's analysis to determine whether or not to approve the rezoning proposal and if so with what conditions.

Conditional Zoning

During the rezoning process, all local governments are eligible to accept a rezoning applicant's voluntary proffered conditions for on-site improvements to reduce the land use impacts of the proposed development on the community. This first type of conditional zoning is authorized in §15.2-2297 of the Code of Virginia.

Such proffered conditions can include limitations on the amount of development, additional right of way along the property's road frontage based on the road's current/future functional classification and details on the internal transportation network - sidewalks, bicycle lanes.

In most localities a rezoning applicant also can proffer to build or contribute to the cost (cash proffers) of off-site improvements such as new roads or widening existing roads, improving existing intersections including signalization, and dedicating land for road right-of-way and proffering cash for such transportation improvements. §15.2-2298 of the Code states that these off-site proffers can be for the "construction of new roads or improvement or expansion of existing roads. . . to meet increased demand attributable to new development." §15.2-2298 was

amended during the 2007 General Assembly to grant localities the option of using the conditional zoning authority contained in §15.2-2303 of the Code. This Code section allows localities to accept reasonable proffers of cash, land, and the construction of public improvements with fewer restrictions, e.g. "the need for which is not generated solely by the rezoning itself". The Commission on Local Government maintains a list of localities eligible to administer this second type of conditional zoning (cash proffers).

Proffered conditions can address such matters as:

- Improvements that are recommended for motorists' safety or maintain through traffic flow - such as an off-site left turn lane, an additional through lane, or entrance consolidation with a neighboring property.
- Financial contribution towards an off-site improvement that eventually will be needed due to a combination of existing traffic projections and the development's trip generation, for example 50% of an off-site traffic signal's cost in relation to the development adding 50% more traffic that will trigger the future need for the signal.
- The conceptual plan, the maximum density, and development phasing details can be proffered to assure that use and design decisions of the project will carried out.

Localities to Submit Certain Rezoning Proposals to VDOT for Review

§15.2-2222.1 of the Code and the Traffic Impact Analysis Regulations, 24VAC30-155-40 (page 37), requires localities to send, within *10 business days* of their receipt of a complete application, rezoning proposals that will *substantially affect* transportation on state highways to VDOT to review and provide comments on the transportation impacts of the proposal.

24VAC30-155-40.A provides the details for determining whether a rezoning proposal is required to be submitted to VDOT for review and comments. The details are summarized below.

Any rezoning proposal (for subdivisions, apartments, townhouses, commercial, office, mixed use developments, industrial, government facilities, etc.) will substantially affect transportation on state highways if it **meets or exceeds one or more of the following trip generation criteria**:

1) In a jurisdiction in which VDOT has maintenance responsibility for the secondary highway system, **a rezoning proposal that will generate more than 5,000 vehicle trips per day** at the site's connection to a state highway.

a) If the site does not have a direct entrance, the site's connection is where the road network, which the site uses for access, attaches to a state highway.

b) In cases where the site has multiple entrances to highways, volumes on all entrances shall be combined for the purposes of this determination.

2) In a jurisdiction in which VDOT does *not* have maintenance responsibility for the local highway system, **a rezoning proposal that generates more than 5,000 vehicle trips per day** and whose *nearest property line is within 3,000 feet*, measured along public roads or streets, of a connection to a state highway (see page 25 for more information and an illustration on this).

The rezoning proposal submittal threshold has been established to target larger developments of a more regional scale for VDOT's review under the regulations.

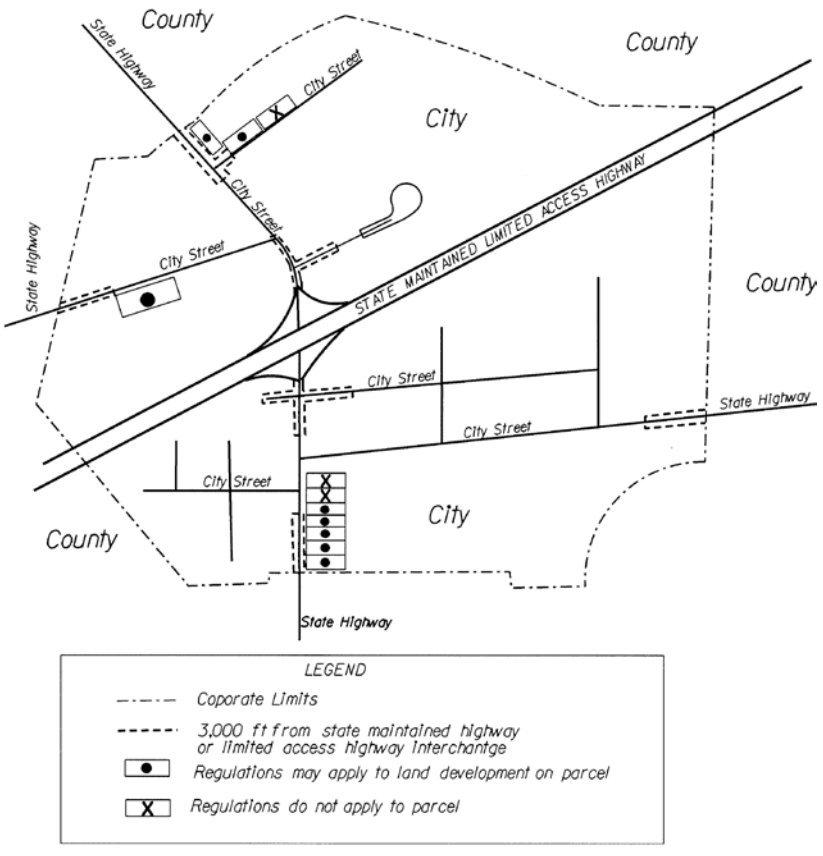
EXAMPLES OF DEVELOPMENT THAT MEET THE 5,000 VEHICLES PER DAY TRIP GENERATION THRESHOLD				
ITE Trip Generation Land Use	**Code**	**E or R**	**W or S**	**Size or Number of Units**
Light Industrial	110	Equation	Weekday	690,000 sq. ft.
Single Family, Detached	210	Equation	Weekday	555 du
		Equation	Saturday	520 du
Apartment	220	Equation	Weekday	820 du
		Equation	Saturday	670 du
Condo/Townhouse	230	Equation	Weekday	1060 du
Residential PUD	270	Equation	Weekday	650 du
Hotel	310	Equation	Saturday	560 rooms
High School	530	Rate	Weekday	2950 Students
Hospital	610	Rate	Weekday	425 Beds
General Office Building	710	Equation	Weekday	560,000 sq. ft.
Business Park	770	Equation	Weekday	400,000 sq. ft.
Home Improvement Superstore	862	Rate	Weekday	170,000 sq. ft.
Gas Station w/ Conv. Mkt.	945	Rate	Weekday	32 pumps
Pharmacy w/o Drive-Thru	880	Rate	Weekday	56,000 sq. ft.
NOTE: These estimates have been rounded and are not official thresholds. They are offered as examples only. The calculations may differ based on the specific land use code of the ITE Trip Generation that is applied. Du – dwelling unit; Sq. ft – square feet				
Source: *Trip Generation* by Microtrans™, Version 6 software and Institute of Transportation Engineers (ITE) *Trip Generation*, 8th edition.				

JURISDICTIONS THAT MAINTAIN OWN LOCAL ROAD SYSTEM

Cities, the larger towns (3,500 or more in population that maintain their roads), and Henrico and Arlington Counties (maintain their local roads) *are required to submit rezoning proposals for larger projects to VDOT only if* the nearest property line of the parcel subject to the rezoning is within 3,000 ft of a connection to a state highway measured along public roads or streets.

In situations where a parcel accesses the local road network via an easement through another property, the easement shall be considered part of the parcel for purposes of determining distance from a connection to a VDOT maintained highway.

VDOT maintained highways serving state parks and state institutions (educational, correctional) are exempt from this regulation for the purposes of determining if a development proposal within a jurisdiction that maintains its own local road system is subject to the regulations. For example, VDOT maintains the roads within the College of William and Mary. If the above 3,000 ft rule was applied to these roads, this distance around the College would affect a large number of highways and streets in the City of Williamsburg, requiring rezoning proposals for larger projects in the City to be subject to the regulations.



3) A **residential rezoning** proposal that meets the **"low volume road submission"** thresholds:

a) It **generates more than 400 daily vehicle trips** on a state highway and,

b) Once the site generated trips are distributed to the receiving highway, the proposal's vehicle trips on the highway exceed the daily traffic volume such state highway presently carries according to the most recently published amount measured in the last traffic count conducted by VDOT or the locality on that highway.

c) In cases where the site has access to multiple highways, each receiving highway shall be evaluated individually for the purposes of this determination.

When the "low volume road" residential rezoning proposal will have entrances to more than one highway, the trips generated by the proposed development on each highway will be assessed to determine if each highway meets the low volume road threshold.

Trip generation calculations used to determine if a rezoning proposal meets the trip criteria:

- Shall be based upon the rates or equations published in the Institute of Transportation Engineers **Trip Generation** (see the Reference Documents chapter, page 73) or, if approved by VDOT, from alternate published guides or local trip generation studies.
- Shall *not be reduced* through internal capture rates, pass by rates, or any other reduction methods. The opportunity to properly use these reduction rates will be provided in the traffic impact statement itself.
- For *redevelopment sites only* (defined in the Definitions chapter on page 5), when the existing use is to be developed as a different or denser use, trips currently generated by the existing development that will be removed may be deducted from the total trips that will be generated by the proposed land use (24VAC30-155-40 A).

NOTE: One straightforward way of determining if trip generation thresholds have been met is to compare what's on the ground with what's being submitted. For example, if the owner had razed the buildings on a site, then sold it, the buyer/developer would not be able to deduct the previous usage of the site from his trip calculations for purposes of determining if the proposed rezoning must be submitted to VDOT for review under the regulations.

Similarly, if a developer had obtained a building permit for a use but never started construction and then submitted a new rezoning application, the developer couldn't take the traffic that would have been generated by the approved buildings and deduct it from the gross trip generation.

Exemptions to the Rezoning Submittal Requirements

No submission will be required even if the proposal meets one of the above thresholds if the rezoning will generate less daily traffic, and no increase in the existing hourly traffic, when compared to the trip generation of land uses allowed by right under the current zoning of the property, except governmental uses.

For example, if currently zoned residential and the property is proposed to be rezoned to allow a neighborhood type shopping center and the commercial use would generate less than or equal to the traffic that could be produced by a subdivision or an apartment complex of a density that would be allowed under the current zoning, then the commercial rezoning proposal would be exempt from the regulations.

On the other hand, if the property to be rezoned is currently zoned Agricultural and large traffic generators such as high schools or government office complexes are permitted by right in the District, these government uses cannot be used to exempt the rezoning proposal from the regulatory submission requirement.

The specific provisions of the regulations that pertain to this submission exemption are:

- **No submission shall be required** under this section if the rezoning proposal consists of no changes in allowable land use.
- **No submission shall be required** if the rezoning proposal results in lower maximum daily trip generation and no increase in maximum trip generation for AM Peak Hour of the adjacent street, PM Peak Hour of the adjacent street, and Weekend Peak Hour when compared to the hourly trip generation of land uses allowed by right under the current zoning, except governmental uses such as schools and libraries.

Rezoning Proposals Associated with Small Area Plans

A local government may have amended its comprehensive plan to adopt a *small area plan* for an *urban development area* designated pursuant to § 15.2-2223.1 of the Code or for a *transit-oriented development* area (see the Definitions chapter and page 12 on Small Area Plan Amendments to Comprehensive Plans).

> A small area plan is a plan of development for multiple contiguous properties that guides land use, zoning, transportation, urban design, open space, and capital improvements at a high level of detail . . . that is at least ½ square mile in size.

The locality can prepare a single traffic impact analysis study using the mixed use development alternative trip generation methodology or standard ITE methodology (see page 43 in the Traffic Impact Analysis chapter) *for the small area plan*. **In addition**, a traffic impact analysis study may have been initiated for a small area plan at the request of a locality prior to December 31, 2011 (the subsection's effective date) and that study contains substantially the same elements as those of a VDOT traffic impact statement.

In either case the small area plan study can then serve as the traffic impact analysis study required by the Regulations for any rezoning proposal for parcel(s) within the boundaries of the small area plan if the rezoning is:

1) In substantial conformance with the small area plan (the density of the rezoning proposal may deviate up to 10 percent and remain in substantial conformance with the plan),
2) The character and volume of the trip generation by the uses proposed by the rezoning are similar to those proposed by the small area plan, and
3) All assumptions made in the small area plan traffic impact study remain generally valid.

NOTE: If the small area plan traffic impact analysis assumptions are no longer valid, the study may be updated and then used for a rezoning proposal within the plan area.

Scope of Work Meeting for Rezoning Proposals

PROPOSALS THAT GENERATE LESS THAN 1,000 VEHICLE TRIPS PER PEAK HOUR
The locality and/or the applicant *may* request a scope of work meeting with VDOT to discuss the required elements of a VDOT or the requirements of the local traffic impact analysis study. **VDOT will reply within 30 days of its receipt of the request and provide a date that is no more than 60 days from such receipt**, including time and location for the meeting.

While not required, an applicant is encouraged to request a scope of work meeting in the event they intend to use pass-by and internal capture rates different than those addressed in the regulation, trip generation rates based upon local studies, or similar variances from the norms generally encountered by VDOT reviewers.

PROPOSALS THAT GENERATE 1,000 OR MORE VEHICLE TRIPS PER PEAK HOUR
The locality and/or the applicant *shall* request a scope of work meeting be conducted with VDOT to discuss the preparation of the VDOT or local traffic impact analysis. Once contacted, **VDOT will reply** to the locality and the applicant, if applicable, **within 30 days of such contact to schedule a meeting date that is no more than 60 days from such contact**, time and location (see pages 28 and 59 on the Scope of Work Meeting).

At the meeting, the locality, applicant and VDOT will review the elements, methodology and assumptions to be used in the analysis, and identify any related local requirements.

The limits of the study area need to be defined at the scope of work meeting. The study's geographic scope may be reduced or enlarged, as determined by VDOT in consultation with the locality and applicant, based upon the:

- Layout of the local transportation network,
- Geographical size of the development, and
- Traffic volume on the existing network.

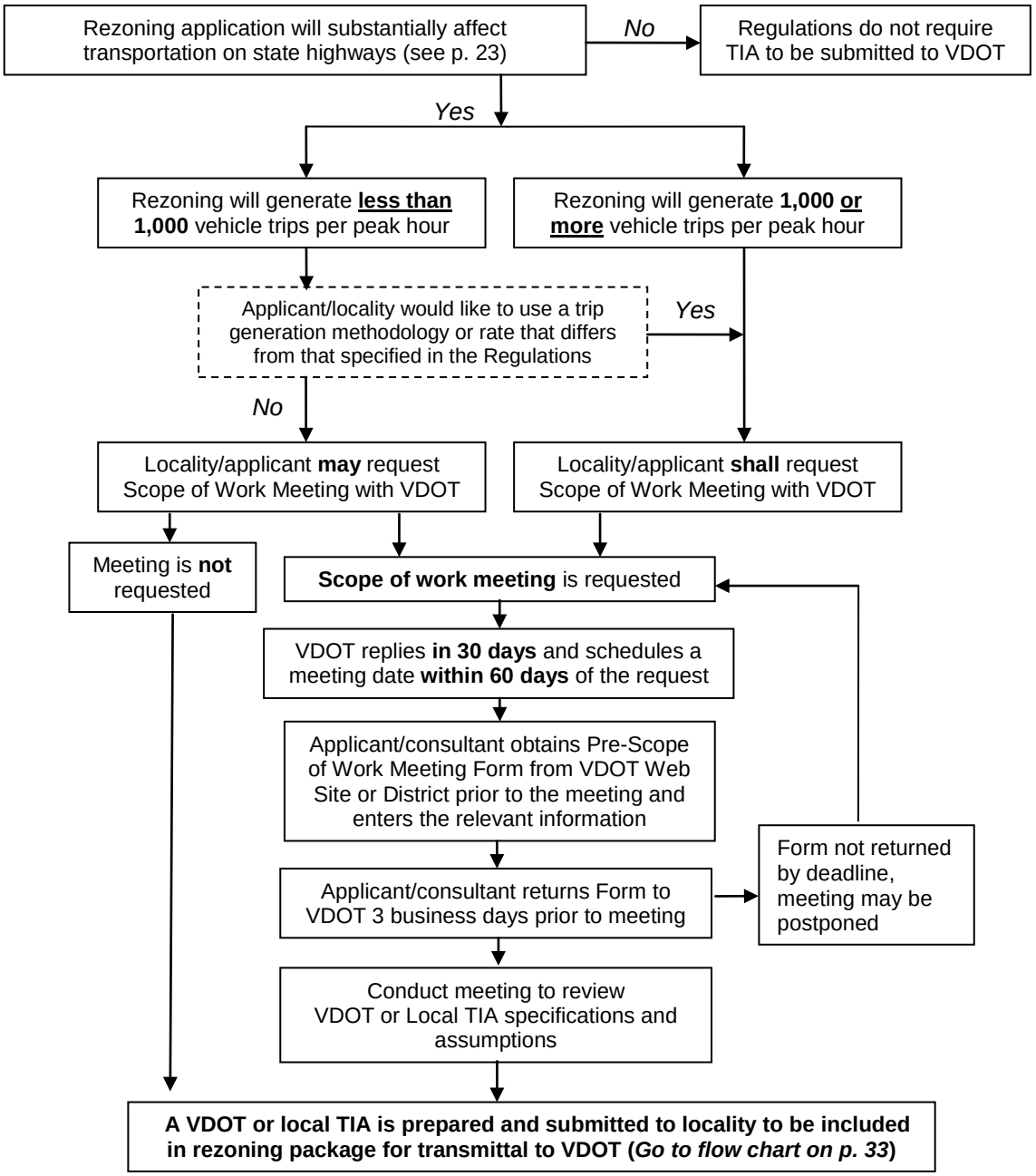
The study area should include any roadway that will experience a detrimental impact on traffic conditions (level of service) due to the additional trips generated by proposed development.

The applicant's assumptions and expectations must be thoroughly discussed at the meeting so everyone leaves with a clear understanding of the overall parameters of the traffic impact analysis to be prepared and the deadlines for completion.

It is important to note that **the conclusions from the scope of work meeting should not be considered "a contract"**. As the VDOT or local TIA is being prepared, it may be necessary to revise various details of the TIA that were discussed at the meeting. To assure flexibility in the development of the TIA, the results of the initial scoping meeting may be adjusted if agreed upon by VDOT, the locality and applicant, if applicable.

Finally, the VDOT or local TIA submittal should identify the specifications of the study agreed to at the scope of work meeting and any adjustments approved during the course of the study.

FLOWCHART: PREPARING A VDOT TRAFFIC IMPACT ANALYSIS (TIA)



Forms: Scope of Work Meeting & Traffic Impact Analysis Preparation

The Appendix (page 79) contains several checklists and forms that can be used to make sure that all aspects of the proposed development are discussed. These **forms and checklists are posted** on the VDOT Traffic Impact Analysis Regulations web site. They are available in an MS Word editable format so answers can be typed on the form or checklist. The District offices may also have them available.

PRE-SCOPE OF WORK MEETING FORM. The applicant completes this form and submits it to the VDOT District at least 3 business days prior to the scheduled meeting date. It used to collect background information on the applicant's project and the initial traffic impact analysis assumptions proposed by the applicant or their designee.

It is important for the applicant to provide sufficient information to the locality and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting. This will allow VDOT to become familiar with the proposal and the traffic analysis information that will be needed prior to the meeting.

SCOPE OF WORK MEETING CHECKLISTS AND FORMS **(For use at the meeting)**:

1. CHECKLIST: REQUIRED ELEMENTS OF A VDOT TRAFFIC IMPACT ANALYSIS. This checklist is used to organize the discussion at the scope of work meeting about VDOT's expectation on what should be included in the traffic impact analysis study and how it should be organized. The form is handed out at the scope of work meeting to make sure that the traffic impact analysis meets the regulations' specifications.

