



Updated
Traffic Impact Analysis Regulations
Administrative Guidelines

24VAC30-155

July 2011

Land Development Section
Transportation and Mobility Planning Division
Virginia Department of Transportation
1401 East Broad Street
Richmond, Virginia 23219

Preface

To assist the reader, 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.

When reading this document on a computer, the [hyperlink](#) can be accessed by placing the mouse pointer over the highlighted item, pressing and holding down the Ctrl key, and left clicking with your mouse.

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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.

Paul Grasewicz
Transportation and Mobility Planning Division

INTRODUCTION

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 the Code of Virginia to expand VDOT's role in the land planning and development review process.

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 of Virginia 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 local governments in their planning and land use decision making process. VDOT's findings are advisory in nature.

This Code section authorized VDOT to promulgate regulations to administer this new program responsibility. The Traffic Impact Analysis Regulations Administrative Guidelines, 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 its supporting regulations, Chapter 155, 24VAC30-155 et seq. "Traffic Impact Analysis Regulations" that establish the rules, procedures, and deadlines for VDOT's review of:

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

A chapter has been prepared in the Administrative Guidelines on each of the above topics as well as on VDOT's administrative responsibilities and review fees. The specific regulations 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. 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. 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.

C. If a locality has not received written comments within the timeframes specified in subsections B or C, 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 and plans pursuant to paragraphs 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.

G. Until July 1, 2008, the Department shall not be subject to the requirements of the Administrative Process Act (§ [2.2-4000](#) et seq.) in promulgating regulations pursuant to this section, and the Commonwealth Transportation Commissioner may phase the implementation of regulations promulgated pursuant to this section as he may deem appropriate.

BACKGROUND ON THE REGULATIONS

Chapter 527, 2006 Acts of Assembly added §15.2-2222.1 to the Code of Virginia (the law as amended in 2007, 2010 and 2011 is presented on page 3) to require localities to submit rezoning proposals along with traffic impact analysis studies to VDOT if these proposals can be expected to substantially affect transportation on state-controlled highways (“state highway”). VDOT will provide the locality with advisory comments and recommendations concerning the traffic impact of the development.

This Code section also instructs localities to submit any new comprehensive plan or amendment to VDOT if it will lead to substantial impacts or changes to the existing transportation network. The intent is to improve the coordination between local planning for future growth and planning for the improvements to the transportation network to serve the growth.

The legislation directed VDOT to promulgate regulations to implement the requirements of §15.2-2222.1 of the Code. A Policy Advisory Committee with representatives from local government, planning district commissions, homebuilder and real estate associations, and other stakeholder groups helped develop the regulations. Public input was solicited.

This effort produced the Traffic Impact Analysis Regulations, 24 VAC 30-155, that:

- Establish uniform statewide standards, including methodologies and assumptions, required elements and scope of review, for traffic impact analysis studies that are submitted to VDOT for proposed developments.
- 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.
- Set out a schedule of fees for VDOT’s review based on submission type and traffic.

Recent Changes:

The 2011 General Assembly session adopted legislation to amend the statute so that effective July 1, 2011 localities are no longer required to submit site plans and subdivision plats to VDOT for review if they will substantially affect transportation on state highways. As a result, references to site plans and subdivision plats have been deleted from this document.

In accordance with the 2010 amendments to the Regulations, 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 within the boundaries of the small area plan (see the [Comprehensive Plan](#), [Rezoning](#) chapters).

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 38 in the [Traffic Impact Analysis](#) chapter).

DEFINITIONS

The Traffic Impact Analysis Regulations includes a section, 24VAC30-155-10, that provides definitions for the major terms that are used. The 2010 amended definitions for “connectivity index”, “intersection”, “network addition”, and “street segment” pertain to the traffic impact statement methodology for calculating trip reductions for pedestrian and bicycle accommodations (see pages 52 and 61). The other five new definitions concern the optional single traffic impact statement localities can prepare for parcels within a small area plan.

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:

“Connectivity index” means the number of street segments divided by the number of intersections. Only street segments and intersections within a network addition as well as any street segment or intersection outside of the network addition that is connected to street segments within the network addition or that has been connected or will be connected pursuant to 24VAC30-92-60 C 7 to the network addition through the extension of an existing stub out shall be used to calculate a network addition's connectivity index.

“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.

“Intersection” means, only for the purposes of calculating connectivity index, a juncture of three or more street segments or the terminus of a street segment such as a cul-de-sac or other dead end. The terminus of a stub out shall not constitute an intersection for the purposes of this chapter. The juncture of a street with only a stub out, and the juncture of a street with only a connection to the end of an existing stub out, shall not constitute an intersection for the purposes of this chapter, unless such stub out is the only facility providing service to one or more lots within the development.

“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).

“Redevelopment site” means any existing use that generates traffic and is intended to be developed as a different or more dense 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.

“Street segment” means (i) a section of roadway or alley that is between two intersections or (ii) a stub out or connection to the end of an existing stub out.

“Stub out” means a transportation facility (i) whose right-of-way terminates at a parcel abutting the development, (ii) that consists of a short segment that is intended to serve current and future development by providing continuity and connectivity of the public street network, (iii) that based on the spacing between the stub out and other streets or stub outs, and the current terrain there is a reasonable expectation that connection with a future street is possible, and (iv) that is constructed to the property line.

“Traffic impact statement” means the document showing how a proposed development will relate to existing and future transportation facilities.

“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 Commonwealth Transportation Commissioner, or a designee.

REVIEW OF COMPREHENSIVE PLANS & AMENDMENTS

The Local Government Comprehensive 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(s) dedicated to transportation planning or reference a separate document that serves as the community’s transportation plan (§15.2-2223). The comprehensive plan, therefore, provides policy guidance and criteria for making both land use and transportation decisions and recommendations.

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 normally supervise this effort.

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).

During the 2006 General Assembly session, §15.2-2223 of the Code was amended to expand the scope of the transportation plan in the locality's comprehensive plan. The transportation plan within the comprehensive plan should 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.

In addition, just identifying future transportation needs is no longer sufficient. §§15.2-2223 and 15.2-2224 of the Code of Virginia now require the plan to include a map showing the location of planned improvements and cost estimates for the improvements.

Localities to Submit Comprehensive Plan/Amendments to VDOT for Review

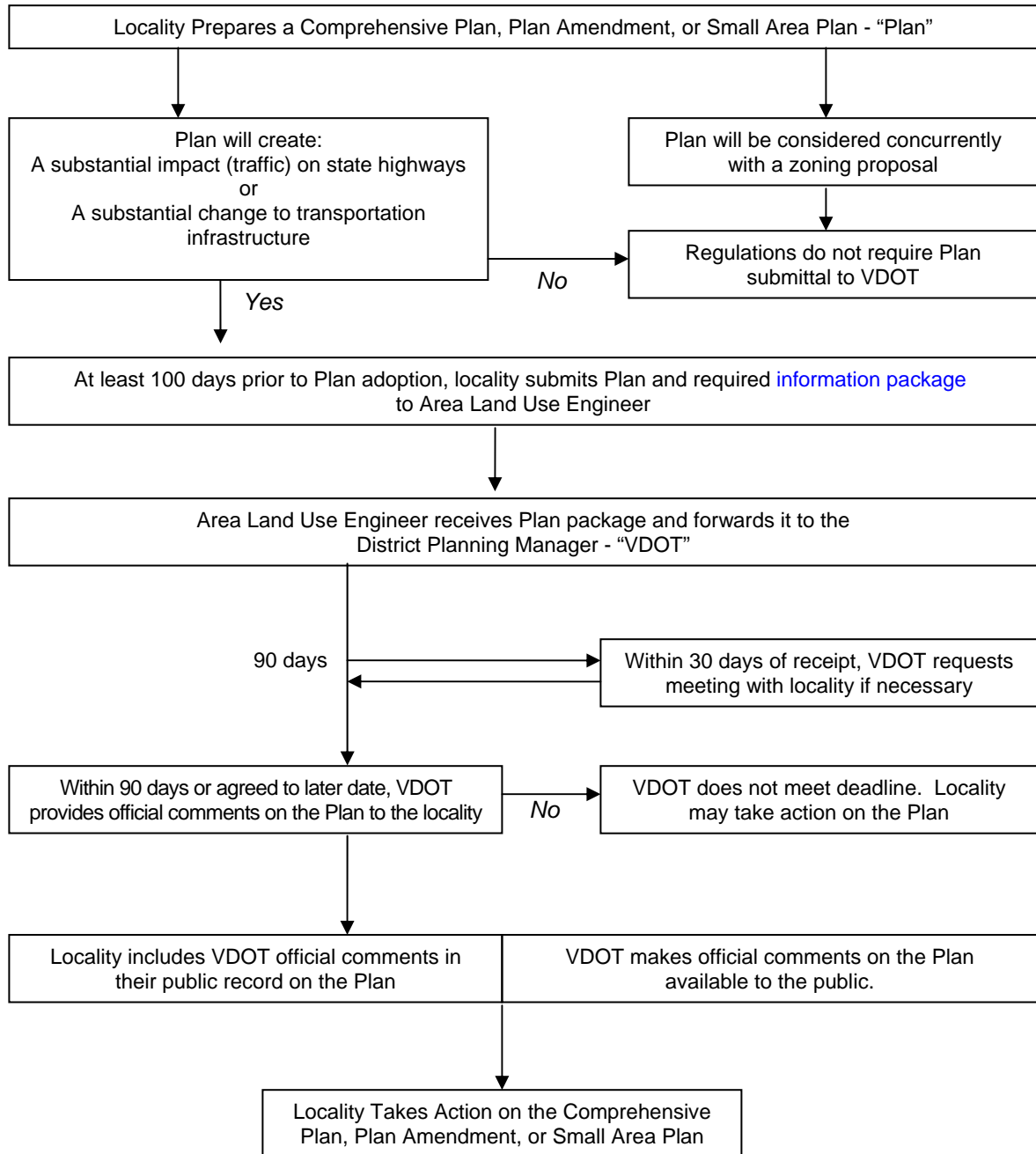
§15.2-2222.1 of the Code (see page 3) and 24VAC30-155-30.A. of the Traffic Impact Analysis Regulations (presented at the end of this Chapter) establishes that prior to the adoption of any comprehensive plan pursuant to Code sections §15.2-2223, any part of a comprehensive plan pursuant to §15.2-2228, 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 11 for more information on a small area plan):

- A locality shall submit such plan, amendment, or small area plan to VDOT for review and comment if the locality anticipates that it will result in a **substantial impact** or **substantial change** to the existing transportation network of state maintained highways.
- The locality is required to submit their comprehensive plan, plan amendment, or small area plan **at least 100 days prior to** when they estimate final action will be taken.

Localities should send their plan package to the Area Land Use Engineer at the appropriate VDOT Office.

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.

FLOW CHART: VDOT REVIEW OF A COMPREHENSIVE PLAN, PLAN AMENDMENT, OR SMALL AREA PLAN



24VAC30-155-30.A. of the regulations defines how to determine a “substantial impact” and a “substantial change” (the Table on page 26 provides examples of the number of dwellings and the size of businesses that would produce a substantial 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 assuming the highest density of permissible use in accordance with the Institute of Transportation Engineers (ITE) **Trip Generation** handbook (listed in the Reference Documents chapter on page 70) 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 or significant expansion of agricultural or forestal districts.

The Locality’s Comprehensive Plan/Amendment Package Submittal

VDOT will need sufficient information to evaluate a proposed comprehensive 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 for a small area plan amendment to the comprehensive plan.

24VAC30-155-30. B of the regulations (presented at the end of this Chapter starting on p. 17) specifies what information must be included in the comprehensive plan package submitted to VDOT. This information is summarized in a checklist format on page 15. The quickest way for the locality to send this information, and for VDOT to use internally, is in an electronic version.

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.

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 adopted. The methodology, Mixed Use Trip Generation Model V 4.0, considers the trip reduction for compact, mixed use development (see page 38 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 in the [Review of Rezoning Proposals](#) chapter).

The traffic impact analysis study for the small area plan will reduce the number of individual traffic impact analyses required for developments that are proposed within the boundaries of 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 all or a portion of an urban development area or transit-oriented development that will have a substantial impact on the state transportation network may, in lieu of submitting a comprehensive plan amendment package as discussed above, 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 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.

A small area plan package submitted to VDOT shall contain the following items:

- A cover sheet containing:
 - Contact information for locality;
 - Small area plan location,
 - Adjacent highways and transit facilities, and
 - Parcel number(s);
 - Proposal summary with development names, size, and proposed zoning;
- A traffic impact statement prepared in accordance with 24VAC30-155-60; and
- A plan of development for the area encompassed by the small area plan.

This information is summarized in a checklist format on page 15. The quickest way for the locality to send this information, and for VDOT to use 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 Director of Transportation and Land Use. 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 63).

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. 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 official 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 17) 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 74), copies at the local government offices, 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.

The Department 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.

The following chart summarizes how the Department can analyze the need for future transportation network improvements:

	Existing transportation network	Future land use, population growth, new public utilities	Deficiency analysis performed?	Deficiencies are addressed?	Cost estimates included?	Map of needed improvements
<i>Plan Element</i>						
Inventory	X					X
Assumptions	X	X				
Needs Assessment	X	X	X	X		
Recommendations	X	X	X	X	X	X

Comprehensive Plan or Plan Amendment Package Checklist*

Traffic Impact Analysis Regulations: 24VAC30-155-50

For a comprehensive plan or a transportation plan, the locality shall provide:

- A COVER SHEET**, containing:
- CONTACT INFORMATION** for the locality, and
 - 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 Federal Highway Administration’s [National Highway System](#)). 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. Details on the planning assumptions shall include, but need not be limited to 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 to serve the quantity, type, location, and density of anticipated development based on the future land use policies and maps.

It is not necessary to have the identification of specific deficiencies prepared by a transportation professional. It could be a list of transportation facilities that, in the experience of the citizens, Planning Commission, or governing board, are deficient.
 - 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.

Proposed transportation additions/improvements consistent with the future land use policies and map.

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 considering the current and future needs of the planning district within which the locality is situated.
 - COST ESTIMATES** - Recommended improvements shall include any VDOT cost estimates.
- FEES (SEE BELOW)**

For an amendment to a comprehensive plan or transportation plan, the locality shall provide:

- A COVER SHEET**, containing:
- CONTACT INFORMATION** for the locality;

- SUMMARY OF PROPOSED AMENDMENT** or amendments to the comprehensive plan or transportation plan; and
- 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 impact it may have on the transportation system.
- ELEMENTS IDENTIFIED ABOVE** (4th checkbox) 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 TRAFFIC IMPACT STATEMENT** prepared in accordance with 24VAC30-155-60.
- A PLAN OF DEVELOPMENT** for the area encompassed by the small area plan.

Fees

- 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.

NOTE: 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. (2010 General Assembly amendment to §15.2-2222.1; see page 4)

* This checklist is available 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 result in 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 assuming the highest density of permissible use in accordance with the Institute of Transportation Engineers Trip Generation Handbook (see 24VAC30-155-100) or, subject to the approval of VDOT, the regional model as adopted by the local Metropolitan Planning Organization, and 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.

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 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 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 impact 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 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**, rezoning, or site or subdivision plan, 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 (see 24VAC30-155-100), the Access Management Regulations: Principal Arterials (see 24VAC30-155-100), and the Access Management Regulations: Minor Arterials, Collectors, and Local Streets (see 24VAC30-155-100).

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: Applications for a conditional use, special use, or special exception are considered zoning proposals under the Traffic Impact Analysis Regulations.

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 can not 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).

Although a locality may be eligible to administer the two types of proffers, the District land use staff should verify that the locality has adopted conditional zoning and if so, which type.

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 be carried out.

Localities to Submit Rezoning Proposals to VDOT for Review

§15.2-2222.1 of the Code (page 3) and its supporting regulations for rezoning, 24VAC30-155-40 presented on page 33, have been designed to enhance VDOT’s ability to advise localities about how a proposed development could significantly impact the existing and future transportation network. The regulations:

- Provide criteria for determining which rezoning cases must be forwarded to VDOT.
- Provide the developer and the locality with detailed specifications on the contents of an acceptable traffic impact analysis.

§15.2-2222.1 requires localities to send, within *10 business days* of their receipt of a complete application, rezoning proposals that will *substantially affect* transportation on state-controlled highways to VDOT to review and provide comments on the transportation impacts of the proposal. The [Table](#) on page 26 provides examples of the number of dwellings and the size of businesses that would produce a substantial impact or change.

24VAC30-155-40.A of the regulations (page 33) provides the details for determining whether a rezoning application is required to be submitted to VDOT for review and comments. The details are summarized below.

A residential rezoning proposal (single family home subdivisions, apartments, townhouses) **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 100 *vehicle trips per peak hour* 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; **or**
- 2) In a jurisdiction in which VDOT does *not* have maintenance responsibility for the local highway system, a rezoning proposal that generates more than 100 vehicle trips per peak hour and whose *nearest property line* is within 3,000 feet, measured along public roads or streets, of a connection to a state highway; **or**
- 3) A rezoning proposal that meets certain **“low volume road submission”** thresholds:
 - a) It generates more than 200 *daily* vehicle trips (less than 100 vehicle trips per peak hour) on a state highway, and,
 - b) Once the site generated trips are distributed to the receiving highway, the proposal's vehicle trips on a highway exceeds 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.

NOTE: JURISDICTIONS THAT MAINTAIN OWN LOCAL ROAD SYSTEM

Item 2 above and below establish that 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 (measured along public roads or streets) of a connection to a state-controlled (VDOT maintained) highway. See the illustration on page 25.

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.

All other rezoning proposals (commercial, office, industrial, etc.) except for mixed use developments **will substantially affect** transportation on state highways if the rezoning will meet or exceed 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 will have a substantial affect if it generates more than 250 vehicle trips per peak hour or 2,500 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 located where the road network that 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; **or**
- 2) In a jurisdiction in which VDOT does *not* have maintenance responsibility for the local highway system, a rezoning proposal will have a substantial affect if it generates more than 250 vehicle trips per peak hour or 2,500 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.

For mixed use developments that combine residential and non-residential uses, the site is deemed to have a significant impact if the trips associated with the residential component exceed 100 vehicle trips per peak hour, or if the total trips generated exceed either 250 vehicle trips per peak hour or 2,500 vehicle trips per day. The distance requirement for localities that maintain their own street system still applies.

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 70) 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 6), 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.

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.