2. CHECKLIST: REQUIRED ELEMENTS OF A LOW VOLUME ROAD VDOT TIA. Used to organize the discussion at the scope of work meeting about the elements to be included in the traffic impact analysis for a proposed rezoning for a residential development with relatively low trip generation characteristics (see page 26).

3. MEETING CONCLUSIONS: ADDITIONS/CHANGES TO THE ELEMENTS, METHODOLOGY, ASSUMPTIONS; SIGNATURE PAGE. Based on the scope of work meeting discussion, any additions to the VDOT required elements and changes to the methodology or standard assumptions approved by VDOT are listed on this form.

   It needs to be signed by the applicant or their designee, a local government representative, and a VDOT representative.

VDOT EVALUATION OF THE SUBMITTAL CHECKLISTS. There are two checklists: one for a VDOT TIA study and one for a Low Volume Road TIA study.

VDOT review staff can use these forms to determine if the traffic impact analysis submitted by the applicant complies with the required elements and methodology specified in the regulations as well as any changes that were approved at the scope of work meeting.

The Locality's Rezoning Package Submittal

24VAC30-155-40.B. (page 37) presents the information to be included in the rezoning package that the locality sends to VDOT. **One paper copy and one electronic copy** are required.

Localities shall **send the rezoning package to the Area Land Use Engineer** in the District.

The rezoning package information is summarized in a checklist format on page 35 for use by localities and VDOT. The locality needs to make sure that the rezoning package is substantially complete (includes a traffic impact analysis study): either a local traffic impact statement or, if the local requirements for traffic statements have not been certified by VDOT, a VDOT traffic impact statement (see page 41 in the Traffic Impact Analysis chapter)**.**

It is recommended that the locality include the rezoning package checklist (page 35) with their rezoning application forms so that the locality's application is complete when all of the items on the checklist have been submitted to the locality.

The Rezoning Package Review Process 24VAC30-155-40.D.

The Area Land Use Engineer in the District will coordinate the review of the submittal with the appropriate sections within the District Office. The District Transportation and Land Use Director will supervise the review to assure the deadline is met (see the VDOT Administration of the Regulations chapter, page 66).

EXAMINE REZONING PACKAGE. Upon receipt of the rezoning package VDOT will evaluate it for substantial compliance with the Regulation's submittal requirements. The timeline for VDOT's review begins: **either a 45 day or 120 day** deadline.

45 DAY REVIEW DEADLINE. If VDOT determines that the rezoning package is complete (a Checklist is on page 35) and no revisions are necessary such that no meeting with the locality/applicant is needed to discuss the submission, VDOT shall provide written comments to the locality and rezoning applicant on the rezoning traffic impact analysis within **45 days of receipt** of the package (see Written Comments on page 34).

120 DAY REVIEW DEADLINE. VDOT's evaluation of the rezoning package (including the TIA study) may lead to **the need for a meeting** between the VDOT review staff, the local government staff, and rezoning applicant to discuss (i) an incomplete submittal or that the TIA study (ii) fails to document the expected impacts of the proposal and/or (iii) has not been prepared in accordance with best professional practice.

- VDOT's meeting request must be made within **45 days** of VDOT's receipt of the package and the meeting held within **60 days** of receipt.
- At the meeting, modifications to the rezoning traffic impact analysis to address any concerns or deficiencies and any missing submittal items will be discussed.
- VDOT may also send to the rezoning applicant a written list of the modifications necessary to resolve deficiencies or concerns.
- If the issues are not adequately addressed within **30 days** of the meeting or sending the written list, VDOT may require resubmission.

- Within **120 days of receipt** of the rezoning package, VDOT must provide:
  - Written comments to the locality and rezoning applicant on why the package and TIA study need to be formally resubmitted and the necessary revisions, **or**
  - Official written comments on key findings of the TIA study and transportation improvements recommended to mitigate any potential impacts caused by the development on state highways (see below and page 34 about Written Comments).

VDOT'S OFFICIAL WRITTEN COMMENTS ON THE REZONING TRAFFIC IMPACT ANALYSIS. The District's comments on the proposed rezoning shall be based upon the comprehensive plan, regulations and guidelines of the Department, engineering and design considerations, adopted regional or statewide plans, and short and long term traffic impacts on and off site.

The District Transportation and Land Use Director will submit VDOT's official comments on the rezoning traffic impact analysis to the locality. *The comments include*:

- A transmittal letter (a sample letter is presented at the end of this document) and
- A written report (see page 34) containing the results of VDOT's evaluation of the traffic impact analysis prepared for the rezoning proposal.
- A copy of the traffic impact analysis study will be attached to the comments.

NOTE: Key findings in the written report may be included within the body of the letter.

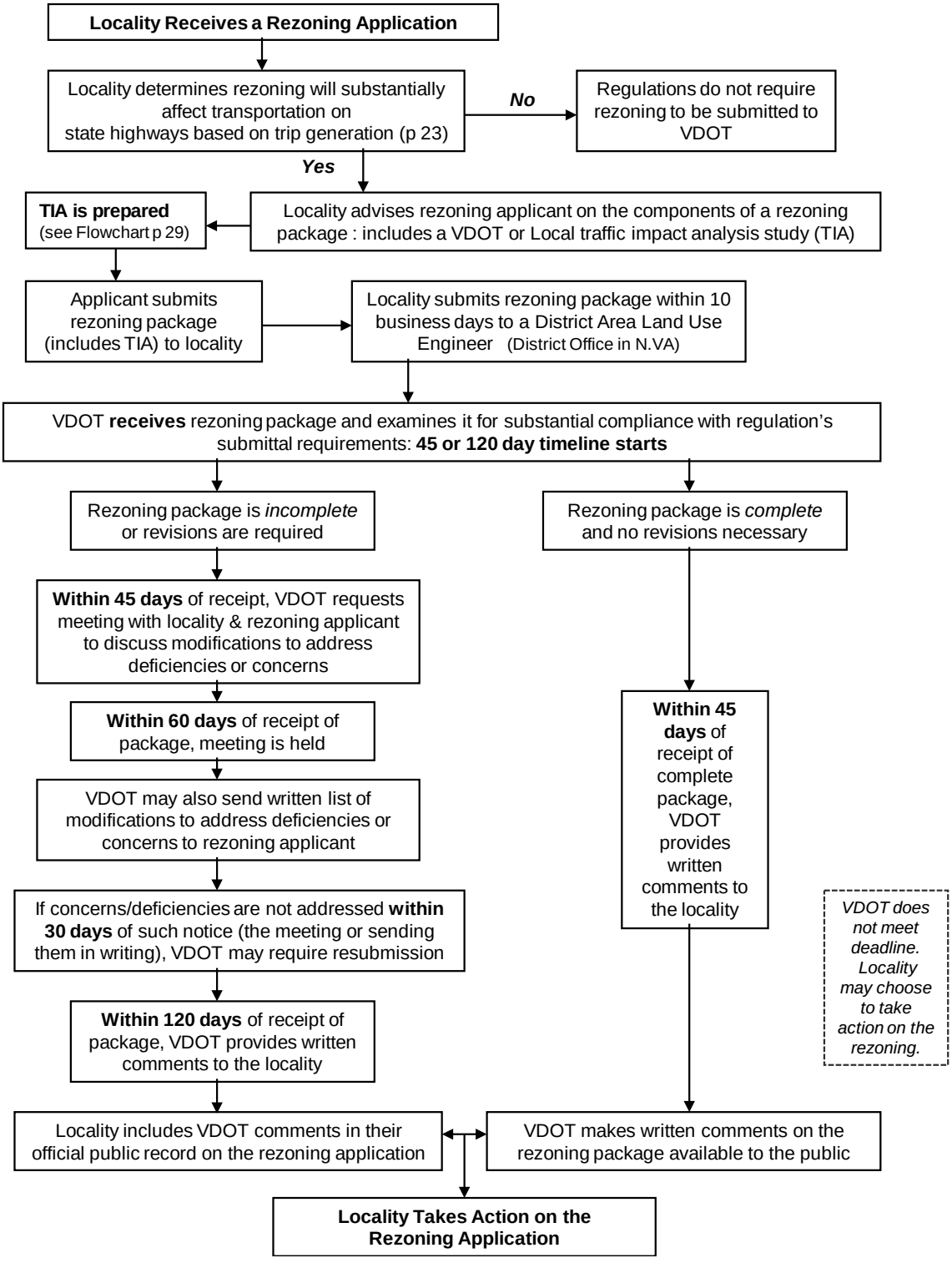
LOCALITY MAY TAKE ACTION IF DEADLINES ARE NOT MET. If VDOT's official comments are not received within the above deadlines, the locality may choose to take action on the rezoning application. Again, the intent of the regulations is that VDOT's review does not lengthen the local rezoning process.

LOCALITY TO INCLUDE VDOT'S COMMENTS IN THEIR OFFICIAL RECORD. The regulations (24VAC30-155-40.C, page 37) specify that the local government include VDOT's official comments in the locality's official public record on the rezoning application.

- The local government can do so by placing VDOT's official comments (transmittal letter and written report) and the traffic impact study in the rezoning case file and by referencing this information in the locality's staff report on the rezoning proposal.
- The report's key findings and comments also should be included in the minutes of the Planning Commission and the governing body's public hearings on the rezoning.

VDOT TO MAKE OFFICIAL COMMENTS AVAILABLE TO THE PUBLIC. VDOT must make its written comments available to the public. This can be accomplished by posting them on external LandTrack on the VDOT web site (see page 77), providing a copy for public review at the locality's planning office, and/or making a presentation to the locality at a public meeting.

THE BASIC REZONING PACKAGE REVIEW PROCESS



Written Report and Official Comments on the Rezoning Traffic Impact Analysis

VDOT's written report will summarize the key findings of the traffic impact analysis study. The report shall include comments on the accuracy of the methodologies, assumptions and conclusions presented in the traffic impact analysis.

The report may offer comments concerning transportation improvements that are recommended in the traffic impact analysis to mitigate any potential impacts caused by the proposed development on state highways and may offer additional recommendations to address such impacts.

The VDOT's Access Management Regulations, 24VAC30-72-120 & -73-120, require VDOT to include comments as part of the TIA review on the development's compliance with the access management requirements such as: the spacing (separation) of entrances, intersections and traffic signals; vehicular/pedestrian circulation between adjoining properties; sharing of entrances; and limiting entrance turning movements.

VDOT will advise the locality and the developer about other VDOT regulations that may apply as the development moves through other stages of the land development process and what changes may be needed to assure compliance.

Streets within the development that are planned for state maintenance will need to meet the Secondary Street Acceptance Requirements, including street connectivity rules and the Subdivision Street Design Guidelines, Appendix B1 in the Road Design Manual. The Land Use Permit Regulations apply to any work in the right-of-way including utilities, drainage, etc.

The above regulations and standards can be found on VDOT's web site under "Transportation and Land Use."

Finally, if other travel modes such as bicycle, pedestrian, railway, and transit facilities either exist, are planned, or have a significant potential for use in the vicinity of the proposed development, VDOT's report must provide recommendations for improvements that will facilitate their use. The locality's transportation plan may provide guidance in this regard.

It is important to remember that VDOT's report on rezoning traffic impact studies will help localities take advantage of the opportunities available during the rezoning process to resolve transportation issues that are not available later in the land development process.

Rezoning Package Checklist*

Traffic Impact Analysis Regulations: 24VAC30-155-40.B

- ☐ **A COVER SHEET** containing:
  - ☐ **Contact Information** for the
    - ☐ Locality,
    - ☐ Developer (or owner), if applicable;
  - ☐ **Site Information**
    - ☐ Rezoning location,
    - ☐ Highways adjacent to the site,
    - ☐ Parcel number or numbers;
  - ☐ **Proposal Summary** with the
    - ☐ Development's name,
    - ☐ Size (acreage),
    - ☐ Proposed zoning;
    - ☐ Proposed types of land uses, including maximum number of lots or maximum business square feet, and
  - ☐ **A Statement** regarding the proposal's compliance with the comprehensive plan.
- ☐ **A LOCAL TRAFFIC IMPACT ANALYSIS OR,** IF LOCAL REQUIREMENTS FOR TRAFFIC STUDIES HAVE NOT BEEN CERTIFIED BY VDOT**, A VDOT TRAFFIC IMPACT STATEMENT**.
- ☐ **A CONCEPT PLAN** of the proposed development.
- ☐ **ANY PROFFERED CONDITIONS** submitted by the applicant.
- ☐ **FEES** -
  - ☐ **For a locality or other public agency initiated proposal** – No fee charged.
  - ☐ **For the initial or second review** of a rezoning proposal, a single fee for both reviews will be determined by the number of vehicle trips generated per peak hour, as follows:
    - ☐ Low Volume Road (24VAC30-155-40 A 1 c). - $250
    - ☐ All other submissions - $1,000
  - ☐ **For a third or subsequent submission** of a rezoning proposal that is requested by VDOT on the basis of the failure of the applicant to address deficiencies previously identified by VDOT, the fee is equal to the initial fee paid.

* One paper copy and one electronic copy to be submitted.

This checklist is available on the VDOT Traffic Impact Analysis Regulations website in a MS Word editable format.

Small Area Plan Rezoning Package Checklist*

Traffic Impact Analysis Regulations: 24VAC30-155-40.C

☐ **A COVER SHEET** containing:

- ☐ **Contact Information** for the
  - ☐ Locality,
  - ☐ Developer (or owner), if applicable;
- ☐ **Site Information**
  - ☐ Rezoning location,
  - ☐ Highways adjacent to the site,
  - ☐ Parcel number or numbers;
- ☐ **Proposal Summary** with the
  - ☐ Development's name,
  - ☐ Size (acreage),
  - ☐ Proposed zoning, and
  - ☐ Proposed types of land uses, including maximum number of lots or maximum business square feet.

☐ **A VDOT TRAFFIC IMPACT ANALYSIS STUDY** prepared according to 24VAC30-155-60.

☐ **A LETTER THAT INCLUDES STATEMENTS CERTIFYING THAT:**

- ☐ **The assumptions** made in the traffic impact study prepared for the small area plan remain generally valid;
- ☐ **The rezoning proposal is in substantial conformance** with the adopted small area plan. (A rezoning can have a deviation in density of 10 percent or less and remain in substantial conformance with the small area plan.);
- ☐ **The character and volume of the trip generation** by the proposed uses are similar to those proposed by the small area plan; **and**
- ☐ **All other assumptions** made in the traffic impact study prepared for the small area plan remain generally valid.

☐ **ANY PROFFERED CONDITIONS** submitted by the applicant.

☐ **FEES** - None

* One paper copy and one electronic copy are to be submitted.

This checklist is available on the VDOT Traffic Impact Analysis Regulations website in a MS Word editable format.

REGULATIONS

24VAC30-155-40. Rezoning.

A. Proposal submittal. The locality shall submit a package to VDOT within 10 business days of receipt of a complete application for a rezoning proposal if the proposal substantially affects transportation on state-controlled highways. All trip generation calculations used for the purposes of determining if a proposal meets the criteria shall be based upon the rates or equations published in the Institute of Transportation Engineers Trip Generation, 8th Edition, 2008, and shall not be reduced through internal capture rates. For redevelopment sites, trips currently generated by existing development that will be removed may be deducted from the total site trips that are generated by the proposed land use. However, no submission shall be required under this section if the rezoning proposal consists of no changes in allowable land use. Furthermore, no submission shall be required if the rezoning proposal results in lower maximum daily trip generation and no increase in maximum trip generation for AM Peak Hour of the adjacent street, PM Peak Hour of the adjacent street, and Weekend Peak Hour when compared to the hourly trip generation of land uses allowed by right under the current zoning, excepting governmental uses such as schools and libraries.

For the purposes of this section, a rezoning proposal shall substantially affect transportation on state-controlled highways if it meets or exceeds one or more of the following trip generation criteria.

1. Within a jurisdiction in which VDOT has maintenance responsibility for the secondary highway system, if the proposal generates more than 5,000 vehicle trips per day at the site's connection to a state-controlled highway. For a site that does not have an entrance onto a state-controlled highway, the site's connection is assumed to be wherever the road network that the site connects with attaches to a state-controlled highway. In cases where the site has multiple entrances to highways, volumes on all entrances shall be combined for the purposes of this determination; or

2. Within a jurisdiction in which VDOT does not have maintenance responsibility for the local highway system, if the proposal generates more than 5,000 vehicle trips per day and whose nearest property line is within 3,000 feet, measured along public roads or streets, of a connection to a state-controlled highway; or

3. The proposal for residential rezoning generates more than 400 daily vehicle trips on a state-controlled highway, and, once the site generated trips are distributed to the receiving highway, the proposal's vehicle trips on the highway exceed the daily traffic volume such highway presently carries. For the purposes of determining whether a proposal must be submitted to VDOT, the traffic carried on the state-controlled highway shall be assumed to be the most recently published amount measured in the last traffic count conducted by VDOT or the locality on that highway. In cases where the site has access to multiple highways, each receiving highway shall be evaluated individually for the purposes of this determination.

B. Required proposal elements. The package submitted by the locality to VDOT shall contain sufficient information and data so that VDOT may determine the location of the rezoning, its size, its effect on state-controlled highways, and methodology and assumptions used in the analysis of the effect. Submittal of an incomplete package shall be considered deficient in meeting the submission requirements of § 15.2-2222.1 of the Code of Virginia and shall be returned to the locality and the applicant, if applicable, identifying the deficiencies noted. A package submitted to VDOT shall consist of one paper copy and one electronic copy and include the following items:

1. A cover sheet containing:
   a. Contact information for locality and developer (or owner), if applicable;
   b. Rezoning location, highways adjacent to site, and parcel number or numbers;
   c. Proposal summary with development name, size, and proposed zoning; and
   d. A statement regarding the proposal's compliance with the comprehensive plan.

2. A local traffic impact statement or, if the local requirements for traffic statements contained in ordinances or policies have not been certified by VDOT, a VDOT traffic impact statement.

3. A concept plan of the proposed development.

C. Rezoning proposals associated with small area plans.

1. A traffic impact statement prepared for a small area plan pursuant to 24VAC30-155-30 C, or initiated for a small area plan at the request of a locality prior to February 4, 2010, and that contains substantially the same elements as those of a VDOT traffic impact statement, shall serve as the traffic impact statement required pursuant to this section for any rezoning proposals developed in furtherance of the adopted small area plan and related comprehensive plan amendments provided the following:

a. That the small area plan package is accompanied by a cover letter that includes a statement that the assumptions made in the traffic impact statement prepared for the small area plan remain generally valid.

b. That the following are accurate:

(1) The rezoning proposal is in substantial conformance with the adopted small area plan. A deviation in density must be greater than 10% to be considered no longer in substantial conformance with the adopted small area plan.

(2) The character and volume of the trip generation by the proposed uses are similar to those proposed by the small area plan.

(3) All other assumptions made in the traffic impact statement prepared for the small area plan remain generally valid.

2. In instances where the assumptions made in the traffic impact statement prepared for the small area plan are no longer valid, the traffic impact statement may be updated. If the traffic impact statement is updated, it shall serve as the traffic impact statement required pursuant to this section for any rezoning proposals developed in furtherance of the adopted small area plan and related comprehensive plan amendments.

D. Review process. After formal submission of a rezoning proposal for review, VDOT may, pursuant to § 15.2-2222.1 of the Code of Virginia, request a meeting with the locality and rezoning applicant to discuss potential modifications to the proposal to address any concerns or deficiencies. The request must be made within 45 days of receipt by VDOT of the proposal. VDOT must provide written comments to the locality and the rezoning applicant within 45 days of VDOT's receipt of the proposal if no meeting is scheduled or has been requested or within 120 days of the receipt of the proposal otherwise. VDOT shall not reject or require resubmission, if the package has been prepared in accordance with best professional practice and substantially documents the expected impacts of the proposal. If VDOT determines that (i) the package has not been prepared in accordance with best professional practice, (ii) the package fails to substantially document the expected impacts of the proposal, or (iii) the submission is substantially incomplete, VDOT may request of the applicant, in writing or at the above mentioned meeting, modifications to address concerns. If the concerns are not adequately addressed within 30 days of the transmission of such concerns, VDOT may require resubmission. VDOT shall conduct its review and provide official comments to the locality for inclusion in the official public record. The Department's comments on the proposed rezoning shall be based upon the comprehensive plan, regulations and guidelines of the Department, engineering and design considerations, adopted regional or statewide plans, and short and long term traffic impacts on and off site. VDOT shall also make such comments available to the public. Nothing in this section shall prohibit a locality from acting on a rezoning proposal if VDOT's comments on the submission have not been received within the timelines in this section.