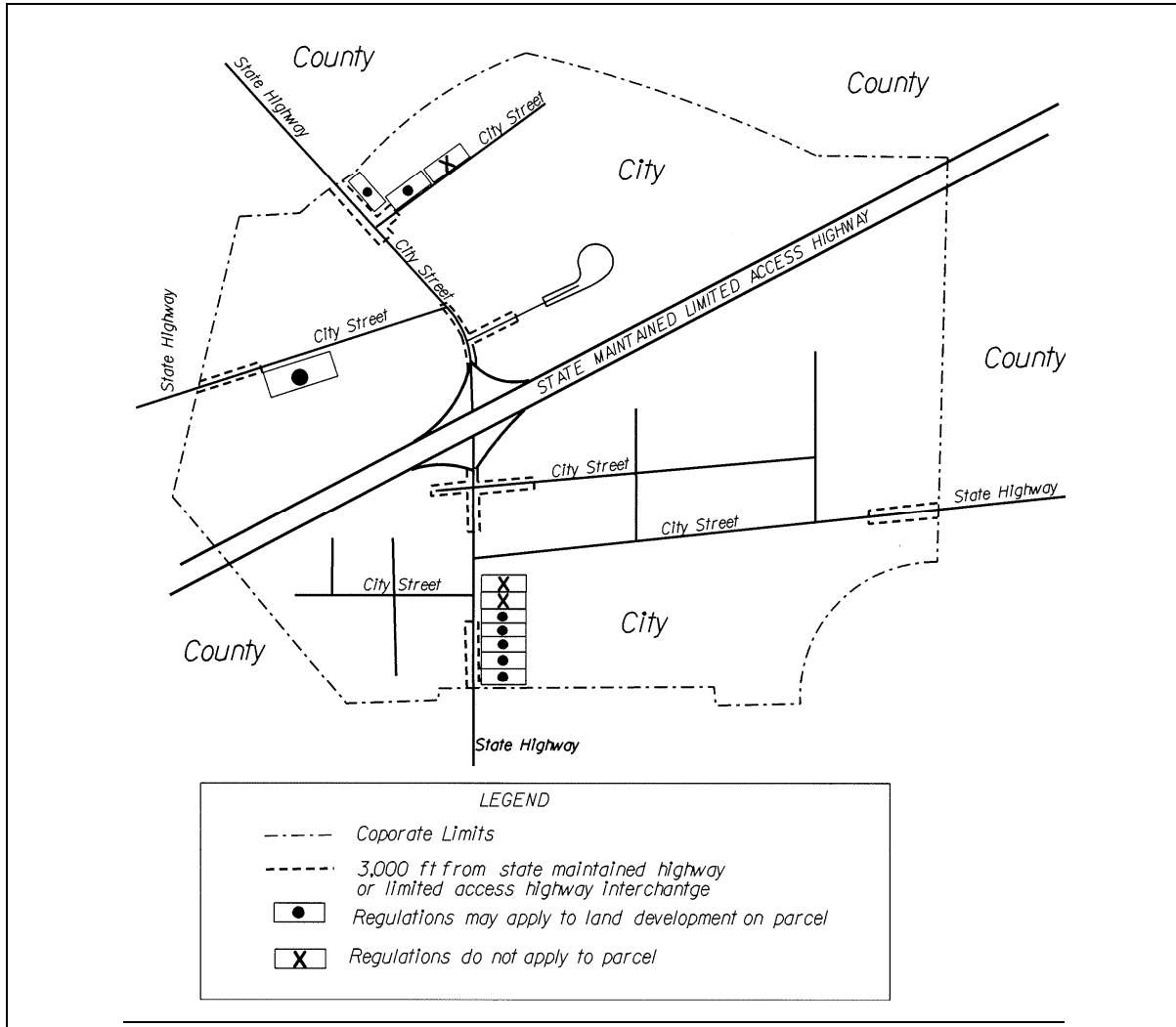


TABLE OF DEVELOPMENTS THAT WOULD MEET THE THRESHOLDS OF THE REGULATIONS				
		Comprehensive Plan Review	Commercial Site Review	Residential Site Review
Daily Traffic Threshold (veh/day)		5000	2500	
Peak Hr Threshold (veh/hr)		None	250	100
ITE Land Use				
Description	Code	Approx Size / # Units to Meet Above Threshold		
Light Industrial	110	690,000 sf	260,000 sf	
Single Family Detached	210	500 du		100 du
Apartment	220	670 du		150 du
Condo / Townhouse	230	860 du		190 du
Hotel	310		300 rooms	
Elementary School	520		600 students	
High School	530		550 students	
Hospital	610		110 beds	
General Office Building	710	460,000 sf	150,000 sf	
Business Park	770	400,000 sf	170,000 sf	
Home Impr Superstore	862	110,000 sf	60,000 sf	
Drive in Bank	912		5 bays	
Fast Food Rest w/ DrTh	934		4,000 sf	
Gas Station w/ Conv Mkt	945		16 hoses	
NOTE: These are estimates that 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, which variable within the land use code is determined to be the most appropriate to apply, and whether rates or equations are utilized.				

Vehicles – veh; Hour – Hr; Square feet – sf; Dwelling unit – du; Convenience – Conv; Drive through – DrTh; Market - Mkt.

Source: **Trip Generation** by [Microtrans™](#), Version 5 software to calculate traffic generation on the basis of the Institute of Transportation Engineers (ITE) **Trip Generation**, 7th Edition, 2003.

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 page 6; page 11 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 (see page 38 the [Traffic Impact Analysis](#) chapter) for the small area plan. The study can then serve as the traffic impact analysis study required by the Regulations for a 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,
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: The density of the rezoning proposal may deviate up to 10 percent and remain in substantial conformance with the small area plan. Also, 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.

The Locality's Rezoning Package Submittal

24VAC30-155-40.B. (presented on page 33) describes the information to be included in the rezoning package the locality sends to VDOT. The rezoning package information is summarized in a [checklist](#) format on page 31 for use by localities and VDOT. The locality needs to make sure that the rezoning package contains the specified items, which includes a traffic impact analysis study.

It is recommended that the locality include the above referenced rezoning package checklist 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.

24VAC30-155-40.C. (see page 33) describes the information to be included in submittal package for rezoning proposals associated with small area plans. The small area plan rezoning package information is summarized in a checklist format on page 32 for use by localities and VDOT. The locality needs to make sure that the rezoning package contains the specified items, which includes a copy of the traffic impact analysis study prepared for the small area plan.

Localities should send their rezoning package to the Area Land Use Engineer at the appropriate VDOT Office.

A rezoning package that does not contain the required items shall be considered deficient in meeting the submission requirements of § 15.2-2222.1 of the Code and will be returned to the locality and the applicant, if applicable, with a letter identifying the deficiencies.

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

The locality should submit a rezoning package along with the appropriate fee to the Area Land Use Engineer. This individual will coordinate the review of the submittal with the appropriate sections within the District Office (see the [VDOT Administration of the Regulations](#) chapter, page 63).

MEETING WITH THE LOCALITY. VDOT's review of the rezoning package (including the traffic impact analysis provided by the applicant) may lead to the need for the VDOT review staff to meet with the local government staff and rezoning applicant to discuss potential modifications to the rezoning proposal to address any concerns or deficiencies.

- The meeting request must be made within **45 days** of VDOT's receipt of the package.

VDOT'S OFFICIAL COMMENTS ON THE REZONING TRAFFIC IMPACT ANALYSIS. The District Transportation and Land Use Director will submit VDOT's official comments on the rezoning traffic impact analysis to the locality.

The official comments include: (i) a transmittal letter (a sample letter is presented at the end of this document) and (ii) a written report (see next page for contents) 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.

DEADLINE TO PROVIDE VDOT'S OFFICIAL COMMENTS TO THE LOCALITY. The District Transportation and Land Use Director's supervision of VDOT's review of the rezoning traffic impact analysis study must be completed so that VDOT's written comments can be sent to the locality:

- Within **45 days** of VDOT's receipt of the rezoning package if no meeting is scheduled, or
- Within **120 days** of the receipt of the rezoning package.

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 33) 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 such as through the [external LandTrack](#) web page on the VDOT web site (see page 74), at the locality's planning office, and a presentation to the locality.

Written Report and Comments on the Rezoning Traffic Impact Analysis 24VAC30-155-70

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.

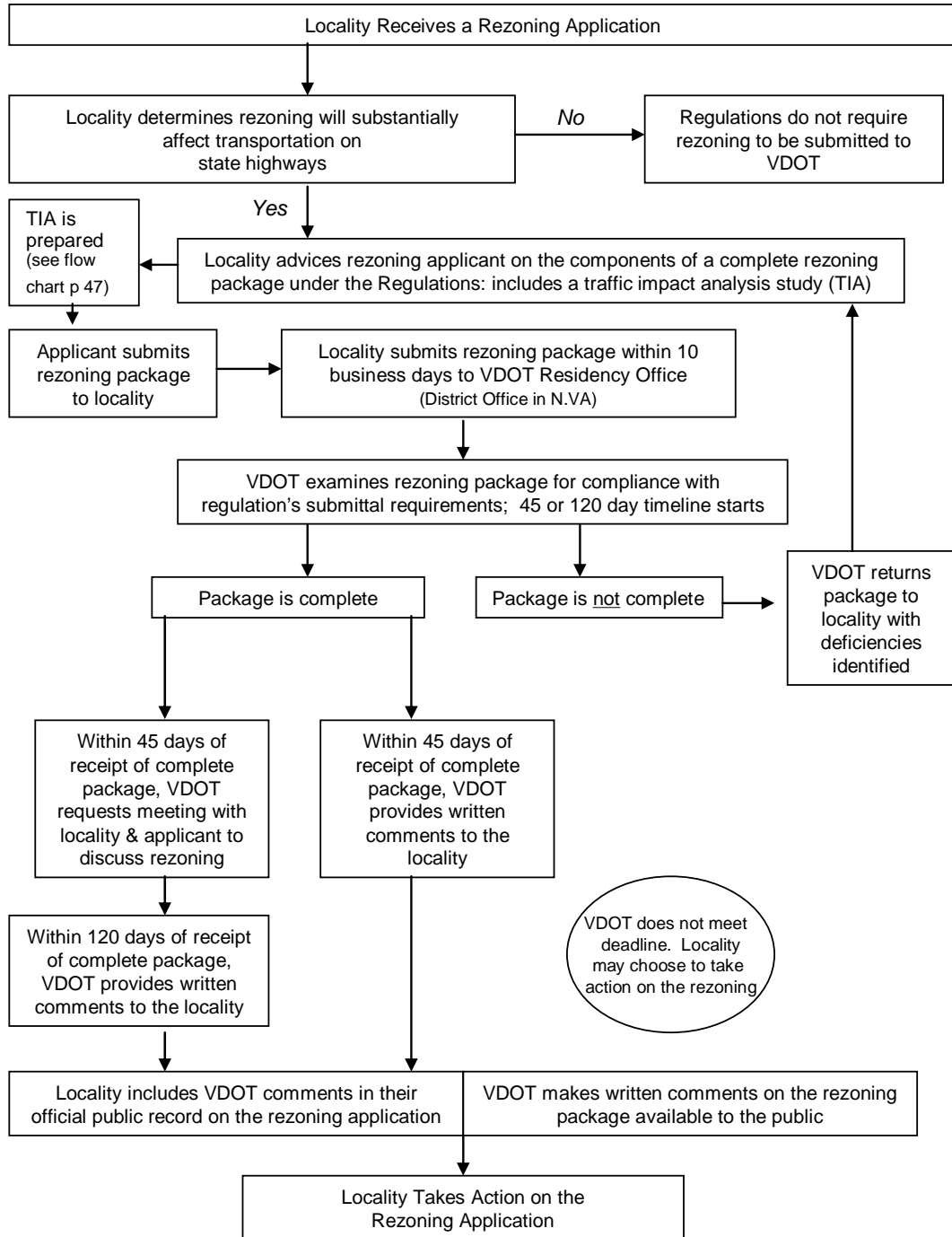
VDOT will advise the locality and the developer about other VDOT regulations that may apply as the development moves through other stages of the land development process and what changes may be needed to assure compliance. Streets within the development that are planned for state maintenance will need to meet the Secondary Street Acceptance Requirements, including the 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.

All of 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.

THE BASIC REZONING PACKAGE REVIEW 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 TRAFFIC IMPACT ANALYSIS** prepared in according to 24-VAC-30-155-60.
- 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
 - Less than 100 vehicles per peak hour - \$500
 - 100 or more vehicles per peak hour - \$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.

*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 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

*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 (see 24VAC30-155-100), 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.

1. For the purposes of this section, a residential rezoning proposal shall substantially affect transportation on state-controlled highways if it meets or exceeds one or more of the following trip generation criteria.
 - a. Within a jurisdiction in which VDOT has maintenance responsibility for the secondary highway system, if the proposal generates more than 100 vehicle trips per peak hour of the generator 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
 - b. Within a jurisdiction in which VDOT does not have maintenance responsibility for the local highway system, if the proposal generates more than 100 vehicle trips per peak hour of the generator 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
 - c. The proposal generates more than 200 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 a highway exceeds 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.
2. For the purposes of this section, all other rezoning proposals shall substantially affect transportation on state-controlled highways if they meet or exceed one or more of the following trip generation criteria:
 - a. Within a jurisdiction in which VDOT has maintenance responsibility for the secondary highway system, if the proposal generates more than 250 vehicle trips per peak hour of the generator or 2,500 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
 - b. Within a jurisdiction in which VDOT does not have maintenance responsibility for the local highway system, if the proposal generates more than 250 vehicle trips per peak hour of the generator or 2,500 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.

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 impact on state-controlled highways, and methodology and assumptions used in the analysis of the impact. 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 contain 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 traffic impact statement prepared in accordance with 24VAC30-155-60.
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 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 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 conduct its review and provide official comments to the locality for inclusion in the official public record. 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, **rezoning**, or site or subdivision plan, 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 (see 24VAC30-155-100), the Access Management Regulations: Principal Arterials (see 24VAC30-155-100), and the Access Management Regulations: Minor Arterials, Collectors, and Local Streets (see 24VAC30-155-100).

TRAFFIC IMPACT ANALYSIS

Introduction

The impact of any 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, called a traffic impact statement in the regulations. 24VAC30-155-60 on page 57 defines a traffic impact statement (traffic impact analysis) as:

A traffic impact statement 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.

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 24VAC30-155-60 **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 the 24VAC30-71-73 **Access Management Regulations: Minor Arterials, Collectors, and Local Streets** (the "[Access Management Regulations](#)").

The **Traffic Impact Analysis Regulations** provide rules and procedures for VDOT to evaluate comprehensive plans and traffic impact analyses for rezoning proposals that will *substantially affect* state-controlled highways (see the [Table](#) on page 26).

The traffic impact analysis study along with any 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. The goal is to enhance the coordination between land use and transportation planning.

The key advantage offered by these regulations is that a traffic impact analysis is required during the early in the local land development review process, when the rezoning proposal is not finalized and therefore can be modified. As a result, 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 Traffic Impact Analysis Regulations.

In addition, even if a traffic impact analysis was provided in accordance with these regulations, additional traffic analysis may be required 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.

On the other hand, there will be cases in which the **Traffic Impact Analysis Regulations** traffic impact analysis information is sufficiently detailed and up-to-date so that it also can be used for the traffic analysis needed to meet the requirements for issuing an entrance permit in 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 associated with the proposed development 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.

Overview of the Requirements/Procedures for Preparing a 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 and in the preparation of the locality's transportation improvement plans.

The regulations also provide the developer/applicant with a standard framework of assumptions, methodologies and scope of review for traffic impact analyses presented to VDOT.

The rezoning applicant is responsible for the assessment of the traffic impacts associated with a proposed development (except where the locality arranges for its preparation). 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" to be included in a traffic impact analysis (the components of the study, e.g. background information, analysis of existing conditions,) and the

“Methodology and Standard Assumptions” for conducting the analysis (e.g. data collection, use of rates/equations for trip generation, level of service calculation).

A traffic impact analysis shall include at a minimum the required elements that are listed in a table in the regulations (see the table starting on page 44; 24VAC30-155-60.C.). Additional elements such as a speed study or crash history data near the site may be need in the scope of the traffic impact analysis depending on the characteristics of a development proposal’s site. Special criteria for a low volume road submission are discussed in the section below.

The methodology and standard assumptions used in preparing the traffic impact analysis are specified in the regulations (24VAC30-155-60.D.; summarized starting on page 49). The regulations allow VDOT to approve changes to the methodology/standard assumptions based on discussion at a scope of work meeting when sufficient evidence is provided to justify the change.

Upon receipt of a traffic impact analysis for a rezoning application from the local government staff, 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.

It is important to note that *submittal of an incomplete traffic impact analysis or one using unapproved methodology or assumptions* will be considered deficient in meeting the requirements of §15.2-2222.1 of the Code of Virginia (see page 3). VDOT will return it to the locality and the applicant with the deficiencies identified.

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 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 <http://www.virginiadot.org/projects/chapter527/default.asp> 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

Most development proposals that substantially affect transportation on state highways are of a size that the traffic impact analysis needs to address the appropriate criteria in the regulation's Required Elements table (page 44). However, the expectations for a traffic impact analysis study on a proposed residential development with relatively low trip generation characteristics (200 vehicle trips per day/20 per peak hour) can be reduced.

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 traffic impact analysis, therefore, can be less complicated for the residential rezoning proposals that meet certain "low volume road" submission thresholds in the regulations, rezoning: 24VAC30-155-40 (A.1.c), pages 23 and 33.

As a result, **the 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 44:

- 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 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
- Safe horizontal curve speeds	- Sight distance
- Distances to nearby existing entrances	- 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](#).

Scope of Work Meeting

For rezoning 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 traffic impact analysis. VDOT will reply within 30 days of its receipt of the request and provide a date, 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.

For rezoning 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 required elements of a traffic impact analysis. Once contacted, VDOT will schedule a meeting date, time and location (see pages 40 and 57 on the Scope of Work Meeting). At the scope of work 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 will need to 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.

However, it is important to note that the conclusions from the scope of work meeting should not be considered "a contract". As the 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.

The traffic impact analysis 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.

Forms: Scope of Work Meeting & Preparing the Traffic Impact Analysis

The Appendix (page 76) 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 web site at <http://www.virginiadot.org/projects/chapter527/default.asp>.

PRE-SCOPE OF WORK MEETING FORM. This form collects background information on the applicant's project and the initial traffic impact analysis assumptions proposed by the applicant or their designee. VDOT staff will advise the applicant about this form or their designee prior to the scheduled scope of work meeting. It is in a format so that responses to the questions can be typed and then the document can be saved and copied. The form also should be available at the VDOT Residency offices.