24VAC30-155-70. Departmental analysis.

After concluding its review of a proposed comprehensive plan or transportation plan or plan amendment, or **rezoning**, VDOT shall provide the locality and applicant, if applicable, with a written report detailing its analysis and when appropriate recommending transportation improvements to mitigate any potential adverse impacts on state-controlled highways. VDOT shall provide recommendations for facilitating other modes of transportation including but not limited to transit, bus, bicycle and pedestrian facilities or accommodations where such facilities or accommodations are planned or exist, or where such facilities have a significant potential for use. In addition, VDOT shall provide the locality and the applicant, if applicable, with preliminary recommendations regarding compliance with other VDOT regulations such as the Secondary Street Acceptance Requirements (24VAC30-92), the Access Management Regulations: Principal Arterials (24VAC30-72), and the Access Management Regulations: Minor Arterials, Collectors, and Local Streets (24VAC30-73).

TRAFFIC IMPACT ANALYSIS

Introduction

The impact of a proposed development on transportation system performance, whether it is small or large, depends on the number of trips generated by the proposed development, the location of the connection(s) to the transportation system, and the routes taken to and from the site.

This impact is quantified by preparing a traffic impact analysis study, called a traffic impact statement in the regulations and defined in the Definitions section 24VAC30-155-10 as "the document prepared in accordance with best professional practice and standards that assess the impact of a proposed development on the transportation system and recommends improvements to lessen or negate those impacts."

Traffic impact analyses involve the evaluation of anticipated roadway conditions with and without the proposed development and recommend transportation improvements to offset both the impacts of the increase in future traffic volumes and the changes in traffic operations due to the development. The traffic impact analysis assists public officials and developers to balance the interrelationships between efficient traffic movements with necessary land access.

The complexities of a traffic impact analysis vary and depend upon the complexity of the proposed development, trip generation of the proposal, and the existing and future transportation network.

VDOT Regulations Involving Traffic Analysis

It is important to differentiate between the Traffic Impact Analysis Regulation's traffic impact statement (traffic impact analysis) and entrance permit traffic analysis specified in the 24VAC30-71-72 Access Management Regulations: Principal Arterials and 24VAC30-71-73: Minor Arterials, Collectors, and Local Streets (the "Access Management Regulations").

The *Traffic Impact Analysis Regulations* provide rules and procedures for VDOT to evaluate traffic impact analyses for rezoning proposals that will substantially affect state-controlled highways (see the **Table** on page 24).

The traffic impact analysis study along with VDOT transportation related comments or recommendations will provide localities with reasonably accurate and reliable information that they can use to evaluate how rezoning proposals will affect the efficient operation of and public safety on state highways. By preparing a traffic impact analysis early in the local land development review process, when the rezoning proposal can be modified, any adverse impacts on the transportation network will be known early in the planning for a project.

On the other hand, the *Access Management Regulations* may require a detailed traffic analysis to be provided with an entrance permit application in order to document the effect of the proposed entrance and its related traffic on the operation of the highway to be accessed. Generally, the developer will file for the permit when ready to proceed with the construction of the development.

VDOT may require the applicant to prepare a traffic analysis to demonstrate a specific Level of Service for roadway segments and intersections along a site's frontage or to address a specific

operational concern. The goal is to make sure the proposed entrance does not cause undue interference with traffic movements, disruption to the fronting road, or cause safety problems. Improvements to mitigate such conditions may be required by VDOT as a condition of the permit.

It is important to point out that a traffic analysis may be required by VDOT to review and approve an entrance permit even if a traffic impact analysis was not required under the TIA Regulations and there also will be cases where a study was submitted under the Regulations but additional traffic analysis is necessary to approve an entrance permit. For example, specific entrance locations and their design (radii, turn lane lengths, etc.) may not be known during the rezoning but will need to be addressed prior to the issuance of an entrance permit.

There will be cases, though, in which the *TIA Regulations* traffic impact analysis information is sufficiently detailed and up-to-date so that it also can be used for the traffic analysis needed for the issuance of an entrance permit pursuant to the *Access Management Regulations*.

Preparers and reviewers of traffic impact analyses should keep in mind that the data generated can be used to meet other needs that go beyond traditional transportation concerns. For example, traffic volume, composition, and speed information can be utilized in making recommendations regarding the placement and design of sound barriers.

Submittal of a Local Traffic Impact Statement

The regulations now allow the submittal of a **VDOT certified local traffic impact statement** as part of the rezoning package required by the Regulations. A local traffic impact statement (traffic impact analysis study) is defined in the Definitions chapter on page 5 as

> A traffic impact statement accepted or prepared by a locality pursuant to its land development approval process and whose requirements regarding content are set out in the locality's ordinances or published policies, if such ordinances or policies have been reviewed and certified by VDOT as requiring acceptable standards of preparation and providing sufficient information to determine the current and future impacts of development proposals.

An applicant for a rezoning under the TIA Regulations can submit a traffic impact analysis study prepared according to locality requirements that are certified by VDOT. A developer, then, will not have to prepare a study that meets the requirements of the Regulations (a VDOT study) and one required by a locality. Once certified by VDOT, the local study can serve both purposes.

Local government staff can submit their traffic impact analysis requirements to the District Transportation and Land Use Director to determine if it meets VDOT's certification standards. Basic criteria for the local requirements include: (i) they are in writing, (ii) are either within a local ordinance or are published - such as on the local government web site, and (iii) will produce a study that provides sufficient information to determine the current and future impact of the rezoning proposal.

A rezoning applicant can check with a District's Area Land Use Engineer to see if a local or VDOT traffic impact statement needs to be submitted under the Regulations. If the locality has not established written traffic impact study criteria or they have not been certified by VDOT, then the study will be prepared according to the methodology and assumptions in the Regulations, as described later in this Chapter.

Overview of the Requirements/Procedures for Preparing a VDOT Traffic Impact Analysis

The Traffic Impact Analysis Regulations were developed to ensure that reliable and accurate information is made available to local decision makers and citizens. Traffic impact analysis findings can be used by citizens, the Planning Department, Planning Commission, and governing body during the decision-making process regarding rezoning proposals.

The regulations also provide the developer/applicant with a standard framework of assumptions, methodologies and scope of review for VDOT traffic impact analyses. 24VAC30-155-60 on p. 59 states that a VDOT traffic impact statement for a rezoning:

> assesses the impact of a proposed development on the transportation system and recommends improvements to lessen or negate those impacts. It shall (i) identify any traffic issues associated with access from the site to the existing transportation network, (ii) outline solutions to potential problems, (iii) address the sufficiency of the future transportation network, and (iv) present improvements to be incorporated into the proposed development.

The rezoning applicant is responsible for the assessment of the traffic impacts associated with a proposed development. The applicant is also responsible for all data collection efforts to prepare a traffic impact analysis. The local jurisdiction and VDOT serve in a review capacity.

The regulations establish the *Required Elements* (p. 46) to be included in a VDOT traffic impact analysis study (the components of the study, e.g. background information, analysis of existing conditions,) and the *Methodology and Standard Assumptions* (summarized on p. 51) for conducting the analysis (e.g. data collection, use of rates/equations for trip generation, level of service calculation). VDOT may approve changes to the methodology/standard assumptions based on discussion at a scope of work meeting when sufficient evidence is offered to justify the change.

Additional elements such as a speed study or crash history data near the site may be needed in the traffic impact analysis depending on the characteristics of a development's site. Special criteria for a "low volume road submission" are discussed in the section below.

Upon receipt of a VDOT or local traffic impact analysis for a rezoning application, VDOT will evaluate the methodologies, assumptions and conclusions of the study. VDOT will then provide the locality with a written report that:

- will summarize the key findings of the traffic impact analysis study,
- will offer comments on its accuracy,
- may include comments concerning transportation improvements that are recommended to mitigate potential impacts to state highways caused by the proposed development.

If VDOT determines the VDOT or local traffic impact statement:

- has not been prepared in accordance with best professional practice,
- fails to substantially document the expected impacts of the proposal, or
- is substantially incomplete

VDOT may request the applicant to make modifications to it to address concerns. **If the concerns are not adequately addressed within 30 days**, VDOT may require its resubmission and return it to the locality and the applicant with the deficiencies identified (see pages 31, 32, and 24VAC30-155-40 D on page 37). **Please note** that this means that VDOT must provide its comments on such inadequate studies **more than 30 days** prior to the statutory deadline for VDOT comments.

Alternative Trip Generation Methodology for Mixed Use Development

VDOT has selected an alternative non-ITE trip generation methodology that is automatically approved by VDOT for use when a local government conducts a single traffic impact analysis for all parcels within a small area plan adopted as part of their comprehensive plan. This traffic impact analysis study can then be used for a rezoning proposed for a parcel located within the boundaries of the small area plan (see the Comprehensive Plan, Rezoning chapters).

It can also be applied when analyzing the trip generation for a mixed use development rezoning proposal when approved by VDOT at a scope of work meeting.

The alternate methodology or rate can be modified based upon local factors, if agreed to at a scope of work meeting (see the Scope of Work section, Rezoning Chapter on page 28).

The methodology, Mixed Use Trip Generation Model V 4.0, considers the trip reduction for mixed use development. It was developed by the San Diego Association of Governments (SANDAG), Fehr & Peers (consultants), and the U.S. EPA. The spreadsheet-based trip generation and reduction tool is well documented on the first page of the first sheet of the workbook and throughout the input sheet. The spreadsheet is available at on the TIA Regulations web site.

The U.S. EPA web site http://www.epa.gov/smartgrowth/mxd_tripgeneration.html offers background information and a variety of resources on mixed use development and its trip generation. A report on the development of the Mixed Use Trip Generation Model is presented at http://www.sandag.org/uploads/publicationid/publicationid_1500_11604.pdf

Low Volume Road Submission

The expectations for a VDOT traffic impact analysis study can be reduced for a proposed rezoning for a residential development with relatively low trip generation characteristics (more than 400 vehicle trips per day) and once the site generated trips are distributed to the receiving highway, the proposal's vehicle trips exceed the daily traffic volume that the highway presently carries – a "low volume road submission" (24VAC30-155-40 A.1.c, pp. 26 and 37).

Such uses generally do not produce sufficient traffic to create traffic congestion problems and do not affect the highway network for a significant distance from the site. Instead the focus of the analysis is on the road fronting the development and the nearest intersection and how the proposed development can be accommodated to assure the safe operation of the highway.

The VDOT traffic impact analysis, therefore, can be less complicated. As a result**,** *the VDOT traffic impact analysis study for such submissions will only need to address the following elements* rather than everything in the "Required Elements" table on page 45:

- The elements contained in the Background Information portion of the Required Elements table, except the geographic scope/limits of the study area is limited to the highway fronting the proposed development and the closest intersection with a highway that has an average daily traffic volume higher than the fronting highway.

- A safety inventory study of the roadway segment(s) between the site entrance to the nearest intersections with the higher traffic volume highways, to include such elements as:
  - Speed limit
  - Pavement and shoulder type
  - Intersection sight distances
  - Safe horizontal curve speeds
  - Distances to nearby existing entrances
  - Existing warning signs
  - Pavement and shoulder width
  - Horizontal and vertical alignments
  - Sight distance
  - Crash history in proximity to the site
- Daily & peak hour traffic volumes presented on diagrams, with counts in an appendix:
  - For the fronting highway at the site,
  - At the highway's intersections with the higher volume highway, and
  - For the higher volume highways at their intersection with the fronting highway.
- All relevant elements in the Trip Generation portion of the Required Elements table.
- Projected daily and peak hour of the generator traffic volumes assuming build-out of the proposal, presented on diagrams for the receiving highway:
  - At the site,
  - At the highway's intersection with the higher volume highways, and
  - For the higher volume highways at their intersections with the receiving highway.
- Delay and level of service analysis for the intersections of the receiving highway with the higher volume highways.
- A comparison of the existing geometrics of the fronting highway under proposed build-out traffic conditions with the geometric standards, based upon functional classification and volume, contained in VDOT's Road Design Manual.

Rezoning Consistent with Locality's Comprehensive Plan

§15.2-2222.1(B) of the Code was amended in 2011 to require **VDOT's review of a rezoning proposal to be more limited in scope** if the rezoning is consistent with a locality's comprehensive plan that has been previously reviewed pursuant to the regulations. The regulations were changed effective December 31, 2011 to reduce the scope of traffic impact analysis study criteria for such rezoning proposals.

In this case, a VDOT traffic impact statement may be prepared in accordance with the "Less than 500 Site Generated Peak Hour Trips" category in the "Required Elements" table on page 45, regardless of actual projected trip generation, provided that:

- The rezoning proposal is in conformance with a locality's adopted comprehensive plan that was reviewed in accordance with 24VAC30-155-30; and
- The review of the comprehensive plan included the submission to VDOT of a technical evaluation of the traffic impacts for anticipated development based on the future land use policies and map.

Overview of the Required Elements of a VDOT Traffic Impact Analysis

A VDOT traffic impact analysis shall include at a minimum the elements shown in the Required Elements table presented on the next page with the data and analysis organized and presented in a manner acceptable to VDOT. This table is included in the regulations: 24VAC30-155-60.C.

However, the required elements and scope of a VDOT traffic impact analysis are dependent upon the scale and potential impact of the specific development proposal as determined by VDOT in its sole discretion.

For example, under "Analysis of Existing Conditions", the characteristics of a site may lead VDOT to request that a speed study be conducted, or sight distance or crash history information be provided in the traffic impact analysis.

VDOT staff also has the discretion to add to or change the order of the elements as presented in the required elements table; provided that the analysis includes the information specified in the table. For example:

- Additional analyses may be necessary for queuing, weaving, or sight distance.
- The "Background Information" portion of the analysis also could identify the existing access to the site including any stub roads or other opportunities for inter-parcel connection.
- The "Analysis of Future Conditions with Development" element requirement to forecast daily and peak hour of the generator traffic volumes on the highway network could be expanded to apply to each lane group.
- When the type of development indicates a significant potential for walking, bike or transit trips on or off site, the VDOT traffic impact analysis shall estimate multimodal trips.

The site generated peak hour trips in the Required Elements table **shall be based upon the gross vehicle trip generation of the site, less internal capture and mode split reductions**, **if applicable**. All distances in the table are measured along roads or streets.

REQUIRED ELEMENTS OF A TRAFFIC IMPACT ANALYSIS
24VAC30-155-60. C. 1. (excluding the footnotes)

Item	Site Generated Peak Hour Trips		
	Less than 500	500 to 999	1,000 or more
Background Information			
List of all non-existent transportation improvements assumed in the analysis	Required	Required	Required
Map of site location, description of the parcel, general terrain features, and location within the jurisdiction and region.	Required	Required	Required
Description of geographic scope / limits of study area.	Within 2,000 feet of site and any roadway on which 50 or more of the new peak hour vehicle trips generated by the proposal are distributed - not to exceed one mile.	Within 2,000 feet of site and any roadway on which 10% or more of the new vehicle trips generated by the proposal are distributed – not to exceed two miles.	To be determined by VDOT in consultation with the locality
Plan at an engineering scale of the existing and proposed site uses.	Required	Required	Required
Description and map or diagram of nearby uses, including parcel zoning.	Required	Required	Required
Description and map or diagram of existing roadways.	Required	Required	Required
Description and map or diagram of programmed improvements to roadways, intersections, and other transportation facilities within the study area.	Required	Required	Required
Analysis of Existing Conditions			
Collected daily and peak hour of the generator traffic volumes, tabulated and presented on diagrams with counts provided in an appendix.	Required	Required	Required
Analyses for intersections and roadways identified by VDOT. Delay and Level of Service (LOS) are tabulated and LOS is presented on diagrams for each lane group.	Required	Required	Required

Item	Site Generated Peak Hour Trips		
	Less than 500	500 to 999	1,000 or more
When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route or routes and segment or segments, tabulated and presented on diagrams, if facilities or routes exist.	Within 2,000 feet of site	Within 2,000 feet of site	To be determined by VDOT in consultation with the locality ①
Speed Study ②	If requested by VDOT	If requested by VDOT	If requested by VDOT
Crash history near site ③	If requested by VDOT	If requested by VDOT	If requested by VDOT
Sight distance ④	If requested by VDOT	If requested by VDOT	If requested by VDOT
Analysis of Future Conditions Without Development			
Description of and justification for the method and assumptions used to forecast future traffic volumes.	Required	Required	Required
Analyses for intersections and roadways as identified by VDOT. Delay and Level of Service (LOS) are tabulated and LOS is presented on diagrams for each lane group.	Required	Required	Required
When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route or routes and segment or segments tabulated and presented on diagrams, if facilities or routes exist or are planned.	Within 2,000 feet of site	Within 2,000 feet of site	To be determined by VDOT in consultation with the locality at the scope of work meeting ①
Trip Generation			
Site trip generation, with tabulated data, broken out by analysis year for multi-phase developments, and including justification for deviations from ITE rates, if appropriate.	Required	Required	Required

Item	Site Generated Peak Hour Trips		
	Less than 500	500 to 999	1,000 or more
Description and justification of internal capture reductions for mixed use developments and pass-by trip reductions, if appropriate, including table of calculations used.	Required	Required	Required
Site Traffic Distribution and Assignment			
Description of methodology used to distribute trips, with supporting data.	Required	Required	Required
Description of the direction of approach for site generated traffic and diagrams showing the traffic assignment to the road network serving the site for the appropriate time periods.	Required	Required	Required
Analysis of Future Conditions with Development ⑤			
Forecast daily and peak hour of the generator traffic volumes on the highway network in the study area, site entrances and internal roadways, tabulated and presented on diagrams.	Future background + site generated traffic, at each expected phase and at build-out or six years after start, whichever is later.	Future background + site generated traffic, at each expected phase, at build-out, and six years after build-out, which may be extended or reduced by VDOT in consultation with the locality.	At a minimum the future background + site generated traffic, at each expected phase, at build-out, and six years after build-out; may be extended by VDOT in consultation with the locality.
Analyses for intersections and roadways identified by VDOT. Delay and Level of Service (LOS) are tabulated and LOS presented on diagrams for each lane group.	Required	Required	Required
When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route or routes and segment or segments tabulated and presented on diagrams, if facilities or routes exist or are planned.	Within 2,000 feet of site	Within 2,000 feet of site	To be determined by VDOT in consultation with the locality ①

Item	Site Generated Peak Hour Trips		
	Less than 500	500 to 999	1,000 or more
Recommended Improvements			
Description and diagram of the location, nature, and extent of proposed improvements, with preliminary cost estimates as available from VDOT.	Required	Required	Required
Description of methodology used to calculate the effects of travel demand management (TDM) measures, if proposed, with supporting data.	Required if TDM proposed	Required if TDM proposed	Required if TDM proposed
Analyses for all proposed and modified intersections in the study area under the forecast and site traffic. Delay, and Level of Service (LOS) are tabulated and LOS presented on diagrams for each lane group. For intersections expected to be signalized, MUTCD Signal Warrant analysis or ITE Manual for Traffic Signal Design, as determined by VDOT, presented in tabular form.	Required	Required	Required
When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route or routes and segment or segments tabulated and presented on diagrams, if facilities or routes exist or are planned.	Within 2,000 feet of site	Within 2,000 feet of site	To be determined by VDOT in consultation with the locality ①
Conclusions			
Clear, concise description of the study findings.	Required	Required	Required

FOOTNOTES

(The footnotes are not part of the above 24VAC30-155-60.C.1. Regulation)

① Analysis of pedestrian, bicycle, and/or transit facilities should be provided only in instances where such services are present in the area or are planned for the area, or if the development is of a type that can be expected to generate significant trips of the appropriate type. Generally speaking, isolated developments in rural or low density suburban areas will not have a need for pedestrian, bicycle, or transit analysis.

② Speed studies may be necessary when there is reason to believe that operational or geometric conditions on a roadway result in speeds that vary considerably from the posted speed limits. In those situations, they should be requested when entrance construction is expected to occur in the short term (within a few years) and without a complete rebuilding of the roadway at the location of concern, as changes in local conditions can be expected to have an impact on the road's operating speed.

If a speed study is not requested under the TIA regulations, it may still be required at the land use (entrance) permit stage in order to address specific concerns.

③ Crash history data and analysis should be requested if a particular location affected by a development's traffic is suspected to have a higher crash rate than similar locations in the region and the development's traffic may contribute to the problem. Crash history should not be requested if there is a project to address the crash problem already planned and that will be completed by the time the development is expected to be generating traffic.

④ Sight distance information and measurement or calculation is necessary at the land use permit stage of development. Substandard sight distance at locations has resulted in the need for developers to rebuild roadways, conduct extensive grading operations, or relocate planned entrances. Therefore, while generally not necessary at the rezoning stage, providing this information as early in the development process as possible will help the developer avoid unnecessary costs.

⑤ Analysis of Future Conditions with Development. How far into the future projections are required for analysis is based on trip generation. For sites generating less than 500 VPH, at build-out or 6 years after start - whichever is later is used; for 500-999 VPH, 6 years after build-out; for 1000+ VPH, 6 years after build-out, but the time may be extended in consultation with the locality.

The base date for the projection will depend on the type of development. The base date for a commercial development is typically the opening date, which unless phased, is at full build-out on opening date. However, with a residential development the opening date and full build-out can produce very different traffic conditions. Existing conditions are the base, but require analysis of opening, each phase, and build-out.

Summary of the Methodology and Standard Assumptions for a VDOT Traffic Impact Analysis

The methodology and assumptions are grouped into twelve (12) main categories. The 12 categories are summarized below along with certain guidelines for their application. **Regulatory changes** over the last several years **are indicated in bold**.

These categories are described in more detail in the Regulations, 24VAC30-155-60. D. "Methodology and Standard Assumptions" presented at the end of this Chapter (p. 59).

A VDOT traffic impact analysis shall be prepared according to the methodology and assumptions specified in the regulations, or as may be agreed upon by VDOT based upon the results of a scope of work meeting. Changes proposed by the preparer to the methodology and assumptions established by this regulation may be approved by VDOT based on the preparer submitting sufficient evidence to justify the change, e.g. characteristics of a similar project.

A traffic impact statement accepted or prepared by a locality pursuant to its land development approval process and whose requirements regarding content are set out in the locality's ordinances or published policies **can substitute for the VDOT TIA if the local requirements** have been reviewed and certified by VDOT as requiring acceptable standards of preparation and providing sufficient information to determine the current and future impacts of development proposals.

1. DATA COLLECTION.

   Preparers shall collect traffic data in accordance with the identified study area. The count data shall include at a minimum, weekday 24-hour counts, and directional turning movement counts during AM and PM peak times of the day.

   For some land use types, variations from the standard collection times and methodology may be necessary. For example, traffic information for most areas should be collected during "average" months and days (usually in the fall or spring), but when dealing with a development that mostly generates summer trips, summer traffic counts should be used.

   NOTE: AASHTO's A Policy on Geometric Design of Highways requires design for the 30th highest annual hourly vehicle volume, not the average hourly volume.

2. TRIP GENERATION.

   Trip generation estimates for a proposed development shall be prepared using the Institute of Transportation Engineers (ITE) Trip Generation publication unless the VDOT reviewer agrees to the use of alternate trip generation rates based upon alternate published guides or local trip generation studies. Rezoning proposals shall assume the highest vehicle trip generating use allowable under the proposed zoning classification.

   In determining which trip generation process (equation or rate) may be used, the preparer shall follow the guidance in the Trip Generation Handbook – **except rates may be utilized if the criteria for the use of regression equations are not met**. Regression equations to calculate trips as a result of development shall be utilized, provided the following is true:

   a. Independent variable falls within range of data; and

   b. Either the data plot has at least 20 points; or

   c. R2 is greater than 0.75, equation falls within data cluster in plot and standard deviation greater than 110% of weighted average rate.

If the above criteria are not met, then the preparer can use average trip rates, **though if the following do not apply a rate based upon the study of similar local sites should be considered**:

d. At least three data points exist;

e. Standard deviation less than 110% of weighted average rate; **and**

f. Weighted average rate falls within data cluster in plot.

VDOT has selected a non-ITE trip generation methodology (Mixed Use Trip Generation Model V 4.0) that is approved for the use in preparation of small area plan traffic impact statements. It can also be applied when analyzing the trip generation for a mixed use development rezoning proposal when approved by VDOT at a scope of work meeting (see page 43 for information on this Model). **Such alternate methodology or rate can be modified based upon local factors if agreed to at a scoping meeting**.

NOTE: The ITE land use type for a development should be carefully chosen to best reflect the nature of the development, especially when several similar land use types are available.

VDOT is authorized to allow the use of trip generation rates from publications in addition to the ITE Trip Generation *publication* (see page 73 about this publication).

The use of ITE Trip Generation *codes that have a small sample size are discouraged.*

If the Trip Generation *database has an insufficient number of data points, the analyst should collect local data and establish a local rate. Some examples include:*

- *ITE LU 030 Truck Terminal*
- *ITE LU 151 Mini-Warehouse*
- *ITE LU 251 Senior Adult Housing - Detached (aka Age Restricted)*
- *ITE LU 252 Senior Adult Housing - Attached (aka Age Restricted)*

Use of the ITE Senior Housing Trip Rate should be based on a proffered condition having been approved during the rezoning of the property establishing that a deed restriction will be recorded limiting occupancy of the residential dwelling units to "housing for older persons" as defined in the Virginia Fair Housing Law and that no persons under the age of 19 shall reside in such housing.

The ITE Shopping Center Trip Rate should not include out-parcel pad site uses (usually businesses). The trips generated by such uses should be added to the Shopping Center Trip Rate to determine the total.

3. INTERNAL CAPTURE AND PASS-BY TRIPS.

Internal capture rates consider site trips "captured" within a mixed use development, recognizing that trips from one land use can access another land use within a site development without having to access the adjacent street system. **For office with retail use – use the smaller of 5% office or retail trips generated.**

Pass-by trip reductions consider site trips drawn from the existing traffic stream on an adjacent street, recognizing that trips drawn to a site would otherwise already traverse the adjacent street regardless of the existence of the site. The reduction applies only to volumes on adjacent streets, not to ingress or egress volumes at entrances serving the proposed site. Unless otherwise approved by VDOT, **the pass-by rates utilized shall be those reported in Trip Generation Handbook**.

Various internal capture rates are listed and can be used in combination to provide greater flexibility to more accurately determine internal trips that do not impact adjacent streets.

For VDOT TIA studies associated with small area plans, pass-by trip reductions and internal capture rates may be based on the "Mixed Use Trip Generation Model V 4.0" trip generation methodology as described on page 43 of this chapter.

NOTE: The intent of this section is to provide conservative estimates of trip reductions—the rates used in specific studies can be adjusted based upon agreement in a scoping meeting or the results of supporting studies.

The capture figures are "by right" and additional reductions in internal capture and pass-by are allowed with sufficient justification. Alternative internal capture and travel demand management methodologies can be considered in the scope of work meeting.

While internal capture and pass-by rates exceeding the standards set out in the regulation may be used with appropriate documentation, care must be taken in the application of each of these, as inappropriate use can have a significant impact on the analysis. Studies used to justify altered rates must be confirmed to have been done in areas with economic, geographic, and social similarity to the locality with the proposed development.

4. TRIP DISTRIBUTION.

Trip distribution shall be in accordance with logical regional travel patterns as suggested by existing highway directional split and intersection movements or population and destination site distribution. It should recognize the effects of street connectivity.

If more detailed information is available from trip origin/destination studies, marketing studies, or regional planning models, this may be used with VDOT's approval.

5. PLANNING HORIZON.

In general, the analysis years shall be related to (i) the opening date of the proposed development, (ii) build-out of major phases of a multi-year development, (iii) long-range transportation plans, and (iv) other significant transportation network changes.

6. BACKGROUND TRAFFIC GROWTH.

Where regional transportation planning models are not available, geometric growth (or compound growth), based upon historical growth rates, shall generally be used for determining future background traffic levels where extensive traffic-count history is available and capacity constraint is not appropriate. This growth rate replicates "natural growth" and is typical for projecting urban growth. **Natural growth of traffic can be adjusted consistent with traffic forecasts associated with previously submitted local land development projects within the study area.**

NOTE: Approved but not yet constructed developments in the vicinity of the site should be included in the background traffic calculation.

7. FUTURE CONDITIONS.

Future conditions shall include background traffic and additional vehicle trips anticipated to be generated by approved but not yet constructed or improved projects.

8. LEVEL OF SERVICE CALCULATION.

Highways. Level of Service (LOS) analysis of highways shall use the techniques described in the Highway Capacity Manual (HCM) which may be supplemented by other capacity or delay methodologies. The Quality/Level of Service Handbook (Florida DOT) offers an example of a supplemental methodology.

SIDRA traffic software should be used for roundabouts (see page 58). Unless actual on-ground conditions dictate otherwise, preparers should use the following defaults when utilizing the Highway Capacity Software (HCS) or other approved programs when evaluating roadway components:

a. Terrain – choose the appropriate terrain type. Most of the state will be level or rolling, but some areas may qualify for consideration as mountainous.

b. Twelve-foot wide lanes.

c. No parking or bus activity unless field conditions include such activity or unless the locality has provided VDOT with a written statement of intent for the services to be provided.

d. Peak hour factor by approach – calculate from collected traffic counts (requires at least a peak hour count in 15-minute increments). However, **the use of peak hour factors lower than 0.85 shall only be allowed if based upon the average of more than three peak hour counts. For future conditions analysis, unless specific site conditions can be expected to create extreme peak hour factors, default peak hour factors between 0.92 and 1.00 should be used.**

e. Heavy vehicle factor – calculate from collected traffic (classification) counts or obtain from VDOT count publications. **For future conditions analysis with development traffic, the existing heavy vehicle factor should be adjusted based upon the nature of the traffic being generated by the development.**

f. Area type – non-center of business district.

Bicycle or Pedestrian. If significant potential for bicycle or pedestrian trips exists, the traffic impact analysis shall include current and future service level analyses at build-out for existing or proposed bicycle and pedestrian accommodations. Bicycle accommodations would include bike lanes, paved shoulders, and off-street bicycle paths. HCM or similar methodologies can be used in well-developed urban situations, while service level concepts would be more appropriate in areas that do not have an established and well-used pedestrian network.

Two good sources of information on bicycle and pedestrian level of service analysis are:

- The Bicycle Compatibility Index: A Level of Service Implementation Manual (FHWA)
- Bicycle and Pedestrian Level of Service Performance Measures and Standards for Congestions Management Systems Transportation Research Record 1538 (TRB)

Bus Service. Analysis shall be provided for all bus service with routes that have or will have a bus station or stop within 2,000 feet of the proposal. The study shall evaluate any potential increased demand for bus use due to the proposal and may consider the benefits of dedicated bus lanes for more frequent and rapid service.

24VAC30-155-60 C.8 of the regulations specifies use of the 2003 Transit Capacity and Quality of Service Manual, 2nd Edition for conducting the quality of service analysis for bus service. This Manual was updated in 2013 resulting in the Transit Capacity and Quality of Service Manual 3rd Edition. It may be used for conducting the quality of service analysis for bus

service if approved by VDOT at a scope of work meeting. It incorporates the results of new research on transit capacity and quality of service that has occurred in the ten years since the 2nd Edition was published including computational methods for evaluating a variety of performance measures related to transit operations and quality of service and presents a new multimodal transit level of service measure.

- Transit Capacity and Quality of Service Manual 2nd Edition (TRB).
- Transit Capacity and Quality of Service Manual 3rd Edition (TRB).

NOTE: Examples of standard assumptions for LOS at signalized intersections include (i) minimum "yellow/all red" of six seconds; (ii) minimum "green" time for a movement of six or seven seconds; and (iii) all left turns treated as "protected" left turns in the traffic impact analysis on roadways with speed limits of 45 mph or higher rather than as a permissive left turn. However, these assumptions may vary by VDOT District.

9. TRIP REDUCTION AND PEDESTRIAN AND BICYCLE ACCOMMODATIONS.

The preparer of the traffic impact analysis may reduce the number of vehicle trips generated by the proposal in the traffic impact analysis for pedestrian and bicycle accommodations. A preparer may only used this trip reduction if the criteria summarized below (including the existence of appropriate accommodations, and required service level) are met.

This reduction shall be based upon the percentages allowed for in the regulation; provided that the total number of reductions for pedestrian and bicycle accommodations *shall not exceed 500 vehicle trips per peak hour of the generator*, unless approved by VDOT. For example, the trip limitation and methodology can be adjusted based upon the results of a scoping meeting.

Pedestrian Accommodations. Defined as a sidewalk, pedestrian path, or multi-use trail. Where a pedestrian service level of A exists, vehicle trips per peak hour of the generator may be reduced by 4.0% for those portions of the development within a 2,000-foot radius of the connections between the proposed development and the adjoining network; a service level of B, a 3.0% reduction; a service level of C, a 1.5% reduction for the portion of the development noted above. These reductions may only be taken if:

a. Pedestrian facility coverage in a 2,000-foot radius of the connections to the proposed development is on or along at least 80% of the road network;
b. **The pedestrian facilities inside and outside the development provide reasonably direct access to traffic generators**; and
c. There are at least two of the 10 major land use classifications, as defined in ITE Trip Generation, within the 2,000-foot radius.

Bicycle Accommodations. Defined as (i) a street with a design speed of 25 MPH or less that carries 400 vehicles per day or less, (ii) on-street bike lanes, (iii) a pedestrian accommodation, (iv) paved shoulders of roadways that are not part of the designated traveled way for vehicles and are at least two feet wide, or (v) exclusive and shared off-street bicycle paths.

Where a bicycle service level of A exists, vehicle trips per day may be reduced by 3.0%; service level of B, a 2.0% reduction; service level of C, a 1.0% reduction. These reductions may only be taken if:

a. Bicycle accommodations within a 2,000-foot radius of the connections to the proposed development exist on or along at least 80% of the road network; and
b. **The bicycle accommodations inside and outside the development provide**

reasonably direct access to traffic generators; and

c. There are at least two of the 10 major land use classifications, as defined in ITE Trip Generation, within the 2,000-foot radius.

The trip reductions for traffic impact analysis prepared for small area plans (see the Comprehensive Plan chapter page 12) and for mixed use development rezoning proposals may be based on the non-ITE trip generation methodology approved by VDOT (see page 43) and are not subject to the limitations or requirements above.

NOTE: *The regulations allow the trip reduction for pedestrian and bicycle accommodations within 2,000 feet of where the proposed pedestrian walkway or bicycle path will connect to existing pedestrian or bicycle facilities. A 2,000 ft radius is specified as a reasonable distance that pedestrians or bicyclists may travel from the development before deciding to use a vehicle.*

It is on the perimeter of a development where pedestrian and bicycle activity can reduce the use of vehicles on state highways and therefore trip reductions should be awarded for accommodating and encouraging such activity. Pedestrian and bicycle accommodations within a larger development, though, do not reduce vehicular trips onto the highway and therefore will not reduce a development's external trip generation.

VDOT has selected a non-ITE trip generation methodology that is approved for use in preparing small area plan traffic impact analysis as well as for mixed use development rezoning proposals based on the results of a scope of work meeting (see page 43 for more information). In the event that the VDOT selected alternative trip generation rates are used, care must be taken to not "double-count" vehicle trip reductions, since the studied location's rates may already take these trip reductions into account.

Finally, in terms of bicycle accommodations trip reductions, the peak hour vehicle trip reduction due to bicycles would generally be the same as the daily trip reductions.

10. MODAL SPLIT AND TRIP REDUCTION.

If a proposal is located within 1/2 mile of a transit station, excluding bus stops and stations, as measured along roadways that have pedestrian accommodations or bicycle accommodations, reasonable vehicle trip reductions may be made with VDOT's approval.

When a proposal is located more than 1/2 mile but less than two miles from a transit stop, excluding bus stops and stations, with **bicycle** parking accommodations, **additional bicycle** modal split reductions may be utilized. The analysis of capacity of the transit parking accommodations shall be included when such trip reductions are used.

If a proposal is located within 1/4 mile of a bus stop or station as measured along roadways that have pedestrian or bicycle accommodations to the bus stop or station where the segment and route service levels are C or higher, reasonable vehicle trip reductions may be made with VDOT's approval.

Multi-modal facilities with parking more than 1/4 mile from the proposed development can be expected to divert vehicle trips (and shorten their length) rather than eliminate them.

Since ITE Trip Generation estimates the number of vehicle trips that can be expected, any other reductions in trips due to demand management measures must be carefully considered before being allowed and should be supported by studies of similar cases.

In the event that VDOT's approved site-specific, non-ITE alternative trip generation rates are

used, care must be taken to not "double-count" vehicle trip reductions, since the studied location's rates may already take these trip reductions into account.

11. SIGNAL WARRANT ANALYSIS.
Traffic signal warrant analysis shall be performed in according to the procedures in the Manual on Uniform Traffic Control Devices or the ITE Manual of Traffic Signal Design (see page 73).

NOTE: VDOT is the final authority regarding the installation of new traffic signals or the expansion of the number of approaches to existing signals. If a site meets the signal warrants it does not guarantee that the signal is appropriate or that VDOT should and will approve the installation of a traffic signal.

12. RECOMMENDED IMPROVEMENTS.
Recommendations made in the traffic impact analysis for improvements to transportation facilities shall comply with the geometric standards in VDOT's Road Design Manual.

Crash History and Analysis

If a study of the crash history is required, the roadway segments or intersections that are identified should be compared to the overall crash record with particular attention to severe crash density and rates. For longer segments, corridors should be divided into sections of similar configuration and environments (e.g., cross-section, terrain, adjacent land-use/driveway density).

A summary of the following types of crash cause-related data for the entire segment or by section based on knowledge of the area should be provided:

- Collision Type
- Driver Action
- Driver Condition
- Driver Visibility
- Driver Sobriety
- Surface and Light Conditions

The analysis should be a trial and error refinement of the most important causal factors. Histograms or counts of the total crashes, deaths plus injuries, and collision types (summing to total crashes) should be presented for each section of the crash analysis.

Review of the predominant collision types plotted by section around the critical sections may reveal additional length and details to be considered for further investigation, so this should be kept in mind when defining the areas that need to be studied in the crash history portion of the TIA.

Traffic Analysis Software for Conducting Calculations

There are a number of software packages available for analyzing intersection treatments, modeling traffic flow, estimating accident probabilities, estimating the traffic carrying ability of roadways, and traffic signal optimization. Use of such software varies by Region and District. VDOT's Traffic Engineering Division has purchased several of these software packages for the Central Office and for the Districts/Regions**.**

Software not included in the following list may still be acceptable for use in the preparation of traffic impact analyses if the VDOT reviewer has access to this software and agrees to its use. Assistance regarding the acceptability or use of other software may be obtained from the:

- Traffic Engineering Division for microscopic traffic simulation/traffic signal analysis software,
- Transportation and Mobility Planning Division for regional planning models or pedestrian and transit models, or
- Transportation Research Council in Charlottesville for all types of models.

HCM or **HCS.** The **Highway Capacity Manual** (HCM) is the most widely used document in the transportation industry that calculates and analyzes roadways. Highway Capacity Software (HCS+) is the computerized implementation of the procedures contained in the HCM. HCS measures the capacity of freeways, rural and suburban highways, and urban streets. HCS uses a set of procedures for estimating the traffic-carrying ability of facilities over a range of defined operational conditions. It is a tool for analyzing existing facilities and for the planning and design of improved or future facilities.