The applicant or their designee needs to enter the relevant information pertaining to the proposed development (it may not be necessary to answer everything on the form). The form then needs to be returned to the VDOT Residency no later than three (3) business days prior to the meeting.

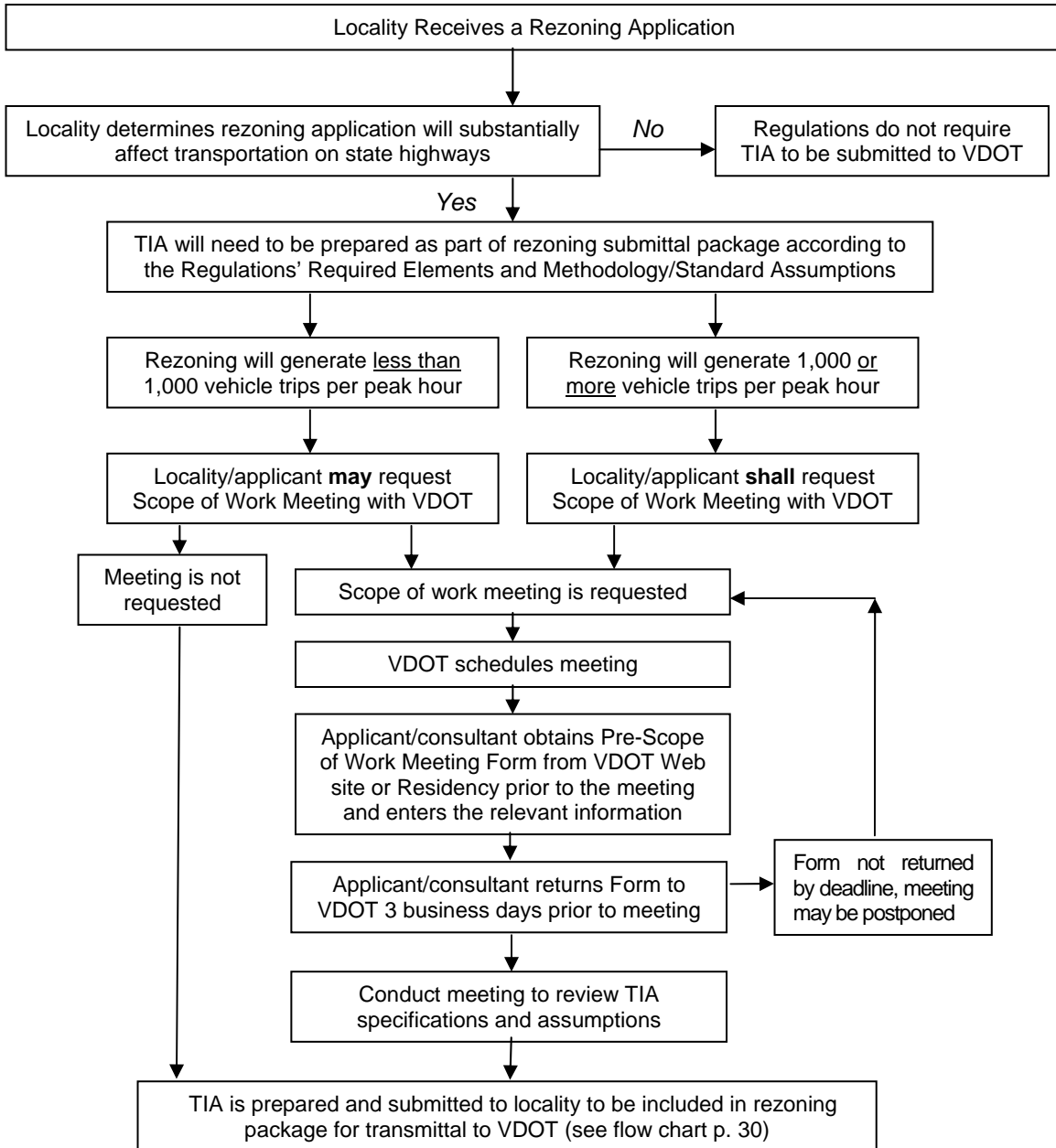
It is important for the applicant to provide sufficient information to the locality and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting. This will allow VDOT to become familiar with the proposal and the traffic analysis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

SCOPE OF WORK MEETING CHECKLISTS AND FORMS. Four documents to use at the meeting:

1. **CHECKLIST: REQUIRED ELEMENTS OF A TRAFFIC IMPACT ANALYSIS.** This checklist is used to organize the discussion at the scope of work meeting about the elements the regulations require to be included in the traffic impact analysis.
2. **TRAFFIC IMPACT ANALYSIS METHODOLOGY AND STANDARD ASSUMPTIONS WITH COMMENTARY.** This form is used to focus discussion on the methodology and assumptions to be applied in preparing the traffic impact analysis study.
3. **ADDITIONS TO THE REQUIRED ELEMENTS, CHANGES TO THE METHODOLOGY OR STANDARD ASSUMPTIONS, AND SIGNATURE PAGE.** Based on the scope of work meeting discussion, any additions to the required elements and changes to the methodology and standard assumptions that are approved by VDOT are listed on this form. This form needs to be signed by the applicant or their designee, a local government representative, and a VDOT representative.
4. **ORGANIZATION OF A TRAFFIC IMPACT ANALYSIS REPORT.** This form establishes VDOT's expectation on what should be included in the traffic impact analysis report and how it should be organized. This form is handed out at the scope of work meeting to help make sure that the traffic impact analysis meets the regulations' specifications.

VDOT CHECKLIST: EVALUATION OF THE SUBMITTED TRAFFIC IMPACT ANALYSIS. VDOT review staff can use this checklist to determine if the traffic impact analysis complies with the required elements and methodology specified in the regulations and any changes that were approved at the scope of work meeting.

FLOWCHART: PREPARING A REZONING TRAFFIC IMPACT ANALYSIS (TIA)



Overview of the Required Elements of a Traffic Impact Analysis

A 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 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. Several of the elements are optional at VDOT’s discretion for projects with less than 100 site generated peak hour trips.

For developments that will generate lower (100-499) peak hour trips, the threshold for what highway sections must be included in a TIA study area has been increased to 50 peak hour vehicle trips (previously 10 to 49 trips) and the overall geographical limit of the study area has been reduced from two miles to one mile. Volumes below these thresholds are not considered to “substantially affect transportation on state-controlled highways.” These changes will reduce the scope of low impact development proposal studies.

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 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 shall take into account bicycle, pedestrian, and transit reductions. 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 100	100 to 499	500 to 999	1,000 or more
Background Information				
List of all non-existent transportation improvements assumed in the analysis	Required	Required	Required	Required
Map of site location, description of the parcel, general terrain features, and location within the jurisdiction and region.	Required	Required	Required	Required
Description of geographic scope / limits of study area.	Within 1,000 ft of site	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	Required
Description and map or diagram of nearby uses, including parcel zoning.	Required	Required	Required	Required
Description and map or diagram of existing roadways.	Required	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	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.	Only diagrams required	Required	Required	Required

Item	Site Generated Peak Hour Trips			
	Less than 100	100 to 499	500 to 999	1,000 or more
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.	Only diagrams required	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.	At frontage, only diagrams required	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	If requested by VDOT
Crash history near site ③	If requested by VDOT	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	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.	Optional	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.	Optional	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.	At frontage, only diagrams required	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

Item	Site Generated Peak Hour Trips			
	Less than 100	100 to 499	500 to 999	1,000 or more
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	Required
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	Required
Site Traffic Distribution and Assignment				
Description of methodology used to distribute trips, with supporting data.	Required	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	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.	Current traffic + site generated traffic	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.	Only diagrams required	Required	Required	Required

Item	Site Generated Peak Hour Trips			
	Less than 100	100 to 499	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 or are planned.	At frontage, only diagrams required	Within 2,000 feet of site	Within 2,000 feet of site	To be determined by VDOT in consultation with the locality ①
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	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	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.	Only diagrams required	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.	At frontage, only diagrams required	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	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 without Development (For Sites with Less Than 100 VPH). Sites with relatively low peak hour traffic generation that may still need to be submitted under the Traffic Impact Analysis Regulations. For instance, rural developments on very low volume roadways that exceed the existing traffic volume, or sites whose unreduced trips are over the requirement threshold but when internal capture and travel demand management reductions are calculated fall below 100 VPH, can usually be expected to develop in a fairly short timeframe. In these cases, the provision of future traffic conditions without the development is generally of very limited use.

⑥ 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 100 VPH, the current year is used; for 100-499 VPH, at build-out or 6 years after start - whichever is later; 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 Traffic Impact Analysis Regulations Methodology and Standard Assumptions

The methodology and assumptions are grouped into twelve (12) main categories. The 12 categories are summarized below along with certain guidelines for their application.

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 (page 57).

A 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.

VDOT can not apply any traffic impact analysis standards used by a locality unless they meet or exceed the specifications in the regulations. However, if local requirements are stricter (e.g. a specific LOS must be achieved), they must be met in the traffic impact analysis study as well.

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: Keep in mind that 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.

On July 1, 2011 VDOT 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 38 for information on this [Model](#)).

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 70 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)*

If the ITE Senior Housing Trip Rate is used, it is recommended that a proffered condition have been approved during the rezoning of the property that a deed restriction will be recorded that limits 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.