SYNCHRO is a macroscopic intersection and traffic signal capacity analysis software using a consistent database designed to gather and analyze the necessary data for a specific type of study. Synchro produces a schematic drawing of the intersection layout but does not relate to any other spatial data. The software can be used to set median, crosswalk width, tapers, TWLTL; control lane alignment thru intersections; and produce detailed detector settings. Synchro 7 is the latest version from Trafficware Ltd that also offers SimTraffic 7 and 3D Viewer 7 – a microscopic simulation model for signals and intersections. If the SimTraffic portion of Synchro is used, a minimum of 95% of the traffic must be on the network.

SIDRA is an advanced micro-analytical traffic evaluation tool used for the assessment of alternative intersection treatments in terms of capacity, level of service and a wide range of performance measures. Such measures include delay, queue length, and stops for vehicles and pedestrians, as well as fuel consumption, pollutant emissions and operating cost. SIDRA should only be used to analyze roundabouts; it should not be used to analyze signalized intersections in lieu of HCS or Synchro.

CORSIM is a corridor-level, microscopic simulation model package. It applies interval-based simulation to describe traffic operations. The CORSIM version 5.1 software package includes the NETSIM (for surface streets systems) and FRESIM (for freeway systems) models. In the model, each vehicle is individually tracked through the network, and operational measures of effectiveness (MOEs) are collected on every vehicle. Driver behavior characteristics are assigned to each vehicle. The variation of each vehicle's behavior is simulated in a manner reflecting real-world operations.

VISSIM is a powerful micro-simulation tool that allows the user to display and visualize complex traffic flow in a clear graphical way. VISSIM is part of the PTV Vision Transport modeling suite. This software provides a number of calibration parameters that allow for close calibration to local conditions. Desired speed behavior that reflects local conditions, vehicle parameters that represent the technical abilities of the type of vehicle, and signal control logics that reflect the local methods of control are only a few elements reflecting the complex cycle of cause and effect. All these elements are reproduced in a microscopic traffic simulator.

REGULATIONS

24VAC30-155-60. VDOT Traffic Impact Statement.

A. A VDOT traffic impact statement (VTIS) assesses the impact of a proposed development on the transportation system and recommends improvements to lessen or negate those impacts. It shall (i) identify any traffic issues associated with access from the site to the existing transportation network, (ii) outline solutions to potential problems, (iii) address the sufficiency of the future transportation network, and (iv) present improvements to be incorporated into the proposed development.

If a VTIS is required, data collection shall be by the locality, developer, or owner, as determined by the locality and the locality shall prepare or have the developer or owner prepare the VTIS. If the locality prepares the VTIS it shall provide a copy of the complete VTIS to the applicant when one is provided to VDOT. The completed VTIS shall be submitted to VDOT.

The data and analysis contained in the VTIS shall be organized and presented in a manner acceptable to the department and consistent with this regulation.

B. Scope of work meeting.

1. For proposals that generate less than 1,000 vehicle trips per peak hour of the generator representatives of the locality, the applicant, or the locality and the applicant may request a scope of work meeting with VDOT to discuss the required elements of a VTIS for any project and VDOT shall reply to such request within 30 days of its receipt of such a request and provide a date that is no more than 60 days from such receipt, time and location for such a scope of work meeting to both the locality and the applicant, if applicable.

2. For proposals that generate 1,000 or more vehicle trips per peak hour of the generator representatives of the locality and applicant, if applicable, shall hold a scope of work meeting with VDOT to discuss the required elements of a VTIS. Once a locality or applicant has contacted VDOT regarding the scheduling of a scope of work meeting VDOT shall reply to both the locality and the applicant, if applicable, within 30 days of such contact and provide a date that is no more than 60 days from such contact, time and location for such a meeting.

At a scope of work meeting pursuant to this section, the locality, the applicant and VDOT shall review the elements, methodology and assumptions to be used in the preparation of the VTIS, and identify any other related local requirements adopted pursuant to law. The results of the initial scoping meeting may be adjusted in accordance with sound professional judgment and the requirements of this regulation if agreed upon by VDOT, the locality, and applicant, if applicable.

C. Required elements. The required elements and scope of a VTIS are dependent upon the scale and potential impact of the specific development proposal being addressed by the VTIS as determined by VDOT in its sole discretion.

1. At a minimum, the VTIS shall include the elements shown in the table below. The site generated peak hour trips in the table below shall be based upon the gross vehicle trip generation of the site less internal capture and transit mode split reductions, if applicable. When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, the VTIS shall estimate multimodal trips. All distances in the table below shall be measured along roads or streets.

See the table on page 46: Required Elements of a Traffic Impact Analysis.

Notwithstanding the geographic scope noted above, the geographic scope of the study noted above may be reduced or enlarged based upon layout of the local transportation network, the geographical size of the development, and the traffic volume on the existing network, as determined by VDOT in consultation with the locality and the applicant, if applicable. Typically, analysis will be conducted for any roadway on which the additional trips generated by the proposal have a materially detrimental impact on traffic conditions. The analysis presented in the VTIS need not include all roadway and roadway segments located within the geographic scope of the study as determined by VDOT.

2. A VTIS for a development proposal that only meets the low volume road submission criterion (24VAC 30-155-40 A 3) shall, at a minimum, consist of the following elements, unless otherwise directed by VDOT.

a. All elements contained in the Background Information portion of the above table, except the geographic scope/limits of study area is limited to the highway fronting the proposed development and the closest intersection, in each direction if applicable, of that highway with a highway that has an average daily traffic volume higher than the fronting highway.

b. A roadway safety inventory study of the roadway segment or segments between the site entrance to the nearest intersections with the higher traffic volume highways, to include such elements as, but not limited to, speed limit, existing warning signs, pavement and shoulder type, pavement and shoulder width, intersection sight distances, and safe horizontal curve speeds.

c. Daily and peak hour traffic volumes presented on diagrams, with counts provided in an appendix, for the fronting highway at the site, at the highway's intersections with the higher volume highway, and for the higher volume highways at their intersection with the fronting highway.

d. All relevant elements contained in the Trip Generation portion of the above table.

e. Projected daily and peak hour of the generator traffic volumes assuming build-out of the proposal, presented on diagrams for the receiving highway at the site, at the highway's intersection with the higher volume highways, and for the higher volume highways at their intersections with the receiving highway.

f. Delay and level of service analysis for the intersections of the receiving highway with the higher volume highways.

g. A comparison of the existing geometrics of the fronting highway under proposed build-out traffic conditions with the geometric standards, based upon functional classification and volume, contained in the Road Design Manual, 2011 (VDOT).

3. A VTIS for a rezoning proposal may be prepared in accordance with the "Less than 500 Site Generated Peak Hour Trips" category in the table above, regardless of actual projected trip generation, provided that:

a. The rezoning proposal is in conformance with a locality's adopted comprehensive plan that was reviewed in accordance with 24VAC30-155-30; and

b. The review of the comprehensive plan included the submission to VDOT of a technical evaluation of the traffic impacts for anticipated development based on the future land use policies and map.

D. Methodology and standard assumptions. A VTIS shall be prepared based upon methodology and assumptions noted below or as may be agreed upon by VDOT based upon the results of a scope of work meeting held by VDOT pursuant to this section.

1. Data collection.

Preparers shall collect traffic data in accordance with the identified study area. The count data

shall include at a minimum, weekday 24-hour counts, and directional turning movement counts during AM and PM peak times of the day. The 24-hour counts shall include vehicle classification counts. With approval of VDOT, data collected by the transportation professional preparer within the last 24 months may be used, likewise for data from the VDOT count program.

The preparer shall monitor traffic operations during data collection to ensure extraneous events such as vehicle crashes or special event traffic do not affect integrity of count data. Preparers collecting data for utilization in traffic impact studies shall normally avoid data collection during the following instances:

a. Holidays or times of the year when the traffic patterns are deemed to be unrepresentative of typical conditions, unless required by VDOT or the locality, or both.

b. Summer months if school or schools in proximity.

c. Fridays and weekends unless required by VDOT or the locality, or both.

d. Other times of the year contingent upon existing adjacent land use activities.

e. During times of inclement weather.

2. Trip generation.

Estimates of trip generation by a proposed development shall be prepared using the Institute of Transportation Engineers Trip Generation, 8th Edition, 2008, unless VDOT agrees to allow the use of alternate trip generation rates based upon alternate published guides or local trip generation studies. VDOT shall at all times after July 1, 2011, have at least one non-ITE trip generation methodology or alternative rate approved for the use in preparation of small area plan traffic impact statements pursuant to 24VAC30-155-30 C that recognizes the benefits of reduced vehicle trip generation and vehicle miles traveled from developments that meet the criteria for a small area plan pursuant to this regulation. Such alternate methodology or rate can be modified based upon local factors if agreed to at a scoping meeting. Rezoning proposals shall assume the highest vehicle trip generating use allowable under the proposed zoning classification. In determining which trip generation process (equation or rate) may be used, the preparer shall follow the guidance presented in the Trip Generation Handbook, Second Edition – an ITE Recommended Practice, 2004, which is summarized here, except rates may be utilized if the criteria for the use of regression equations are not met. Regression equations to calculate trips as a result of development shall be utilized, provided the following is true:

a. Independent variable falls within range of data; and

b. Either the data plot has at least 20 points; or

c. R^2 is greater than 0.75, equation falls within data cluster in plot and standard deviation greater than 110% of weighted average rate.

If the above criteria are not met, then the preparer can use average trip rates, though if the following do not apply a rate based upon the study of similar local sites should be considered:

d. At least three data points exist;

e. Standard deviation less than 110% of weighted average rate; and

f. Weighted average rate falls within data cluster in plot.

3. Internal capture and pass-by trips.

a. Internal capture rates consider site trips “captured” within a mixed use development, recognizing that trips from one land use can access another land use within a site development without having to access the adjacent street system. Mixed use developments include a combination of residential and non-residential uses or a

combination of non-residential uses only. Internal capture allows reduction of site trips from adjacent intersections and roadways. For traffic impact statements prepared for small area plans pursuant to 24VAC30-155-30 C the internal capture rate or rates may be based on the non-ITE trip generation methodology approved by VDOT. For ITE-based methodologies, unless otherwise approved by VDOT, the following internal capture rates should be used if appropriate:

(1) Residential with a mix of non-residential components - use the smaller of 15% of residential or 15% non-residential trips generated.

(2) Residential with office use - use the smaller of 5.0% of residential or 5.0% of office trips generated.

(3) Residential with retail use - for AM peak hour, use the smaller of 5.0% residential or 5.0% retail trips generated; for PM peak hour, use the smaller of 10% residential or 10% retail trips generated; for 24-hour traffic, use the smaller of 15% residential or 15% retail trips generated.

(4) Hotel/motel with office use - use 15% of hotel/motel trips, unless the overall volume of the office traffic is more than the overall volume of hotel/motel traffic use in which case use the smaller of 10% of the hotel/motel traffic or the office traffic.

(5) Multiuse development with more than five million square feet of office and retail - internal capture rate should be determined in consultation with and approval of VDOT.

(6) Office with retail use – use the smaller of 5% office or retail trips generated

(7) Some combination of the above, if approved by VDOT.

b. Pass-by trip reductions consider site trips drawn from the existing traffic stream on an adjacent street, recognizing that trips drawn to a site would otherwise already traverse the adjacent street regardless of existence of the site. Pass-by trip reductions allow a percentage reduction in the forecast of trips otherwise added to the adjacent street from the proposed development. The reduction applies only to volumes on adjacent streets, not to ingress or egress volumes at entrances serving the proposed site. Unless otherwise approved by VDOT, the pass-by rates utilized shall be those reported in Trip Generation Handbook, Second Edition – an ITE Recommended Practice, 2004. For traffic impact statements prepared for small area plans pursuant to 24VAC30-155-30 C, the pass-by trip reductions may be based on the non-ITE trip generation methodology approved by VDOT.

4. Trip distribution.

In the absence of more detailed information, trip distribution shall be in accordance with logical regional travel patterns as suggested by existing highway directional split and intersection movements or population and destination site distribution and shall recognize the effects of increased street connectivity if such streets meet the requirements of the Secondary Street Acceptance Requirements (24VAC30-92). If more detailed information is available from trip origin/destination studies, marketing studies, or regional planning models, this may be used to distribute trips upon approval of VDOT.

5. Planning horizon.

In general, the analysis years shall be related to (i) the opening date of the proposed development, (ii) build-out of major phases of a multi-year development, (iii) long-range transportation plans, and (iv) other significant transportation network changes. The preparer should establish the planning horizon in consultation with and subject to the acceptance of VDOT.

6. Background traffic growth.
Unless directed by VDOT, geometric growth (or compound growth), based upon historical growth rates, shall generally be used for determining future background traffic levels where extensive traffic-count history is available and capacity constraint is not appropriate. This growth rate replicates "natural growth" and is typical for projecting urban growth. Natural growth of traffic can be adjusted consistent with traffic forecasts associated with previously submitted local land development projects within the study area.

7. Future conditions.
For the purpose of the VTIS, future conditions shall include background traffic and additional vehicle trips anticipated to be generated by approved but not yet constructed or improved projects.

8. Level of service calculation.
Level of service (LOS) analysis for highways shall utilize the techniques described in the Highway Capacity Manual, 2010 (TRB). Neither the intersection capacity utilization method nor the percentile delay method may be used in the traffic impact calculations of delay and level of service. Preparers shall consult with VDOT on which traffic analysis software package is to be used to conduct the LOS calculations. The results shall be tabulated and displayed graphically, with levels of service provided for each lane group for each peak period. All data used in the calculations must be provided along with the results of the capacity analysis. Any assumptions made that deviate from the programmed defaults must be documented and an explanation provided as to why there was a deviation. Electronic files used for the analysis shall be provided to VDOT as a digital submission (e.g. .hcs, .sy6, .inp, .trf files), along with the printed report. If intersections analyzed are in close proximity to each other so that queuing may be a factor, VDOT may require the inclusion of an analysis with a micro simulation model. Unless actual on-ground conditions dictate otherwise, preparers should use the following defaults when utilizing the Highway Capacity Software (HCS) or other approved programs when evaluating roadway components:

a. Terrain – choose the appropriate terrain type. Most of the state will be level or rolling, but some areas may qualify for consideration as mountainous.

b. Twelve-foot wide lanes.

c. No parking or bus activity unless field conditions include such parking or bus activity or unless the locality has provided VDOT with a written statement of intent for the services to be provided.

d. Peak hour factor by approach – calculate from collected traffic counts (requires at least a peak hour count in 15-minute increments). However, the use of peak hour factors lower than 0.85 shall only be allowed if based upon the average of more than three peak hour counts. For future conditions analysis, unless specific site conditions can be expected to create extreme peak hour factors, default peak hour factors between 0.92 and 1.00 should be used.

e. Heavy vehicle factor – calculate from collected traffic (classification) counts or obtain from VDOT count publications. For future conditions analysis with development traffic, the existing heavy vehicle factor should be adjusted based upon the nature of the traffic being generated by the development.

f. Area type – non-center of business district.

The VTIS shall identify any existing or proposed bicycle and pedestrian accommodation that would be affected by the proposal. For the purposes of this subsection, a bicycle accommodation is defined as on-street bike lanes, paved shoulders of roadways that are not part of the designated traveled way for vehicles, or exclusive and shared off-street bicycle paths.

For the purposes of this subsection, a pedestrian accommodation is defined as sidewalks, intersection treatments and exclusive, or shared off-street trails or paths. If significant potential for bicycle or pedestrian trips exists, the VTIS shall include current and future service level analyses at build-out for existing or proposed bicycle and pedestrian accommodations. When the proposal requires or includes improvements or modifications to the roadway, bicycle or pedestrian accommodations the VTIS shall analyze the impacts of such improvements and modifications on bicycle and pedestrian accommodations and service levels, and provide recommendations for mitigation of adverse impacts.

The VTIS shall provide analysis for all bus service with routes that have, or will have a station or stop within 2,000 feet of the proposal. The VTIS shall evaluate and discuss potential for increased demand for bus use due to the proposal, addressing whether such increases will result in longer dwell time at stops or increase the need for buses on a route. The quality of service analysis for bus service shall be determined in accordance with the Transit Capacity and Quality of Service Manual, 2nd Edition, 2003, (TRB). The VTIS shall provide both route and segment quality of service. The VTIS may consider the benefits of dedicated bus lanes for more frequent and rapid service. The VTIS shall provide recommendations for mitigation of adverse impacts where adverse impacts are expected to the quality of service to bus service. If an analysis of pedestrian quality or level of service is required for calculation of the bus quality of service, the preparer shall use a methodology approved by VDOT.

9. Trip reduction, and pedestrian and bicycle accommodations.

When a proposal meets the criteria listed below the preparer of the VTIS may reduce the number of vehicle trips generated by the proposal in the VTIS analysis in accordance with this subsection. Notwithstanding the percentages below, the total number of reductions used by a preparer in accordance with this subsection shall not exceed 500 vehicle trips per peak hour of the generator unless otherwise approved by VDOT. The trip reductions for traffic impact statements prepared for small area plans pursuant to 24VAC30-155-30 C may be based on the non-ITE trip generation methodology approved by VDOT and are not subject to limitations or requirements of this subdivision.

a. Pedestrian accommodations. For the purposes of this subsection, a pedestrian accommodation is defined as a sidewalk, pedestrian path, or multi-use trail. Where a pedestrian service level of A exists, vehicle trips per peak hour of the generator may be reduced by 4.0% for those portions of the development within a 2,000-foot radius of the connections between the proposed development and the adjoining network. Where a pedestrian service level of B exists, vehicle trips per peak hour of the generator may be reduced by 3.0%; where a pedestrian service level of C exists, vehicle trips per peak hour of the generator may be reduced by 1.5% for the portion of the development noted above. These reductions may only be taken if:

(1) Pedestrian facility coverage in a 2,000-foot radius of the connections to the proposed development is on or along at least 80% of the road network;

(2) The pedestrian facilities inside and outside the development provide reasonably direct access to traffic generators; and

(3) There are at least two of the 10 major land use classifications, as defined in ITE Trip Generation, 8th Edition, 2008, within the 2,000-foot radius.

b. Bicycle accommodations. For the purposes of this subsection, a bicycle accommodation is defined as a street with a design speed of 25 MPH or less that carries 400 vehicles per day or less, on-street bike lanes, a pedestrian accommodation, paved shoulders of roadways that are not part of the designated traveled way for vehicles and are at least two feet wide, or exclusive and shared off-street bicycle paths. Where a bicycle service level of A exists, vehicle trips per day may be reduced by 3.0%. Where a bicycle service level of B exists, vehicle trips per day may be reduced by 2.0%. Where a bicycle service level of C exists, vehicle trips per day may be reduced by 1.0%. These reductions

may only be taken if:

(1) Bicycle accommodations within a 2,000-foot radius of the connections to the proposed development exist on or along at least 80% of the road network;

(2) The bicycle accommodations inside and outside the development provide reasonably direct access to traffic generators; and

(3) There are at least two of the 10 major land use classifications, as defined in ITE Trip Generation, 8th Edition, 2008, within the 2,000-foot radius.

10. Modal split and trip reduction.

All vehicle trip reductions used in the VTIS pursuant to this subsection are subject to the approval of VDOT.

a. If a proposal is located within 1/2 mile along roadways, pedestrian or bicycle accommodations of a transit station, excluding bus stops and stations, reasonable vehicle trip reductions of vehicle trips generated by the proposal may be made with approval of VDOT. The preparer shall submit documentation to justify any such vehicle trip reductions used with the VTIS. When a proposal is located more than 1/2 mile but less than two miles from a transit stop, excluding bus stops and stations, with bicycle parking accommodations, additional bicycle modal split vehicle trip reductions may be utilized. The analysis of capacity of the parking accommodations shall be included in the VTIS when such trip reductions are used.

b. If a proposal is located within 1/4 mile along roadways, pedestrian or bicycle accommodations of a bus stop or station where the segment and route service levels are C or higher, reasonable vehicle trip reductions of vehicle trips generated by the proposal may be made with the approval of VDOT. The preparer shall submit documentation to justify any such vehicle trip reductions used with the VTIS.

c. Transit and bus modal split data from similar developments within the geographic scope of the VTIS or one mile of the proposal, whichever is greater, shall be collected if the VTIS vehicle trip reductions are used pursuant to this subsection and similar developments exist within the geographic scope of the VTIS or one mile of the proposal, whichever is greater.

11. Signal warrant analysis.

Traffic signal warrant analysis shall be performed in accordance with the procedures set out in the Manual on Uniform Traffic Control Devices, 2003, revised 2007, or ITE Manual of Traffic Signal Design, 1998, as determined by VDOT.

12. Recommended improvements.

Recommendations made in the VTIS for improvements to transportation facilities shall be in accordance with the geometric standards contained within the Road Design Manual, 2011 (VDOT).

VDOT ADMINISTRATION OF THE REGULATIONS

VDOT Roles in Land Development

The entire land development process encompasses many different disciplines within VDOT and can involve participation from various levels within the agency – from the District Offices to the central office divisions. VDOT has two main roles, regulatory and advisory, in land development. The regulatory role includes:

- Issuing permits for work performed within VDOT's right-of-way including commercial entrances, traffic data collection.
- Controlling the location, number, design, and spacing of entrances, crossovers, and intersections.
- Regulating the development of subdivision streets intended to be included in the secondary system.

VDOT's traditional advisory role involves assisting local governments at their request in their transportation planning and land development regulatory roles. §15.2-2222.1 of the Code (page 5) and the Traffic Impact Analysis Regulations expanded VDOT's advisory role.

State law requires localities to submit comprehensive plans, plan amendments, and traffic impact analysis packages for rezoning applications that meet certain trip generation criteria to VDOT for review. VDOT, then, must provide the local government with official comments that includes a written report on VDOT's key findings on the documents. The regulations establish deadlines for VDOT's response to assure that this review does not extend the local approval process.

> In performing this work, VDOT operates in its advisory role: the locality makes the final decision on comprehensive plans and rezoning proposals. The findings from VDOT's analysis are provided for the information of the local government decision makers, the local government staff, and the general public.

Many localities, though, will not approve a site plan or subdivision plat until the transportation aspects of the project have been approved by VDOT (and by other public agencies) as being in compliance with agency regulations and standards.

Once a land development project enters the permitting stage, VDOT operates under its regulatory role with direct authority to control access to the highway right-of-way, as set out in Title 33.1 – Highways, Bridges, and Ferries

The land development project will need to meet the pertinent regulations and standards in the Access Management Regulations, Secondary Street Acceptance Requirements, Land Use Permit Regulations, and the Road Design Manual - available on the VDOT web site under "Transportation and Land Use."

VDOT Organization

With over 57,000 miles of roads, Virginia operates the third-largest state-maintained highway system in the country, behind Texas and North Carolina. In 2014 VDOT was responsible for

- 1,118 miles of interstate highways,
- 8,111 miles of primary highways, and
- 48,305 miles of secondary roads.

VDOT's land use/land development review program is administered through the nine District Offices (see the VDOT District Offices web site). The program consists of traffic impact analysis review, rezoning, site plan review, subdivision plan review and construction, and permitting processes.

- Each District has a Transportation and Land Use Director who oversees VDOT's land development review process.
- Area Land Use Engineers, reporting to the Director, are located in local offices in the Districts as **the first point of contact for local government staff and developers** for the above program services.
- District Planners, who, in some Districts, report to the Transportation and Land Use Directors, are also generally involved in tasks dealing with the transportation elements of comprehensive plans and Chapter 527 TIA reviews.

Due to the amount and complexity of development activity in Northern Virginia localities, VDOT's Northern Virginia District has Transportation and Land Use Directors and their review staff assigned by counties: Fairfax/Arlington, Prince William, and Loudoun.

District Office Responsibilities

The District Office and its Area Land Use Engineers serve as the clearinghouse for requests to hold a scope of work meeting on traffic impact analysis studies and for comprehensive plan and rezoning proposal packages submitted by local jurisdictions in accordance with §15.2-2222.1 of the Code and the Traffic Impact Analysis (TIA) Regulations.

COMPREHENSIVE PLAN

The Transportation and Land Use Director or, in districts where the District Planner does not report to the Transportation and Land Use director, the District Planner is responsible for:

- Coordinating the provision of technical assistance at the request of a local government in the preparation of the transportation plan portion of the comprehensive plan (see page 8).
- Preparing at a locality's request cost estimates for road and transportation improvements recommended by the comprehensive plan (§15.2-2223 of the Code).
- Coordinating the review of, and preparing written reports with recommendations on, comprehensive plan and plan amendment packages submitted under the TIA Regulations.
- Coordinating the review of locality transportation plans during their development process, and after their adoption, on their consistency with VTrans, the Six-Year Improvement Program, and specific route locations of the CTB. See Local/State Plan and Program Consistency on the VDOT web site.

The Comprehensive Plan chapter (page 7) provides a detailed discussion of these activities, including a Process Chart (page 10) illustrating the steps specified in the regulations for VDOT's review of a comprehensive plan package and a checklist of the information the locality needs to include in its plan package submittal.

The chapter also offers a section on the Comprehensive Plan review process rules (page 14) that covers such details as the deadline for requesting a meeting with the locality, what constitutes VDOT's official comments and written report on the plan package, and the amount of time VDOT has to provide the results of its analysis to the locality. Sample letters for sending the official comments to a locality are presented in the Appendix.

VDOT & LOCAL TRAFFIC IMPACT ANALYSIS STUDIES; REZONING PROPOSALS

The Traffic Impact Analysis chapter in this document provides a detailed discussion on all aspects of the preparation of VDOT traffic impact analyses for rezoning proposals. **The District Office is also responsible for certifying local traffic impact statement requirements as acceptable for complying with the provisions of the regulations** (see page 41).

Application forms and VDOT checklists are presented in the Appendix to help assure that the traffic impact analysis that is submitted meets the intent of the TIA Regulations. A TIA that is deemed to be incomplete will not be accepted and will be returned to the locality.

The District Office is responsible for making sure that VDOT complies with the regulation's submission rules and review deadlines for rezoning packages. To assist in this regard, this document includes a chapter on Review of Rezoning Proposals (page 21). It includes a flow chart illustrating the steps in the regulations for VDOT's review of rezoning proposals and a checklist on the information the locality is required to submit to VDOT.

This chapter also offers sections on the review process rules (page 31) that cover such details as what constitutes VDOT's official comments and written report on the rezoning submission and the amount of time VDOT has to forward the results of its analysis to the locality. Sample letters for sending the official comments to a locality are in the Appendix.

ADMINISTRATIVE RESPONSIBILITIES

Tasks that are carried out to assure the efficient administration of the regulations include:

1. SCOPE OF WORK MEETING ON A REZONING SUBMITTAL. Arrangements are made for scope of work meetings to discuss a traffic impact analysis. VDOT will coordinate with the locality and the applicant to find a suitable date, time and location.

2. RECORD KEEPING. The *LandTrack* data base management system is used to handle record keeping for comprehensive plan and rezoning submittals according to the regulations. More information is presented in the LandTrack chapter on page 74.

3. FEE. Determine that the correct review fee has been submitted. Payment must be received before VDOT's review can begin. Details on the review fees established by the regulations are presented in the Fee Schedule chapter on page 70.

4. COMPLETENESS. Examine the submittal to make sure it is **substantially** complete such that the information required by the regulations has been provided. The checklists referenced on the previous page will help with this task. Return incomplete or deficient submittal packages to the locality and identify what information or data is missing that is required by the regulations.

5. DATE OF RECEIPT. Record the date of receipt for a complete package and calculate the deadline per the regulations when written comments must be provided back to the locality.

6. EVALUATION OF THE SUBMITTAL. Take the necessary steps to provide a thorough evaluation of the plan or the VDOT or local traffic impact analysis study for a rezoning. Depending on the complexity of the submittal, the analysis may involve other sections within the District such as Location & Design. In certain instances the Regional Traffic Engineer may be asked to assist in this regard.

   The Central Office may have contracted with on-call transportation engineering consultants to help the District staff evaluate rezoning traffic impact analysis studies and provide reports on their findings. See the section below.

7. OFFICIAL COMMENTS TO THE LOCALITY; AVAILABLE TO THE PUBLIC. Submit VDOT's final comments and written report on the key findings of VDOT's evaluation of a comprehensive plan or plan amendment, or a rezoning traffic impact analysis study to the local government and make the comments available to the general public. Information on the contents of a written report is presented at the end of the comprehensive plan and the rezoning chapters (page 16 and 34).

VDOT Central Office Technical Assistance

There will be occasions when the District Office may need to contact the Central Office on:

- The interpretation of the regulations.
- Questions on changes to the regulations and the enabling statute.
- Questions relating to **locality transportation plan consistency** with VTrans, SYIP, or the location of state highways.
- Related VDOT land development regulations such as the access management regulations and secondary street acceptance requirements.
- Use of LandTrack.
- Availability and use of on-call consultants to assist the Districts with workload peaks and the more complicated transportation engineering analysis.

These inquiries should be made to the Land Development Section within the **Transportation & Mobility Planning Division**. Contact information is available on VDOT's internal and external web sites.

FEE SCHEDULE

Overview of the Fees

24VAC30-155-80 of the regulations establishes the criteria for determining VDOT's fees for the review of comprehensive plans and rezoning applications submitted in accordance with the Traffic Impact Analysis Regulations. The fee structure is based on the maximum charge allowed by §15.2-2222.1 F. of the Code (page 5) and the Virginia Transportation Research Council's study of VDOT's costs to provide these services.

Key policies for administering the fee schedule are listed below:

- A set fee of $1,000 is established for a Comprehensive Plan review and a Rezoning Proposal review, except a "Low Volume Road Submission."

- The fee for a rezoning low volume road submission is based on the number of adjusted vehicle trips generated per peak hour by the proposed development, not gross ITE rates. A lower fee ($250) is established to reflect VDOT's reduced administrative review time for the less complicated low volume road VDOT traffic impact statement. See pages 26 and 37 for details on this submission type.

- No charge for VDOT's review of a comprehensive plan, plan amendment, or rezoning application that is initiated by a local government or public agency.

- No fee shall be charged for the review of a rezoning submission for property within the boundaries of a locally adopted small area plan that includes a VDOT traffic impact analysis study submitted according to 24VAC30-155-40 C.1 (see pages 12, 27, and 37).

- No fee shall be charged for VDOT's review of a citizens' organization or neighborhood association that proposes comprehensive plan amendments through its local planning commission or local governing body. (§15.2-2222.1 F. of the Code)

- **A check** for the fee must be included in the submission package and **made payable to** "Treasurer of Virginia."

The fee covers VDOT's initial review of the submittal and a second review to evaluate changes made in response to VDOT's comments. If a third or subsequent submission is requested by VDOT because the applicant failed to address deficiencies previously identified by VDOT, then these submissions will be charged a fee as if a new submittal.

An applicant or locality may appeal VDOT's finding that a submitted package failed to address deficiencies previously identified by VDOT. The appeal is filed with the District Administrator. The comprehensive plan checklist and rezoning package checklist include an item on the appropriate fees (see pages 16 and 35).

REGULATIONS

24VAC30-155-80. Fees.

A. Locality initiated proposals. No fee shall be charged for review of any comprehensive plan, comprehensive plan amendment or rezoning proposal initiated by a locality or other public agency.

B. Proposals containing a traffic impact statement as described in subdivision C 1 of 24VAC30-155-40. No fee shall be charged for the review of a rezoning submission that properly includes a traffic impact statement submitted under subdivision C 1 of 24VAC30-155-40.

C. All other proposals. Any package submitted to a locality by an applicant that will be subject to VDOT review pursuant to this chapter shall include any required payment in a form payable directly to VDOT.

1. For initial or second review of all comprehensive plans, comprehensive plan amendments, and transportation plans submitted to VDOT for review, not initiated on behalf of the locality, there shall be a fee of $1,000 charged to the applicant. This fee shall be paid upon submission of a plan to VDOT for review.

2. For initial or second review of rezoning proposals accompanied by a traffic impact statement not initiated on behalf of the locality, there shall be a single fee for both reviews determined by the number of adjusted vehicle trips generated per peak hour, as follows:

Submission made due to 24VAC30-155-40 A 3 (Low volume road criterion) - $250

All other submissions - $1,000

The fee shall be paid upon submission of a package to VDOT for review.

3. For a third or subsequent submission pursuant to subdivisions 1 or 2 of this subsection, that is requested by VDOT on the basis of the failure of the applicant to address deficiencies previously identified by VDOT, the applicant shall be required to pay an additional fee as though the third or subsequent submission were an initial submission and requiring the fees identified above. An applicant or locality may appeal to the district administrator a determination by VDOT that a submitted package failed to address deficiencies previously identified by VDOT.

SUMMARY TABLE: TIA REGULATION REQUIREMENTS

Process		Threshold	Review Process	Fee
Comprehensive Plan and Plan Amendments (including small area plans)		• **5,000 VPD** on state highways, or • Major change to future transportation infrastructure or facilities	• Application submitted to VDOT for review and comment • VDOT may request a meeting with the locality within 30 days • Review to be completed in 90 days or later if mutually agreed NOTE: When a comprehensive plan revision and rezoning proposal are being considered concurrently for the same geographical area, then only a rezoning TIA package is required.	• $1000 covers first and second review: third or more reviews $1000 • No fee if initiated by locality or public agency. • No fee for citizens' organization or neighborhood association proposing plan amendments.
Rezoning	**Residential Low Volume Road Submission**	• **400 VPD AND** exceeds the current traffic volume on a state highway	**Scope of work meeting with VDOT to discuss preparation of TIA study:** • Rezoning to generate less than 1000 VPH*****: applicant/locality may request meeting • Rezoning to generate 1000 or more VPH: applicant/locality shall request meeting **TIA study & rezoning package submitted to VDOT for review & comment:** Package complete; no revisions needed • 45 days for VDOT's review and written comments to locality Package incomplete or revisions needed • VDOT request to meet with the locality & applicant within 45 days to discuss concerns or deficiencies in TIA study • Within 60 days of receipt meeting is held • VDOT may also send written list of concerns or deficiencies • If concerns/deficiencies not addressed within 30 days of meeting or sending comments, VDOT may require resubmission • Review to be completed in 120 days NOTE: The scope of the VDOT TIA study may be more limited if the rezoning conforms to a comprehensive plan reviewed per the regulations; and VDOT's plan review included an evaluation of the traffic impacts for anticipated development based on the future land use policies/ map	• For first & second review**:** $250 - Low Volume Rd $1000 – All other submissions • For third or more review**:** Same fee as initial submission • No fee if initiated by locality or public agency • No fee if using a VDOT TIA prepared for a small area plan
	All Other Land Uses including residential	• **5,000 VPD** on state highways, **or** • **5,000 VPD** on locality maintained streets AND within 3000 feet of a state highway NOTE: No submission is required if the rezoning will generate less daily traffic, and no increase in existing AM/PM peak hour traffic, when compared to the trip generation of land uses allowed by right under the current zoning of the property, except governmental uses.		

***** **VPD** = vehicles per peak hour

REFERENCE DOCUMENTS

A list of publications is provided that will be useful to local government staff, developers, land owners, transportation consultants, and VDOT review staff in the administration of the Traffic Impact Analysis Regulations.

For proposals generating 1000 VPH or more the locality and/or applicant shall hold a Scope of Work Meeting with VDOT.

REGULATIONS

Documents Incorporated by Reference (24VAC30-1555)

Requests for information pertaining to the availability and cost of any of these publications should be directed to the address indicated below the specific document. Requests for documents available from VDOT may be obtained from VDOT's division and representative indicated; however, VDOT documents may be available over the Internet at **www.vdot.virginia.gov**.

Highway Capacity Manual, 2010
Transportation Research Board
500 Fifth Street NW
Washington, DC 20001

ITE Manual of Traffic Signal Design, 1998
Institute of Transportation Engineers
1627 Eye Street, NW
Suite 600
Washington, DC 20006

Transit Capacity and Quality of Service Manual, 2nd Edition, 2003
Transportation Research Board of the National Academies
Keck Center of the National Academies
Transportation Research Board
500 Fifth Street, NW
Washington, DC 20001

Road Design Manual, 2011
VDOT
1401 E. Broad Street
Richmond, Virginia 23219

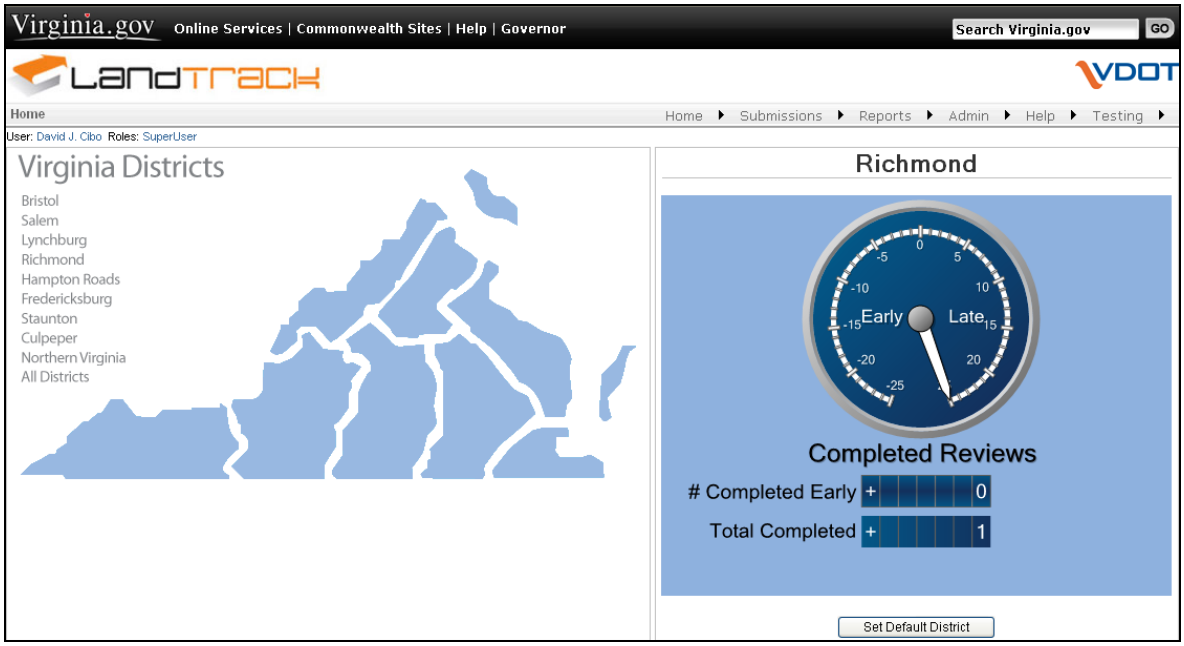
Trip Generation, 8th Edition, 2008
Institute of Transportation Engineers
1627 Eye Street, NW
Suite 600
Washington, DC 20006

Manual on Uniform Traffic Control Devices for Streets and Highways, Effective 2003, Revised 2007
Federal Highway Administration
Superintendent of Documents
U.S. Government Printing Office
PO Box 371954
Pittsburgh, Pennsylvania 15250

Trip Generation Handbook, Second Edition – an ITE Recommended Practice, 2004
Institute of Transportation Engineers
1627 Eye Street, NW
Suite 600
Washington, DC 20006

LANDTRACK: VDOT's TRACKING SYSTEM FOR TRAFFIC IMPACT ANALYSIS REGULATION SUBMITTALS

LandTrack Data Base Management System for VDOT Staff



LandTrack is VDOT's internal electronic tracking & data base management system for Traffic Impact Analysis Regulations submittals.

This system will track VDOT's receipt and processing of traffic analysis studies submitted by localities associated with rezoning applications. LandTrack also will perform the same functions on VDOT's analysis of how local government comprehensive plan and plan amendments could affect the existing transportation network.

LandTrack provides a system for VDOT staff:

- To track VDOT's receipt, processing, and response on rezoning and comprehensive plan submissions.
- To monitor the status of a submittal.
- To store the TIA study, other submittal documents, and VDOT's official comments and written report on key findings.
- To maintain statewide records on VDOT's regulatory activities.