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.

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 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 38 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.

In cases 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.

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.

Level of Service (LOS) analysis of highways shall utilize the techniques described in the **Highway Capacity Manual (HCM)** which may be supplemented by other capacity or delay methodologies. SIDRA traffic software should be used for roundabouts (see page 55).

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.

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. Such analyses should be based upon methodologies presented in one of the following documents:

- **The Bicycle Compatibility Index: A Level of Service Concept, Implementation Manual** (FHWA)
- **Bicycle and Pedestrian Level of Service Performance Measures and Standards for Congestions Management Systems**, Transportation Research Record 1538 (TRB)
- **Quality/Level of Service Handbook** (Florida DOT)
- The quality of service analysis for bus service shall be determined in accordance with the **Transit Capacity and Quality of Service Manual** (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 use this trip reduction if the criteria summarized below (including connectivity standards, 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 never 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:

- (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; and
- (2) The “connectivity index” within the 2,000-foot radius is equal to or higher than 1.4 (see [Definitions](#) on page 6 and the **illustration** on page 54); and
- (3) There are at least two of the 10 major land use classifications, as defined in ITE Trip Generation (see 24VAC30-155-100), 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:

- (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; and
- (2) The “connectivity index” within the 2,000-foot radius is equal to or higher than 1.4 (see [Definitions](#) on page 8 and the **illustration** on page 54); and
- (3) There are at least two of the 10 major land use classifications, as defined in ITE **Trip Generation** (see 24VAC30-155-100), within the 2,000-foot radius.

The trip reductions for traffic impact analysis prepared for small area plans (see the Comprehensive Plan chapter page 11) and for mixed use development rezoning proposals may be based on the non-ITE trip generation methodology approved by VDOT (see page 38) 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 proposed 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 38 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.

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.

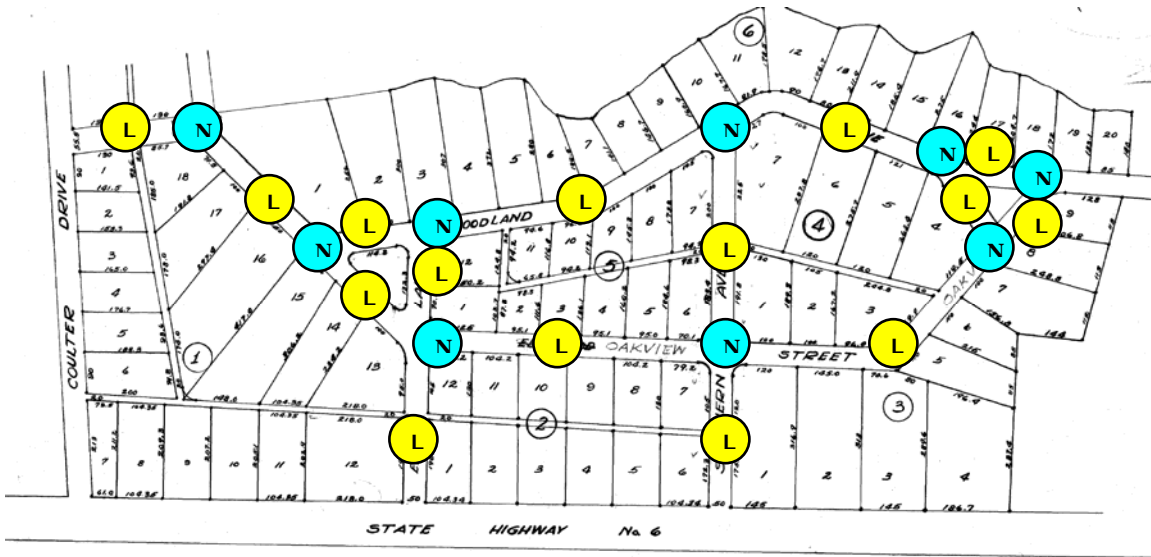
11. Signal Warrant Analysis.

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 70).

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](#).



The “Connectivity Index” is found by dividing a network addition’s links by its nodes. These terms are defined as follows (see the Definitions chapter on page 6 for more details):

- Links: Individual road segments, usually between nodes, and stub-outs (cul-de-sacs).
- Nodes: Link intersection points and the termination of cul-de-sacs.

Therefore a development with twelve links and nine nodes would have a connectivity index of $12/9$ or **1.33**.

The development in the example above has fifteen links defined by the symbol: L

The development has nine nodes indicated by the symbol: N

The Connectivity Index for this development would be $15/9$ or **1.66**

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.** The 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, the Transportation and Mobility Planning Division for regional planning models or pedestrian and transit models, or the Research Council 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 2000 HCM update. 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. Traffic impact statement.

- A.** A traffic impact statement (TIS) 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 TIS 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 TIS. If the locality prepares the TIS it shall provide a copy of the complete TIS to the applicant when one is provided to VDOT. The completed TIS shall be submitted to VDOT.

The data and analysis contained in the TIS shall be organized and presented in a manner acceptable to the department and consistent with this regulation. Submittal of an incomplete TIS or one prepared using unapproved methodology or assumptions 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 by VDOT.

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 TIS for any project and VDOT shall reply to such request within 30 days of its receipt of such a request and provide a date, 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 TIS. 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, and provide a date, 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 TIS, 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 TIS are dependent upon the scale and potential impact of the specific development proposal being addressed by the TIS as determined by VDOT in its sole discretion.

1. At a minimum, the TIS 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 shall take into account bicycle, pedestrian, and transit reductions. When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, the TIS shall estimate multimodal trips. All distances in the table below shall be measured along roads or streets.

See the table on page 44: Required Elements of a Traffic Impact Analysis.
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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 TIS need not include all roadway and roadway segments located within the geographic scope of the study as determined by VDOT.

2. A TIS for a development proposal that only meets the low volume road submission criterion (24 VAC 30-155-40 (A.1.c) and -50 (A.1.c)) 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 (see 24 VAC 30-155-100).

D. Methodology and standard assumptions. A TIS 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 (see 24VAC30-155-100), 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. 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 – an ITE Proposed Recommended Practice (see 24VAC30-155-100), which is summarized here. 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 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, provided at least one of the following applies:

- d. At least three data points exist;
- e. Standard deviation less than 110% of weighted average rate;
- f. R^2 less than 0.75 or no regression equation provided; or
- g. 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. 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) 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 following pass-by trip reductions may be used:

(1) Shopping center - 25% of trips generated may be considered pass-by.

(2) Convenience stores, service stations, fast food restaurants, and similar land uses - 40% of trip generated may be considered pass-by.

(3) 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 (see 24VAC30-155-100). 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.

7. Future conditions.

For the purpose of the TIS, 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 (see 24VAC30-155-100). 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).
- e. Heavy vehicle factor – calculate from collected traffic (classification) counts or obtain from VDOT count publications.
- f. Area type – noncenter of business district.

The TIS 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 TIS 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 TIS 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 TIS 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 TIS 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 (see 24VAC30-155-100). The TIS shall provide both route and segment quality of service. The TIS may consider the benefits of dedicated bus lanes for more frequent and rapid service. The TIS 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 TIS may reduce the number of vehicle trips generated by the proposal in the TIS 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 never 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 connectivity index within the 2,000-foot radius is equal to or higher than 1.4; and
- (3) There are at least two of the 10 major land use classifications, as defined in ITE Trip Generation (see 24VAC30-155-100), 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 connectivity index within the 2,000-foot radius is equal to or higher than 1.4; and
- (3) There are at least two of the 10 major land use classifications, as defined in ITE Trip Generation (see 24VAC30-155-100), within the 2,000-foot radius.

10. Modal split and trip reduction.

All vehicle trip reductions used in the TIS 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 TIS. 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 parking accommodations transit modal split vehicle trip reductions may be utilized. The analysis of capacity of the parking accommodations shall be included in the TIS 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 TIS.

c. Transit and bus modal split data from similar developments within the geographic scope of the TIS or one mile of the proposal, whichever is greater, shall be collected if the TIS vehicle trip reductions are used pursuant to this subsection and similar developments exist within the geographic scope of the TIS 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 (see 24VAC30-155-100) or ITE Manual of Traffic Signal Design as determined by VDOT.

12. Recommended improvements.

Recommendations made in the TIS for improvements to transportation facilities shall be in accordance with the geometric standards contained within the Road Design Manual (see 24VAC30-155-100).

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 3) and the Traffic Impact Analysis Regulations added a new component to VDOT's advisory role with localities.

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](#)."

Reorganization of VDOT

Virginia has the third-largest state-maintained highway system in the country, behind Texas and North Carolina. Since 2002, through efficiency efforts, outsourcing and by shrinking in size, VDOT has achieved annual cost reductions of more than a quarter billion dollars. As of July 1, 2010, VDOT employed less than 7,500 people full time, compared to 10,380 at the close of Fiscal Year 2001. This is the lowest level since 1965.

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

Each District has a Director of Transportation and Land Use 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.

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 Director of Transportation and Land Use is responsible for:

- Providing technical assistance at the request of a local government in the preparation of the transportation plan portion of the comprehensive plan (see page 8 of this document).
- Preparing at a locality's request cost estimates for road and transportation improvements recommended by the comprehensive plan (§15.2-2223 of the Code).
- Reviewing and preparing written reports with recommendations on comprehensive plan and plan amendment packages submitted under the TIA Regulations.