It can be accessed via the **Inside VDOT** web site under Project Development, Transportation and Mobility Planning Division, Links, LandTrack. On the top left corner of the LandTrack Home page is a "Help" tab where a detailed *Users Manual* and *On-Line Help* is provided. Both "Help" items provide instructions on assigning LandTrack user status to District staff that will be entering submissions. Each District has one or more "Super Users" that can add (or remove) staff that will be using LandTrack.

On the next page is the form for organizing information to enter into LandTrack. It is available on the VDOT TIA Regulations web page in a MS Word editable format.

LANDTRACK INFORMATION SHEET

This sheet is a summary of information relating to a submission made in accordance with the requirements of the Traffic Impact Analysis Regulations (24VAC30-155).

Submission Details

Project Name _____ Locality's Project ID _____

VDOT District _____ Jurisdiction _____

Locality Contact _____ TIA Preparer _____

Location

Route Number	Street Name	Principal Rte	ADT
_____	_____	☐	_____
_____	_____	☐	_____
_____	_____	☐	_____
_____	_____	☐	_____
_____	_____	☐	_____

Site Details

Submission Type

- ☐ Comprehensive Plan Review
- ☐ Zoning TIA Review

Chapter 527 Submission ☐Yes ☐No

Facility Type

- ☐ Commercial - Banks/Drug Store
- ☐ Commercial - Cinema
- ☐ Commercial - Fast Food Restaurant
- ☐ Commercial - Grocery Store
- ☐ Commercial - Health/Fitness Center
- ☐ Commercial - Industrial
- ☐ Commercial - Mixed Type
- ☐ Commercial - Office
- ☐ Commercial - Other
- ☐ Commercial - Shopping Center
- ☐ Commercial - Superstore
- ☐ Commercial - Gas Station
- ☐ Commercial - Sit Down Restaurant
- ☐ Mixed Use - Commercial/Residential
- ☐ Residential - Mixed Type
- ☐ Residential - Multi Family
- ☐ Residential - Single Family
- ☐ Residential - Townhouse
- ☐ Local Policy Change

Acreage _____

Residential Units _____ Commercial Sq Ft _____

VPH (net) _____ VPD (net) _____

Principal Parcel ID _____ Doubles Road VPD □Yes □No

Other Parcel ID(s) _____ _____

_____ _____

_____ _____

_____ _____

Payment

Fee Waived □Yes □No Reason for Waiver _____

Payment Included □Yes □No Payment Type □Check □Money Order

Check # _____ Check Holder _____

Payment Amount _____ Received From _____

Tracking

Date Received by Locality _____ Locality's Requested Due Date _____

Comments

_____

_____

_____

_____

_____

_____

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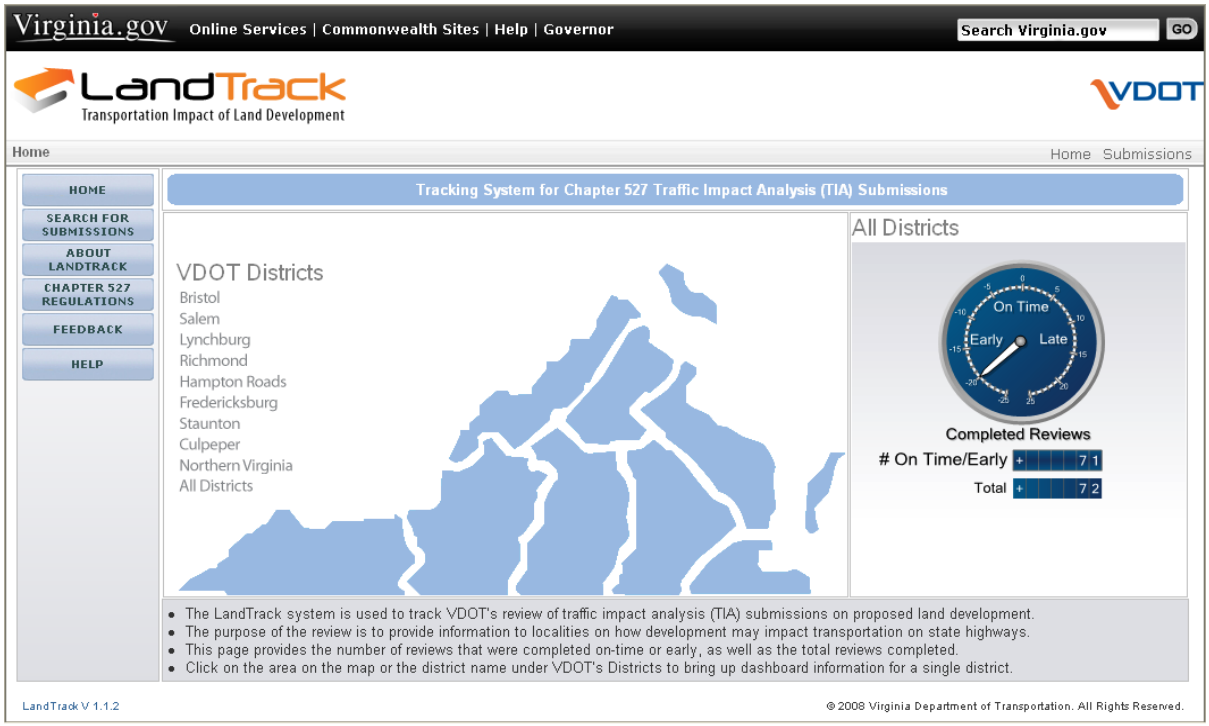
_____

(Include any further comments on additional sheets)

Submission Number (for second and subsequent submissions) _____

LandTrack on the VDOT Web Site for the General Public



A version of LandTrack is presented on the **external VDOT web site** for use by the general public: http://www.virginiadot.org/projects/landuse.asp.

The "external" LandTrack provides information on VDOT's review of the transportation impacts of comprehensive plans and rezoning proposals submitted to VDOT by local governments according to the Traffic Impact Analysis Regulations. It has been designed to be user-friendly, with easy to understand instructions for searching for submittals.

LandTrack will be of particular interest to:

- Developers with rezoning proposals under review by VDOT
- Transportation consultants that have prepared a traffic impact analysis
- Local government land development and transportation planning staff
- Local government governing bodies and planning commissions
- Property owners in proximity to a rezoning proposal

By accessing the system on the VDOT web site, the public can:

- Monitor the status of VDOT's review,
- Examine the traffic impact analysis study on the rezoning proposal, and
- Read VDOT's official comments and written report detailing the results of its evaluation on the impact the development will have on state highways in the community.

Similar information is available on VDOT's review of local comprehensive plans.

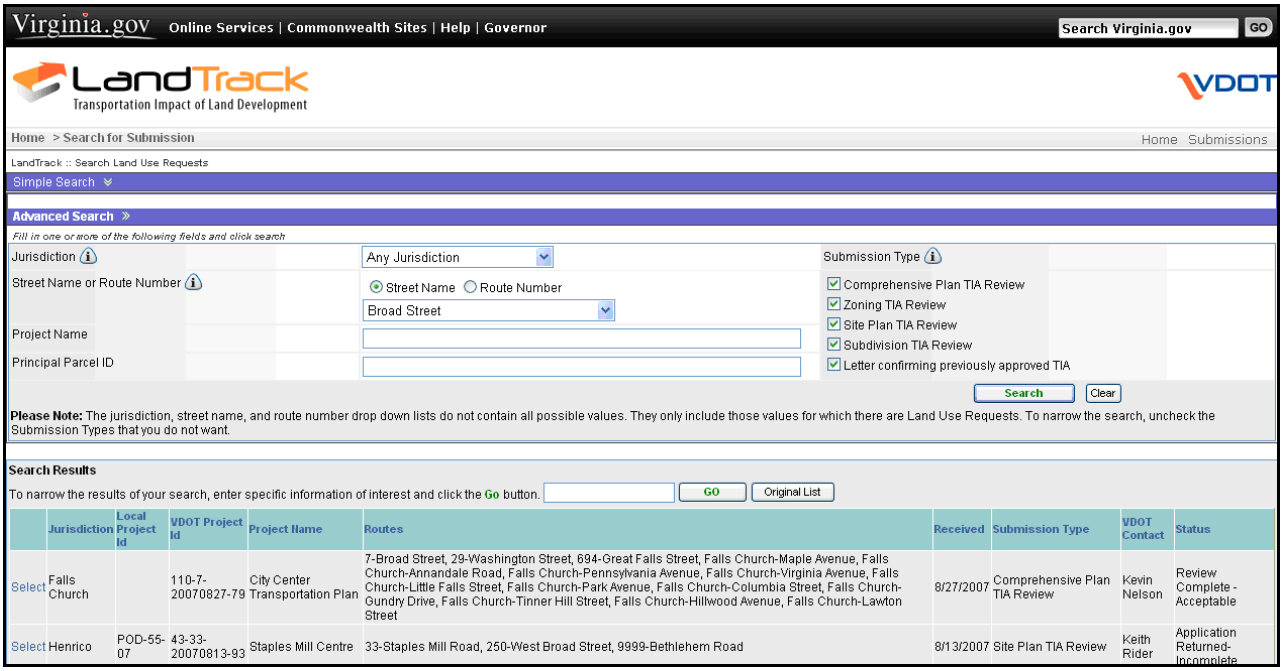
In addition, the LandTrack web page provides general information on the LandTrack system and the Chapter 527 regulations, including an internet link to the VDOT Land Development web page where the regulations and the Administrative Guidelines manual can be found.

A "Help" button is included that contains a telephone number for contacting VDOT about problems using the system as well as a "Feedback" button that offers an email form for the public to send any comments about LandTrack to VDOT.

LandTrack also will allow the public to monitor VDOT's efficiency in processing submittals according to the review deadlines established by state law.

For example, the Dashboard gauge on the home page shows the number of completed Chapter 527 reviews statewide and by District. It indicates how well VDOT is doing in completing the reviews: early, on-time, or late. Every submittal within the system indicates the deadline for VDOT to complete its review along with the actual date of completion.

Creating the LandTrack system for the general public demonstrates VDOT's commitment to providing transparency to its regulatory activities which can lead to a better understanding of VDOT programs and VDOT's efforts to administer the programs in the most efficient and effective manner.



APPENDIX

A. PRE-SCOPE OF WORK MEETING FORM: Information provided by the rezoning applicant prior to the meeting on the project and the initial traffic impact analysis base assumptions*****

B. SCOPE OF WORK MEETING CHECKLISTS AND FORMS

1. *Checklist:* Required Elements of a VDOT Traffic Impact Analysis Study*****
2. *Checklist:* Required Elements of "Low Volume Road" VDOT Traffic Impact Analysis Study*****
3. *Meeting Conclusions:* Additions/Changes to the Elements, Methodology, Assumptions; Signature Page.

C. VDOT CHECKLISTS

1. *Checklist:* Evaluation of the Submitted VDOT TIA Study*****
2. *Checklist:* Evaluation of the Submitted Low Volume Road VDOT TIA Study*****

D. SAMPLE TRANSMITTAL LETTERS TO A LOCALITY

Two letters are included that offer suggested language for communicating with the locality on the results of VDOT's evaluation of a proposed rezoning's traffic impact analysis or of a comprehensive plan or amendment.

1. Rezoning Application
2. Comprehensive Plan or Plan Amendment

E. CHANGES TO THE REGULATIONS EFFECTIVE DECEMBER 31, 2011

***** The forms and checklists are available on the VDOT Traffic Impact Analysis Regulations website in a MS Word editable format so answers can be typed on the form or checklist.

Virginia Department of Transportation

PRE-SCOPE OF WORK MEETING FORM

Information on the Project and the Traffic Impact Analysis Base Assumptions

The applicant is responsible for entering the relevant information and submitting the form to VDOT and the locality no less than three (3) business days prior to the meeting. If a form is not received by this deadline, the scope of work meeting may be postponed.

Contact Information	
Consultant Name: Tele: E-mail:	
Developer/Owner Name: Telephone: E-mail:	

Project Information				
Project Name:			Locality/County:	
Project Location: (Attach regional and site specific location map)				
Submission Type:	Comp Plan ☐		Rezoning ☐	
Project Description: (Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary)				
Proposed Use(s): (Check all that apply; attach additional pages as needed)	Residential ☐	Commercial ☐	Mixed Use ☐	Other ☐
	Residential Use(s) Number of Units: _____ ITE LU Code(s): 1._____ 2._____ 3._____ 4._____ **Commercial Use(s)** ITE LU Code(s): 1._____ 2._____ 3._____ 4._____		Square Feet or Other Variable: 1._____ 2._____ 3._____ 4._____ **Other Uses:** ITE LU Code(s): 1._____ 2._____ 3._____ 4._____ Independent Variable(s): 1._____ 2._____	
Total Peak Hour Trip Projection	Less than 100 ☐	100 - 499 ☐	500 - 999 ☐	1,000 or more ☐

It is important for the applicant to provide sufficient information to the locality and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Traffic Impact Analysis Assumptions			
Study Period	Existing Year: _____	Build-out Year: _____	Design Year: _____
Study Area Boundaries (Attach map)	North:	South:	
	East:	West:	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)			
Consistency With Comprehensive Plan (Land Use, Transportation Plan)			
Available Traffic Data (Historical, forecasts)			
Trip Distribution (Attach Sketch)	Road Name: _____	Road Name: _____	
	Road Name: _____	Road Name: _____	
Annual Vehicle Trip Growth Rate:		Peak Period for Study	☐ AM ☐ PM ☐ SAT
		Peak Hour of the Generator	
Study Intersections and/or Road Segments (Attach additional sheets as necessary)	1.	6.	
	2.	7.	
	3.	8.	
	4.	9.	
	5.	10.	
Trip Adjustment Factors	Internal allowance: ☐ Yes ☐ No Reduction: _____% trips	Pass-by allowance: ☐ Yes ☐ No Reduction: _____% trips	
Software Methodology	☐ Synchro ☐ HCS ☐ SIDRA ☐ CORSIM ☐ Other _____		
Traffic Signal Proposed or Affected Analysis software to be used, progression speed, cycle length			

It is important for the applicant to provide sufficient information to the locality and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Improvement(s) Assumed or to be Considered	
Background Traffic Studies Considered	
Plan Submission	☐ Master Development Plan (MDP) ☐ Generalized Development Plan (GDP) ☐ Preliminary/Sketch Plan ☐ Other Plan type
Additional Issues to be addressed	☐ Queuing analysis ☐ Actuation/Coordination ☐ Weaving analysis ☐ Merge analysis ☐ Bike/Ped Accommodations ☐ Intersection(s) ☐ TDM Measures ☐ Other _____

NOTES on ASSUMPTIONS:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

SIGNED: _____ DATE: _____
Applicant or Consultant

PRINT NAME: _____
Applicant or Consultant

It is important for the applicant to provide sufficient information to the locality and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Traffic Impact Analysis Regulations

24VAC30-155

SCOPE OF WORK MEETING

CHECKLISTS AND FORMS

Page

SCOPE OF WORK MEETING CHECKLIST

REQUIRED ELEMENTS OF A VDOT TRAFFIC IMPACT ANALYSIS STUDY

☑	Item	Site Generated Peak Hour Trips		
		Less than 500	**500 to 999**	**1,000 or more**
	Background Information			
	List of all non-existent transportation improvements assumed in the analysis	Required	Required	Required
	Map of site location, description of the parcel, general terrain features, and location within the jurisdiction and region.	Required	Required	Required
	Description of geographic scope / limits of study area.	Within 2,000 feet of site and any roadway on which 50 or more of the new vehicle peak hour trips generated by the proposal are distributed - not to exceed one mile.	Within 2,000 feet of site and any roadway on which 10% or more of the new vehicle trips generated by the proposal are distributed – not to exceed two miles.	To be determined by VDOT in consultation with the locality
	Plan at an engineering scale of the existing and proposed site uses.	Required	Required	Required
	Description and map or diagram of nearby uses, including parcel zoning.	Required	Required	Required
	Description and map or diagram of existing roadways.	Required	Required	Required
	Description and map or diagram of programmed improvements to roadways, intersections, and other transportation facilities within the study area.	Required	Required	Required
	Analysis of Existing Conditions			
	Collected daily and peak hour of the generator traffic volumes, tabulated and presented on diagrams with counts provided in an appendix.	Required	Required	Required
	Analyses for intersections and roadways identified by VDOT. Delay and Level of Service (LOS) are tabulated and LOS is presented on diagrams for each lane group.	Required	Required	Required

☑	Item	Site Generated Peak Hour Trips		
		Less than 500	**500 to 999**	**1,000 or more**
	When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route or routes and segment or segments, tabulated and presented on diagrams, if facilities or routes exist.	Within 2,000 feet of site	Within 2,000 feet of site	To be determined by VDOT in consultation with the locality ①
	Speed Study ②	If requested by VDOT	If requested by VDOT	If requested by VDOT
	Crash history near site ③	If requested by VDOT	If requested by VDOT	If requested by VDOT
	Sight distance ④	If requested by VDOT	If requested by VDOT	If requested by VDOT
	Analysis of Future Conditions Without Development ⑤			
	Description of and justification for the method and assumptions used to forecast future traffic volumes.	Required	Required	Required
	Analyses for intersections and roadways as identified by VDOT. Delay and Level of Service (LOS) are tabulated and LOS is presented on diagrams for each lane group.	Required	Required	Required
	When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route or routes and segment or segments tabulated and presented on diagrams, if facilities or routes exist or are planned.	Within 2,000 feet of site	Within 2,000 feet of site	To be determined by VDOT in consultation with the locality at the scope of work meeting ①
	Trip Generation			
	Site trip generation, with tabulated data, broken out by analysis year for multi-phase developments, and including justification for deviations from ITE rates, if appropriate.	Required	Required	Required

☑	Item	Site Generated Peak Hour Trips		
		Less than 500	**500 to 999**	**1,000 or more**
	Description and justification of internal capture reductions for mixed use developments and pass-by trip reductions, if appropriate, including table of calculations used.	Required	Required	Required
	Site Traffic Distribution and Assignment			
	Description of methodology used to distribute trips, with supporting data.	Required	Required	Required
	Description of the direction of approach for site generated traffic and diagrams showing the traffic assignment to the road network serving the site for the appropriate time periods.	Required	Required	Required
	Analysis of Future Conditions With Development ⑥			
	Forecast daily and peak hour of the generator traffic volumes on the highway network in the study area, site entrances and internal roadways, tabulated and presented on diagrams.	Future background + site generated traffic, at each expected phase and at build-out or six years after start, whichever is later	Future background + site generated traffic, at each expected phase, at build-out, and six years after build-out, which may be extended or reduced by VDOT in consultation with the locality	At a minimum the future background + site generated traffic, at each expected phase, at build-out, and six years after build-out; may be extended by VDOT in consultation with the locality
	Analyses for intersections and roadways identified by VDOT. Delay and Level of Service (LOS) are tabulated and LOS presented on diagrams for each lane group.	Required	Required	Required
	When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route or routes and segment or segments tabulated and presented on diagrams, if facilities exist or are planned.	Within 2,000 feet of site	Within 2,000 feet of site	To be determined by VDOT in consultation with the locality ①

☑	Item	Site Generated Peak Hour Trips		
		Less than 500	**500 to 999**	**1,000 or more**
	Recommended Improvements			
	Description and diagram of the location, nature, and extent of proposed improvements, with preliminary cost estimates as available from VDOT.	Required	Required	Required
	Description of methodology used to calculate the effects of travel demand management (TDM) measures, if proposed, with supporting data.	Required if TDM proposed	Required if TDM proposed	Required if TDM proposed
	Analyses for all proposed and modified intersections in the study area under the forecast and site traffic. Delay, and Level of Service (LOS) are tabulated and LOS presented on diagrams for each lane group. For intersections expected to be signalized, MUTCD Signal Warrant analysis or ITE Manual for Traffic Signal Design, as determined by VDOT, presented in tabular form.	Required	Required	Required
	When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route or routes and segment or segments tabulated and presented on diagrams, if facilities or routes exist or are planned.	Within 2,000 feet of site	Within 2,000 feet of site	To be determined by VDOT in consultation with the locality ①
	Conclusions			
	Clear, concise description of the study findings.	Required	Required	Required

Footnotes

① Analysis of pedestrian, bicycle, and/or transit facilities should be provided only in instances where such facilities, services are present in the area or are planned for the area, or if the development is of a type that can be expected to generate significant trips of the appropriate type. Generally speaking, isolated developments in rural or low density suburban areas will not have a need for pedestrian, bicycle, or transit analysis.