The Comprehensive Plan chapter (page 8) provides a detailed discussion of these activities, including a flow chart 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 13) 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.

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 traffic impact analyses. Application forms and VDOT checklists are presented in the Appendix to help assure that the traffic impact analysis that is submitted meets the provisions of the regulations.

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 20). 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 28) 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.** Make the arrangements 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. Copies of Submittal Packages.** Advise the locality on the number of copies of the submittal package that VDOT will need for its review. The number of copies can also be specified during a traffic impact analysis scope of work meeting.
- 3. 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 71.
- 4. 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 67.
- 5. Completeness.** Examine the submittal for completeness: make sure all 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.
- 6. 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.

- 7. Evaluation of the Submittal.** Take the necessary steps to provide a thorough evaluation of the plan or rezoning traffic impact analysis studies. 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 traffic impact analysis studies and provide reports on their findings. See the section below.

- 8. Official Comments to the Locality; Made 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 (pages 14 and 29).

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 other 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.

FEE SCHEDULE

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 3) 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:

- 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 traffic impact analysis study submitted according to 24VAC30-155-40 C.1 (see pages 27, 32, and 34).
- 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. (Chapter 121 of the 2010 General Assembly amendment to § 15.2-2222.1 F. of the Code, see page 4)
- The fee varies according to the type of submission. A set fee is established for comprehensive plan review. The fee for a rezoning submittal is based on the number of adjusted vehicle trips generated per peak hour by the proposed development, not gross ITE rates.
- For a rezoning "low volume road submission", a reduced fee (\$250) is established to reflect VDOT's reduced administrative review time for the less complicated low volume road traffic impact statement. Information on rezoning submissions is presented on pages 23 and 33.
- A check for the fee must be included in the submission package and made payable to either "Treasurer of Virginia" or "VDOT".
- 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 15 and 31).

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. Small area plan rezoning proposals. *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:

Low volume road criterion only - \$250

Less than 100 vehicles per peak hour - \$500

100 or more vehicles per peak hour - \$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-controlled highways, or Major change to infrastructure / transportation 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	\$1000 covers first and second review No fee if initiated by locality or public agency No fee for citizens' organization or neighborhood association proposing plan amendments
Rezoning	Residential	100 VPH on state controlled highways, or 100 VPH on locality maintained streets AND within 3000 feet of a state controlled highway, or <u>Low Volume Road Threshold: 200 VPD AND exceeds the current traffic volume on a state controlled highway</u>	TIA and Application submitted to VDOT for review and comment VDOT may request a meeting with the locality and applicant within 45 days Review to be completed in 120 days if VDOT requests a meeting Otherwise review to be completed in 45 days NOTE: When a related comprehensive plan revision and rezoning proposal are being considered concurrently for the same geographical area, then only a rezoning TIA package is required.	For first and second review: \$250 - Low Volume Rd \$500 - Less than 100 VPH \$1000 -100 VPH or more No fee if initiated by locality or public agency No fee if using a TIA prepared for a small area plan
	All Other Land Uses ***	250 VPH or 2500 VPD on state controlled highways, or 250 VPH or 2500 VPD on locality maintained streets AND within 3000 feet of a state controlled highway		

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

** Third or subsequent submissions require additional fee as though they were an initial submission.

*** For mixed use developments, a proposal is deemed to have significant impact if the trips associated with the residential component exceed 100 VPH, or if the total trips generated exceed either 250 VPH, or 2500 VPD.

REFERENCE DOCUMENTS

24VAC30-155-100 provides a list of publications 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.

REGULATIONS

24VAC30-155-100. Listing of documents incorporated by reference.

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.

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| <p>1. Trip Generation
(effective November 2003)
Institute of Transportation Engineers
1099 14th Street NW
Suite 300 West
Washington, DC 20005</p> | <p>6. ITE Manual of Traffic Signal Design
(effective 1998)
Institute of Transportation Engineers
1099 14th Street NW
Suite 300 West
Washington, DC 20005</p> |
| <p>2. Trip Generation Handbook – an ITE Proposed Recommended Practice
(effective 2004)
Institute of Transportation Engineers
1099 14th Street NW
Suite 300 West
Washington, DC 20005</p> | <p>7. Transit Capacity and Quality of Service Manual, 2nd Edition
(effective 2003)
Transportation Research Board of the National Academies
Keck Center of the National Academies
Transportation Research Board
500 Fifth Street, NW
Washington, DC 20001</p> |
| <p>3. Road Design Manual
(effective January 1, 2005)
VDOT
1401 E. Broad Street
Richmond, Virginia 23219</p> | <p>8. Secondary Street Acceptance Requirements (24VAC30-92)
Commonwealth Transportation Board
1401 E. Broad Street
Richmond, VA 23219</p> |
| <p>4. Highway Capacity Manual
(effective 2000)
Transportation Research Board
500 Fifth Street NW
Washington, DC 20001</p> | <p>9. Access Management: Principal Arterials (24VAC30-72)
VDOT
1401 E. Broad Street
Richmond, Virginia 23219</p> |
| <p>5. Manual on Uniform Traffic Control Devices
(effective December 22, 2003)
Federal Highway Administration
Superintendent of Documents
U.S. Government Printing Office
PO Box 371954
Pittsburgh, Pennsylvania 15250</p> | <p>10. Access Management: Minor Arterials, Collectors, and Local Streets (24VAC30-73)
VDOT
1401 E. Broad Street
Richmond, Virginia 23219</p> |

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 at: <http://landtrack/Default.aspx>. In the top left corner of the 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 and Residency staff that will be entering submissions. Each District has one or more "SuperUsers" 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
_____	_____	<input type="checkbox"/>	_____
_____	_____	<input type="checkbox"/>	_____
_____	_____	<input type="checkbox"/>	_____
_____	_____	<input type="checkbox"/>	_____
_____	_____	<input type="checkbox"/>	_____

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

Residential Units _____ Acreage _____
 VPH (net) _____ Commercial Sq Ft _____
 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

(Include any further comments on additional sheets)

Submission Number (for second and subsequent submissions) _____

LandTrack on the VDOT Web Site for the General Public

The screenshot shows the LandTrack web application interface. At the top, there is a navigation bar with "Virginia.gov", "Online Services | Commonwealth Sites | Help | Governor", and a search box for "Virginia.gov". Below this is the LandTrack logo and the VDOT logo. The main content area is titled "Tracking System for Chapter 527 Traffic Impact Analysis (TIA) Submissions". On the left, there is a sidebar with navigation links: HOME, SEARCH FOR SUBMISSIONS, ABOUT LANDTRACK, CHAPTER 527 REGULATIONS, FEEDBACK, and HELP. The main content area is divided into two sections. The left section, titled "VDOT Districts", lists the following districts: Bristol, Salem, Lynchburg, Richmond, Hampton Roads, Fredericksburg, Staunton, Culpeper, Northern Virginia, and All Districts. The right section, titled "All Districts", features a gauge chart showing the status of reviews (On Time, Early, Late) and a table of completed reviews:

Completed Reviews	
# On Time/Early	7 1
Total	7 2

At the bottom of the page, there is a footer with the text "LandTrack V 1.1.2" and "© 2008 Virginia Department of Transportation. All Rights Reserved."

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.

The easy to use format allows the public to search by VDOT District, type of submission, jurisdiction, street name or route number, or project name and receive a listing of traffic impact analysis regulation submittals. Key information on the submittal is then retrieved from the

VDOT LandTrack data base including the applicant, locality and VDOT contacts, transportation related characteristics on the rezoning proposal, and then the traffic impact analysis study along with VDOT’s evaluation of it.

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. Public feedback on the LandTrack system can supply valuable information that can be used to improve it.

LandTrack’s purpose, though, is not only to offer transportation related information on development proposals and comprehensive plans. 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 how well VDOT is doing statewide and by District 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.

The screenshot shows the Virginia.gov LandTrack website. The header includes navigation links for Online Services, Commonwealth Sites, Help, and Governor, along with a search bar and a GO button. The main content area features the LandTrack logo and a search interface with fields for Jurisdiction, Street Name or Route Number, Project Name, and Principal Parcel ID. There are also checkboxes for various Submission Types like Comprehensive Plan TIA Review, Zoning TIA Review, etc. Below the search fields is a 'Search Results' section with a table of results.

	Jurisdiction	Local Project Id	VDOT Project Id	Project Name	Routes	Received	Submission Type	VDOT Contact	Status
Select	Falls Church		110-7-20070827-79	City Center Transportation Plan	7-Broad Street, 29-Washington Street, 694-Great Falls Street, Falls Church-Maple Avenue, Falls Church-Annandale Road, Falls Church-Pennsylvania Avenue, Falls Church-Virginia Avenue, Falls Church-Little Falls Street, Falls Church-Park Avenue, Falls Church-Columbia Street, Falls Church-Gundry Drive, Falls Church-Tinner Hill Street, Falls Church-Hillwood Avenue, Falls Church-Lawton Street	8/27/2007	Comprehensive Plan TIA Review	Kevin Nelson	Review Complete - Acceptable
Select	Henrico	POD-55-07	43-33-20070813-93	Staples Mill Centre	33-Staples Mill Road, 250-West Broad Street, 9999-Bethlehem Road	8/13/2007	Site Plan TIA Review	Keith Rider	Application Returned-Incomplete

APPENDIX

- A. PRE-SCOPE OF WORK MEETING FORM: Information on the Project and the Traffic Impact Analysis Base Assumptions*
- B. SCOPE OF WORK MEETING CHECKLISTS AND FORMS
 - 1. *Checklist:* Required Elements of a Traffic Impact Analysis*
 - 2. *Checklist:* Required Elements of “Low Volume Road” Traffic Impact Analysis*
 - 3. Additions to the Required Elements, Changes to the Methodology or Standard Assumptions, and Signature Page
 - 4. Organization of a Basic Traffic Impact Analysis Report
- C. VDOT CHECKLISTS
 - 1. Checklist: Evaluation of the Submitted Traffic Impact Analysis*
 - 2. Checklist: Evaluation of the Submitted “Low Volume Road” Traffic Impact Analysis*
- 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

* 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.