② Speed studies may be necessary when there is reason to believe that operational or geometric conditions on a roadway result in speeds that vary considerably from the posted speed limits. In those situations, they should be requested when entrance construction is expected to occur in the short term (within a few years) and without a complete rebuilding of the roadway at the location of concern, as changes in local conditions can be expected to have an impact on the road's operating speed.

If a speed study is not requested under the TIA regulations, it may still be required at the land use (entrance) permit stage in order to address specific concerns.

③ Crash history data and analysis should be requested if a particular location affected by a development's traffic is suspected to have a higher crash rate than similar locations in the region and the development's traffic may contribute to the problem. Crash history should not be requested if there is a project to address the crash problem already planned and which will be completed by the time the development is expected to be generating traffic.

④ Sight distance information and measurement or calculation is necessary at the land use permit stage of development. Substandard sight distance at locations has resulted in the need for developers to rebuild roadways, conduct extensive grading operations, or relocate planned entrances. Therefore, while generally not necessary at the rezoning stage, providing this information as early in the development process as possible will help the developer avoid unnecessary costs.

⑤ Analysis of Future Conditions With Development. How far into the future projections are required for analysis is based on trip generation. For sites generating less than 500 VPH, at build-out or 6 years after start (whichever is later) is used; for 500-999 VPH, 6 years after build-out; for 1000+ VPH, 6 years after build-out, but the time may be extended in consultation with the locality.

The base date for the projection will depend on the type of development. The base date for a commercial development is typically the opening date, which unless phased, is at full build-out on opening date. However with a residential development, the opening date and full build-out can produce very different traffic conditions. Existing conditions are the base, but require analysis of opening, each phase, and build-out.

SCOPE OF WORK MEETING CHECKLIST

REQUIRED ELEMENTS OF A "LOW VOLUME ROAD" TIA

Residential development with low trip generation (**400** vehicle trips per day) generally does not affect the highway network very far from the site. The focus of the analysis is on the road fronting the development and the nearest intersection.

The traffic impact analysis study for such submissions will need to address the following elements:

☐ Executive Summary: Site location and study area; description of the proposed development; conclusions; recommendations.

☐ All elements contained in the Background Information portion of the Required Elements table, except the geographic scope/limits of the study area is limited to the highway fronting the proposed development and the closest intersection with a highway that has an average daily traffic volume higher than the fronting highway.

☐ A roadway safety inventory study of the roadway segment or segments between the site entrance to the nearest intersections with the higher traffic volume highways, to include such elements as:

- Speed limit
- Pavement and shoulder type
- Intersection sight distances
- Safe horizontal curve speeds
- Distances to nearby existing entrances
- Existing warning signs
- Pavement and shoulder width
- Horizontal and vertical alignments
- Sight distance
- Crash history in proximity to the site

☐ Daily and peak hour traffic volumes presented on diagrams, with counts provided in an appendix:

- For the fronting highway at the site,
- At the highway's intersections with the higher volume highway, and
- For the higher volume highways at their intersection with the fronting highway.

☐ All relevant elements in the Trip Generation portion of the Required Elements table.

☐ Projected daily and peak hour of the generator traffic volumes assuming build-out of the proposal, presented on diagrams for the receiving highway:

- At the site,
- At the highway's intersection with the higher volume highways, and
- For the higher volume highways at their intersections with the receiving highway.

☐ Delay/level of service analysis for the receiving highway intersections with the higher volume highways.

☐ A comparison of the existing geometrics of the fronting highway under proposed build-out traffic conditions with the geometric standards, based upon functional classification and volume, contained in VDOT's Road Design Manual.

☐ Description and diagram of the location, nature, and extent of the proposed improvements, with preliminary cost estimates as available from VDOT.

☐ Clear, concise description of the study findings.

SCOPE OF WORK MEETING CONCLUSIONS

ADDITIONS TO THE VDOT REQUIRED ELEMENTS, CHANGES TO THE METHODOLOGY OR STANDARD ASSUMPTIONS, AND SIGNATURE PAGE

Any additions to the VDOT Required Elements or changes to the Methodology or Standard Assumptions due to special circumstances that are approved by VDOT:

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The applicant will contact VDOT and the locality prior to the preparation of the traffic impact analysis study in the event there are any substantial changes in the existing conditions that will affect the scope of the study**.**

AGREED: _____ DATE: _____
Applicant or Consultant

PRINT NAME: _____
Applicant or Consultant

SIGNED: _____ DATE: _____
VDOT Representative

PRINT NAME: _____
VDOT Representative

SIGNED: _____ DATE: _____
Local Government Representative

PRINT NAME: _____
Local Government Representative

Traffic Impact Analysis Regulations

24VAC30-155

VDOT CHECKLISTS

Page

VDOT CHECKLIST

EVALUATION of the SUBMITTED VDOT TRAFFIC IMPACT ANALYSIS

☑	ITEM PROVIDED OR NOT APPLICABLE (NA)
	Verify Use of Methodology and Standard Assumptions in Regulations (or Changes Approved at Scope of Work Meeting)
	Verify any Additions to Required Elements Approved at Scope of Work Meeting
	Introduction and Summary
	Purpose of report and study objectives
	Executive Summary: Site location and study area; description of the proposed development; conclusions; recommendations.
	Background Information
	List of all non-existent transportation improvements assumed in the analysis
	Map of site location, description of the parcel, general terrain features, and location within the jurisdiction and region.
	Comprehensive plan recommendations for the subject property
	Current and proposed zoning of the subject property
	Description of geographic scope / limits of study area.
	Plan at an engineering scale of the existing and proposed site uses.
	Description and map or diagram of nearby uses, including parcel zoning.
	Description and map or diagram of existing roadways.
	Description and map or diagram of programmed improvements to roadways, intersections, and other transportation facilities within the study area.
	Analysis of Existing Conditions
	Collected daily and peak hour of the generator traffic volumes, tabulated and presented on diagrams with counts provided in an appendix.
	Analyses for intersections and roadways identified by VDOT. Delay and Level of Service (LOS) are tabulated and LOS is presented on diagrams for each lane group.

☑	ITEM PROVIDED OR NOT APPLICABLE (NA)
	When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route(s) and segment(s), tabulated and presented on diagrams, if facilities or routes exist.
	Speed Study
	Crash history near site
	Sight distance
	Analysis of Future Conditions Without Development
	Description of and justification for the method and assumptions used to forecast future traffic volumes.
	Analyses for intersections and roadways as identified by VDOT. Delay and Level of Service (LOS) are tabulated and LOS is presented on diagrams for each lane group.
	When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route(s) and segment(s) tabulated and presented on diagrams, if facilities or routes exist or are planned.
	Trip Generation
	Site trip generation, with tabulated data, broken out by analysis year for multi-phase developments, and including justification for deviations from ITE rates, if appropriate.
	Description and justification of internal capture reductions for mixed use developments and pass-by trip reductions, if appropriate, including table of calculations used.
	Site Traffic Distribution and Assignment
	Description of methodology used to distribute trips, with supporting data.
	Description of the direction of approach for site generated traffic and diagrams showing the traffic assignment to the road network serving the site for the appropriate time periods.
	Analysis of Future Conditions With Development
	Forecast daily and peak hour of the generator traffic volumes on the highway network in the study area, site entrances and internal roadways, tabulated and presented on diagrams.
	Analyses for intersections and roadways identified by VDOT. Delay and Level of Service (LOS) are tabulated and LOS presented on diagrams for each lane group.
	When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route(s) and segment(s) tabulated and presented on diagrams, if facilities exist or are planned.

☑	ITEM PROVIDED OR NOT APPLICABLE (NA)
	Recommended Improvements
	Description and diagram of the location, nature, and extent of proposed improvements, with preliminary cost estimates as available from VDOT.
	Description of methodology used to calculate the effects of travel demand management (TDM) measures, if proposed, with supporting data.
	Analyses for all proposed and modified intersections in the study area under the forecast and site traffic. Delay, and Level of Service (LOS) are tabulated and LOS presented on diagrams for each lane group. For intersections expected to be signalized, MUTCD Signal Warrant analysis or **ITE Manual for Traffic Signal Design**, as determined by VDOT, presented in tabular form.
	When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route(s) and segment(s) tabulated and presented on diagrams, if facilities or routes exist or are planned.
	Conclusions
	Clear, concise description of the study findings.

NOTES:_____

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SIGNED: _____ DATE: _____
VDOT Representative

PRINT NAME: _____
VDOT Representative

VDOT CHECKLIST

EVALUATION of the SUBMITTED **"LOW VOLUME ROAD"**
VDOT TRAFFIC IMPACT ANALYSIS

☑	**ITEM PROVIDED OR NOT APPLICABLE (NA)**
	Verify Use of Methodology and Standard Assumptions in Regulations (or Changes Approved at Scope of Work Meeting)
	Verify any Additions to Elements Approved at Scope of Work Meeting
	Summary
	Executive Summary: Site location and study area; description of the proposed development; conclusions; recommendations.
	Background Information
	All elements contained in the Background Information portion of the Required Elements table:
	- Except the geographic scope/limits of the study area is limited to the highway fronting the proposed development and
	- The closest intersection with a highway that has an average daily traffic volume higher than the fronting highway.
	Roadway Safety Inventory Study
	A roadway safety inventory study of the roadway segment or segments between the site entrance to the nearest intersections with the higher traffic volume highways, to include such elements as:
	- Speed limit
	- Existing warning signs
	- Pavement and shoulder type
	- Pavement and shoulder width
	- Intersection sight distances
	- Horizontal and vertical alignments

☑	ITEM PROVIDED OR NOT APPLICABLE (NA)
	- Safe horizontal curve speeds
	- Sight distance
	- Distances to nearby existing entrances
	- Crash history in proximity to the site
	Daily and Peak Hour Traffic Volumes
	Daily and peak hour traffic volumes presented on diagrams, with counts provided in an appendix:
	- For the fronting highway at the site,
	- At the highway's intersections with the higher volume highway, and
	- For the higher volume highways at their intersection with the fronting highway.
	Trip Generation
	All relevant elements in the Trip Generation portion of the Required Elements table.
	Projected Daily and Peak Hour Volumes Assuming Build-Out
	Projected daily and peak hour of the generator traffic volumes assuming build-out of the proposal, presented on diagrams for the receiving highway:
	- At the site,
	- At the highway's intersection with the higher volume highways, and
	- For the higher volume highways at their intersections with the receiving highway.
	Intersection Level of Service Analysis
	Delay and level of service analysis for the intersections of the receiving highway with the higher volume highways.
	Geometrics of the Fronting Highway
	A comparison of the existing geometrics of the fronting highway under proposed build-out traffic conditions with the geometric standards, based upon functional classification and volume, contained in the Road Design Manual (24VAC30-155-100).

☑	ITEM PROVIDED OR NOT APPLICABLE (NA)
	Recommended Improvements
	Description and diagram of the location, nature, and extent of the proposed improvements, with preliminary cost estimates as available from VDOT.
	Conclusions
	Clear, concise description of the study findings.

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SIGNED: _____ DATE: _____
VDOT Representative

PRINT NAME: _____
VDOT Representative

Traffic Impact Analysis Regulations

24VAC30-155

SAMPLE TRANSMITTAL LETTERS TO A LOCALITY

Two letters offer suggested language for communicating with the locality on the results of VDOT's evaluation of a proposed rezoning's traffic impact analysis or the evaluation of a locality's comprehensive plan or amendment.

1. Rezoning Application

2. Comprehensive Plan or Plan Amendment

SAMPLE TRANSMITTAL LETTER TO A LOCALITY

Rezoning Application

County Administrator or City Manager
County or City
Street Address
City, Virginia Zip Code

Dear :

In accordance with §15.2-2222.1 of the Code of Virginia and the Virginia Traffic Impact Analysis Regulations, 24VAC30-155, a traffic impact analysis was prepared by _____ on the rezoning application for the proposed development project entitled_____ submitted by _____[applicant].

We have evaluated this traffic impact analysis and prepared a report that summarizes the key findings and includes our comments on the accuracy of the methodologies, assumptions and conclusions presented in the analysis. [If appropriate add "VDOT's report also includes comments on improvements to the transportation system that are recommended to mitigate the effects of the traffic that will be produced by the proposed development project"].

Both our report and comments and the traffic impact analysis are attached to assist the Planning Director, the Planning Commission and/or the Board of Supervisors (City or Town Council) in their decision-making process regarding the proposed development.

I am available at your convenience to meet with you, the Planning Director, the Planning Commission, and the Board of Supervisors (City or Town Council) to discuss the findings of our analysis and our comments and answer any questions. I also would appreciate the opportunity to present our comments on the key findings from the traffic impact analysis study at any public meeting on the above referenced project.

Finally, I ask that you arrange to have VDOT's official comments included in the official public records (meeting minutes, staff report) on the proposed project and to have this letter, our comments and report, and the traffic impact analysis study placed in the case file for the rezoning application. VDOT will make these documents available to the general public through various means such as posting them on our website.

Sincerely,

cc: Director of Planning
Rezoning Applicant

SAMPLE TRANSMITTAL LETTER TO A LOCALITY
Comprehensive Plan or Plan Amendment

County Administrator or City Manager
County or City
Street Address
City, Virginia Zip Code

Dear :

In accordance with the Virginia Traffic Impact Analysis Regulations, 24VAC30-155, your proposed comprehensive plan [comprehensive plan amendment] was submitted to the Virginia Department of Transportation (VDOT) for review on _____ because it was anticipated that the plan would create a substantial impact or substantial change to the existing transportation network of state highways.

We have evaluated the comprehensive plan [comprehensive plan amendment] and prepared a report and written comments on the results of our evaluation. The report presents a summary of our key findings as well as detailed comments on the future transportation improvements that will be needed to support the current and planned development of the locality. [We also have included cost estimates for the transportation improvements referenced in our report.]

Our report and comments are attached to assist the Planning Director, the Planning Commission and the Board of Supervisors (City or Town Council) in their decision-making process regarding the comprehensive plan [comprehensive plan amendment].

I am available at your convenience to meet with you, the Planning Director, the Planning Commission, and the Board of Supervisors (City or Town Council) to discuss our report and written comments and answer any questions. I also would appreciate the opportunity to present the results of our evaluation at any public meeting on the comprehensive plan [comprehensive plan amendment].

Finally, I ask that you arrange to have VDOT's official comments included in the locality's official public records (meeting minutes, staff report) and to have both this letter and VDOT's report and written comments placed in the official file for the comprehensive plan [comprehensive plan amendment]. VDOT will make these documents available to the general public through various means such as posting them on our website.

Sincerely,

cc: Director of Planning

CHANGES TO THE REGULATIONS DECEMBER 31, 2011

Adoption of a Mixed Use Trip Generation Model

During 2011, VDOT selected an alternative non-ITE trip generation methodology that is automatically approved for use when a locality conducts a single traffic impact analysis for all parcels within a small area plan that is part of the comprehensive plan. This traffic impact analysis study can then be used for a rezoning proposed for a parcel within the boundaries of the small area plan.

It can also be used for a mixed use development when approved by VDOT at a scope of work meeting. The methodology, Mixed Use Trip Generation Model V 4.0, considers the trip reduction for mixed use development (see page 43 in the Traffic Impact Analysis chapter).

Revisions Required by 2011 General Assembly Legislation

SITE PLANS, SUBDIVISION PLATS EXEMPT FROM TIA REGULATIONS. The 2011 General Assembly amended §15.2-2222.1 (see page 3) so that effective July 1, 2011 localities were no longer required to submit site plans and subdivision plats to VDOT for review if they will substantially affect transportation on state highways. The provisions in the regulations that applied to these land development documents have been deleted.

REZONING THAT IS CONSISTENT WITH A VDOT TIA REGULATION REVIEWED COMPREHENSIVE PLAN. §15.2-2222.1 was amended to require VDOT's review of a rezoning proposal to be more limited in scope if it is consistent with a locality's comprehensive plan that has been previously reviewed pursuant to the regulations. The regulations have been amended to reduce the scope of traffic impact analysis study criteria for a rezoning proposal that conformed to a comprehensive plan reviewed by VDOT during which anticipated traffic impacts of the plan were evaluated based on the future land use map (see page 44).

Chapter 870 Changes to the Regulations

Chapter 870 of the 2011 Acts of Assembly directed VDOT to review and adopt appropriate revisions to the regulations. Multiple methods were used to collect public input. An Advisory Committee was established with representatives from localities, engineering firms, land development groups, and growth management organizations. The Committee discussed issues of concern, reviewed public comments, and recommended revisions. The changes were adopted by VDOT's Commissioner on November 3 and became effective December 31, 2011.

INCREASED TRIP GENERATION THRESHOLDS FOR REZONING SUBMITTALS. State law requires VDOT to review rezoning proposals that will substantially affect transportation on state highways. The submittal threshold for rezoning proposals has been raised to concentrate on larger developments of a more regional scale.

The trip generation threshold requiring the submittal of a rezoning proposal to VDOT is increased from 100 peak hour trips for residential and 2,500 daily trips for other land uses to a new 5,000 vehicle trips per day threshold for all land uses. For residential developments on low volume roads, the trip generation threshold increased from 200 VPD to 400 VPD (see pages 23–26).

LOCAL TRAFFIC IMPACT STATEMENT. A rezoning applicant will now be able to submit a traffic impact analysis study prepared according to locality requirements that are certified by VDOT as meeting acceptable standards of professional practice. A developer will not have to prepare separate traffic impact studies according to a locality's and VDOT's requirements. Once certified by VDOT, the local study can serve both purposes. For a TIA submittal, if the locality has not established traffic impact study criteria, then the study will be prepared according to the methodology and assumptions in the regulations (see Local Traffic Impact Statement on page 41).

REZONING SUBMITTAL NOT REQUIRED BASED ON USES ALLOWED UNDER CURRENT ZONING OF PROPERTY. The regulations do not apply to a rezoning proposal, even if the proposal meets one of the above thresholds, if the rezoning will generate less daily traffic, and no increase in the existing hourly traffic, when compared to the trip generation of land uses allowed by right under the current zoning of the property, except governmental uses.

For example, if currently zoned residential and the property is proposed to be rezoned to allow a neighborhood type shopping center and the commercial use would generate less than or equal to the traffic that could be produced by a subdivision or an apartment complex of a density that would be allowed under the current zoning, then the commercial rezoning proposal would be exempt from the regulations (see Exemptions in Rezoning Chapter on page 26).

DEADLINE ESTABLISHED TO SCHEDULE A SCOPING MEETING. VDOT staff shall schedule a meeting with the locality and the developer to discuss the preparation of a traffic impact study on a rezoning within 60 days of being contacted. This deadline helps assure that the arrangements for a scoping meeting on a rezoning proposal are handled in a timely manner (see Scope of Work Meeting on page 28).

TRAFFIC IMPACT ANALYSIS METHODOLOGY REVISED. The methodology was evaluated based on three years of experience in its application as well as new concepts and best practices in traffic impact analysis. As a result of this evaluation, certain criteria and standards are revised in the methodology and standard assumptions for preparing a VDOT traffic impact analysis study (see page 51).

NEW CRITERIA FOR DETERMINING WHEN VDOT CAN REQUIRE A REZONING PACKAGE RESUBMISSION. VDOT shall not reject or require resubmission if a rezoning package has been prepared in accordance with best professional practice and substantially documents the expected impacts of the proposal.

VDOT shall provide the rezoning applicant the opportunity and time to make modifications to information submitted under the regulations before VDOT staff return the package to the locality and require its formal resubmission.

Revisions to submittals will be accommodated in a manner so the implementation of the regulations does not unnecessarily extend the local development review process (see Rezoning Package Review Rules on page 31).

* NOTE: The above changes are referenced throughout the document by highlighting key text in **bold** and the changes to the Regulations are identified by the use of *italics*.