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 <input type="checkbox"/>	Rezoning <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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 <input type="checkbox"/>	Commercial <input type="checkbox"/>	Mixed Use <input type="checkbox"/>	Other <input type="checkbox"/>	
	Residential Use(s) Number of Units: _____ ITE LU Code(s): 1. _____ 2. _____ 3. _____ 4. _____		Square Feet or Other Variable: 1. _____ 2. _____ 3. _____ 4. _____		
	Commercial Use(s) ITE LU Code(s): 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 <input type="checkbox"/>	100 - 499 <input type="checkbox"/>	500 - 999 <input type="checkbox"/>	1,000 or more <input type="checkbox"/>	

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	<input type="checkbox"/> AM <input type="checkbox"/> PM <input type="checkbox"/> 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: <input type="checkbox"/> Yes <input type="checkbox"/> No Reduction: _____% trips		Pass-by allowance: <input type="checkbox"/> Yes <input type="checkbox"/> No Reduction: _____% trips
	<input type="checkbox"/> Synchro <input type="checkbox"/> HCS (v.2000/+) <input type="checkbox"/> SIDRA <input type="checkbox"/> CORSIM <input type="checkbox"/> 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.



Traffic Impact Analysis Regulations
24VAC30-155

SCOPE OF WORK MEETING
CHECKLISTS AND FORMS

	Page
1. <i>Checklist:</i> Required Elements of a Traffic Impact Analysis	2
2. <i>Checklist:</i> Required Elements of a Low Volume Road Traffic Impact Analysis.....	7
3. Additions to the Required Elements, Changes to the Methodology or Standard Assumptions, and Signature Page.....	8
5. Organization of a Basic Traffic Impact Analysis Report	9

SCOPE OF WORK MEETING
CHECKLIST: REQUIRED ELEMENTS OF A TRAFFIC IMPACT ANALYSIS:
24VAC30-155-60.C.1. with footnotes

<input checked="" type="checkbox"/>	Item	Site Generated Peak Hour Trips			
		Less than 100	100 to 499	500 to 999	1,000 or more
	Background Information				
	List of all non-existent transportation improvements assumed in the analysis	Required	Required	Required	Required
	Map of site location, description of the parcel, general terrain features, and location within the jurisdiction and region.	Required	Required	Required	Required
	Description of geographic scope / limits of study area.	Within 1,000 ft of site	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	Required
	Description and map or diagram of nearby uses, including parcel zoning.	Required	Required	Required	Required
	Description and map or diagram of existing roadways.	Required	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	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.	Only diagrams required	Required	Required	Required

<input checked="" type="checkbox"/>	Item	Site Generated Peak Hour Trips			
		Less than 100	100 to 499	500 to 999	1,000 or more
	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.	Only diagrams required	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	At frontage, only diagrams required	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	If requested by VDOT
	Crash history near site ③	If requested by VDOT	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	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.	Optional	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.	Optional	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.	At frontage, only diagrams required	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

<input checked="" type="checkbox"/>	Item	Site Generated Peak Hour Trips			
		Less than 100	100 to 499	500 to 999	1,000 or more
	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	Required
	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	Required
	Site Traffic Distribution and Assignment				
	Description of methodology used to distribute trips, with supporting data.	Required	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	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.	Current traffic + site generated traffic	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.	Only diagrams required	Required	Required	Required

<input checked="" type="checkbox"/>	Item	Site Generated Peak Hour Trips			
		Less than 100	100 to 499	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 exist or are planned.	At frontage, only diagrams required	Within 2,000 feet of site	Within 2,000 feet of site	To be determined by VDOT in consultation with the locality ①
	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	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	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.	Only diagrams required	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.	At frontage, only diagrams required	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	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 without Development (For Sites with Less Than 100 VPH). Sites with relatively low peak hour traffic generation that may still need to be submitted under the Traffic Impact Analysis regulations. For instance, rural developments on very low volume roadways that exceed the existing traffic volume, or sites whose unreduced trips are over the requirement threshold but when internal capture and travel demand management reductions are calculated fall below 100 VPH, can usually be expected to develop in a fairly short timeframe. In these cases, the provision of future traffic conditions without the development is generally of very limited use.

⑥ 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 100 VPH, the current year is used; for 100-499 VPH, at build-out or 6 years after start - whichever is later; 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 (200 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
 - Existing warning signs
 - Pavement and shoulder type
 - Pavement and shoulder width
 - Intersection sight distances
 - Horizontal and vertical alignments
 - Safe horizontal curve speeds
 - Sight distance
 - Distances to nearby existing entrances
 - 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 the [Road Design Manual](#) (24VAC30-155-100).
- 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 REQUIRED ELEMENTS, CHANGES TO THE METHODOLOGY OR STANDARD ASSUMPTIONS, AND SIGNATURE PAGE

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

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

Organization of a Basic Traffic Impact Analysis Report

1) Introduction and Summary

- a) Purpose of report and study objectives
- b) Executive Summary
 - i) Site location and study area
 - ii) Description of the proposed development
 - iii) Principal findings
 - iv) Conclusions
 - v) Recommendations

2) Background Information: Proposed Development (Site and Nearby)

- a) List of all non-existent transportation improvements assumed in the analysis
- b) Description of on-site development
 - i) Map of site location
 - ii) Description of the parcel
 - iii) General terrain features
 - iv) Location within the jurisdiction and region
 - v) Comprehensive Plan recommendations for the subject property
 - vi) Current or proposed zoning of the subject property
- c) Description of geographic scope and limits of study area *
- d) Plan at an engineering scale of the existing and proposed site uses
- e) Description and map or diagram of nearby uses, including parcel zoning
- f) Description and map or diagram of existing roadways
- g) Description and map or diagram of programmed improvements to roadways, intersections, and other transportation facilities within the study area

3) Analysis of Existing Conditions

- a) Collected daily and peak hour of the generator traffic volumes, tabulated and presented on diagrams with counts provided in an appendix *
- b) Analyses for intersections and roadways identified by VDOT *
 - i) Delay and Level of Service (LOS) are tabulated and LOS is presented on diagrams for each lane group
- c) 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 *
- d) Speed Study (if requested by VDOT)
- e) Crash history near site (if requested by VDOT)
- f) Sight distance (if requested by VDOT)

4) Analysis of Future Conditions Without Development

- a) Description of and the justification for the method and assumptions used to forecast future traffic volumes *
- b) Analyses for intersections and roadways as identified by VDOT *

- i) Delay and Level of Service (LOS) are tabulated and LOS is presented on diagrams for each lane group
- c) 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 *

5) Trip Generation

- a) 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
- b) Description and justification of internal capture reductions for mixed use developments and pass-by trip reductions, if appropriate, including table of calculations used

6) Site Traffic Distribution and Assignment

- a) Description of methodology used to distribute trips, with supporting data
- b) 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

7) Analysis of Future Conditions With Development

- a) 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 *
- b) Analyses for intersections and roadways identified by VDOT *
 - i) Delay and Level of Service (LOS) are tabulated and LOS is presented on diagrams for each lane group
- c) 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 *

8) Recommended Improvements

- a) Description and diagram of the location, nature, and extent of the proposed improvements, with preliminary cost estimates as available from VDOT
- b) If travel demand management (TDM) measures are proposed, description of methodology used to calculate the effects of TDM measures with supporting data
- c) Analyses for all proposed and modified intersections in the study area under the forecast and site traffic *
 - i) Delay and Level of Service (LOS) are tabulated and LOS presented on diagrams for each lane group
 - ii) 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
- d) 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 *

9) Conclusions

- a) Clear, concise description of the study findings

* The level of analysis and information provided depends on site generated peak hour traffic. See page 2 of these forms; 24VAC30-155-60.C, the Required Elements table on page 44.

VDOT CHECKLIST
EVALUATION of the SUBMITTED TRAFFIC IMPACT ANALYSIS

<input checked="" type="checkbox"/>	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.

<input checked="" type="checkbox"/>	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.

<input checked="" type="checkbox"/>	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: _____

SIGNED: _____
 VDOT Representative

DATE: _____

PRINT NAME: _____
 VDOT Representative

VDOT CHECKLIST
EVALUATION of the SUBMITTED “LOW VOLUME ROAD”
TRAFFIC IMPACT ANALYSIS

<input checked="" type="checkbox"/>	ITEM PROVIDED OR NOT APPLICABLE (NA)
	Verify <u>Use of Methodology</u> and Standard Assumptions in Regulations (or Changes Approved at Scope of Work Meeting)
	Verify any <u>Additions to Elements</u> 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 <u>and</u>
	- 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

<input checked="" type="checkbox"/>	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, <u>and</u>
	- 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, <u>and</u>
	- 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).

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