



Traffic Impact Analysis Regulations Administrative Guidelines

24 VAC 30-155

Land Development Section
Asset Management Division
Virginia Department of Transportation
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NOTE: Words, phrases, and sections of the Code of Virginia highlighted in [blue](#) are hyperlinks that allow the reader to “jump” to the place in this document in which the highlighted item is located or to Internet websites in which additional information on the topic can be found. They have been inserted to assist the reader in using this document.

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 on the left of the keyboard, and left clicking with your mouse.

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 (Senate Bill 699, 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 (this Code section is presented on the following page).

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 instructs VDOT to analyze and provide comment on the impacts of comprehensive plans and land development proposals that will 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.

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, 24 VAC 30-155 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 including conceptual plans of development, and
- Supplemental traffic analysis for certain site plans and subdivision plats.

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.

The authority for VDOT's expanded involvement in the local government comprehensive planning and land development process is stated in §15.2-2222.1 of the Code.

Finally, it is important to note that the Traffic Impact Analysis Regulations do not affect VDOT's entrance permit authority established in the Land Use Permit Manual and the Minimum Standards of Entrances to State Highways.

REGULATIONS

24 VAC 30-155-20. 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, site plans, subdivision plats, and subdivision development plans 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. (Effective July 1, 2007) 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. When a locality receives a subdivision plat pursuant to § 15.2-2258 or 15.2-2260, or a site plan or plan of development pursuant to subdivision A 8 of § 15.2-2286, the locality shall submit such plat or plan to the Department of Transportation in accordance with § 15.2-2260 within 10 business days if the plat or plan substantially affects transportation on state-controlled highways as defined by regulations promulgated by the Department. Such plat or plan shall include supplemental traffic analysis if required by local ordinance or resolution or pursuant to regulations promulgated by the Department. Within 30 days of its receipt of such plat or plan, the Department shall either (i) provide written comment on the plat or plan, or (ii) schedule a meeting, to be held within 60 days of the Department's receipt of the plat or plan, with members of the local planning commission or other agent of the locality to discuss potential modifications to the plat or plan to address any concerns or deficiencies. The Department's comments on the plat or plan shall be based upon the comprehensive plan, regulations or guidelines of the Department, engineering and design considerations, any adopted statewide or regional plans and short and long term traffic impacts on and off site. The Department shall complete its final review within 90 days after it receives such plat or plan from the locality. The submission of the application to the Department shall toll all times for local review set out in this chapter until the locality has received the Department's final comments.

D. 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.

E. 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.

F. The Department shall impose fees and charges for the review of applications, plans and plats pursuant to paragraphs A, B, and C, and such fees and charges shall not exceed \$1,000 for each review.

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, is presented on page 2) to require localities to submit rezoning, site plan, and subdivision plat 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 comments and recommendations concerning the traffic impact that the development can be expected to create.

This new 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 existing transportation network that will be needed to serve such growth.

The 2006 legislation directed VDOT to promulgate regulations to implement the requirements of §15.2-2222.1 of the Code. The Secretary of Transportation convened a Technical Advisory Committee composed of local government and VDOT representatives and a Policy Advisory Committee with representatives from local government, planning district commissions, homebuilder and real estate associations, and other stakeholder groups to develop the regulations. Public meetings were conducted to gain public input.

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

- 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 “substantial impact or change” to the existing transportation network (comprehensive plan) and what is meant by “substantially affect” transportation on state highways (rezoning, site plan, subdivision plat).
- Establish a standard framework of assumptions, definitions, methodologies and scope of review for traffic impact analyses presented to VDOT.
- Set out a schedule of fees for VDOT’s review based upon the type of submission and the traffic generated.
- Become effective July 1, 2007 and will be implemented in phases.

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.

IMPLEMENTATION SCHEDULE FOR THE REGULATIONS

The implementation of the regulations will be carried out in a multi-phased approach over 18 months (July 1, 2007 to January 1, 2009). The regulations are exempt from the Administrative Process Act until July 1, 2008 so they can be refined during the implementation process. VDOT will solicit continuous feedback so that stakeholders can suggest ways to improve the regulations based on lessons learned from implementation.

Maps with the District boundaries that identify the localities within each are located on the VDOT website under “Travel Center” and then [District Maps](#).

Begin Implementation

Months 1 - 6: Comprehensive plan/amendments; rezoning, site plan, and subdivision plat sites generating 500 vehicle trips per peak hour or more

Full Implementation

Months 7 + : Above plus sites generating less than 500 vehicle trips per peak hour

Group #1: July 1, 2007: Begin Implementation

Northern Virginia, Richmond, and Salem

Group #2: January 1, 2008: Begin Implementation

Culpeper, Fredericksburg, and Staunton

Group #3: July 1, 2008: Begin Implementation

Bristol, Hampton Roads, and Lynchburg

REGULATIONS

24 VAC 30-155-90. Implementation.

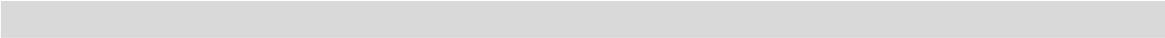
VDOT shall implement this chapter in phases, beginning on July 1, 2007, so that it is in full effect by January 1, 2009.

A. Implementation by VDOT district. For the purposes of this chapter, the nine VDOT construction districts have been divided into three groups.

1. Group 1 consists of Northern Virginia, Richmond, and Salem Districts. Implementation will begin on July 1, 2007 for this group.
2. Group 2 consists of Culpeper, Fredericksburg, and Staunton Districts. Implementation will begin on January 1, 2008 for this group.
3. Group 3 consists of Bristol, Hampton Roads, and Lynchburg Districts. Implementation will begin on July 1, 2008 for this group.

B. Phasing by submission type and trip generation. Within each group of construction districts, implementation will be phased by the type of submission and the trip generation that each proposal is expected to generate.

1. Proposal submission that will be required at the start of each group's implementation:
 - a. All comprehensive plan and plan amendments submittals described in 24 VAC 30-155-30.
 - b. Rezoning, subdivision plat, site plan, and plan of development proposals as described in 24 VAC 30-155-40 and 24 VAC 30-155-50 for sites generating 500 vehicle trips per peak hour or more as described in 24 VAC 30-155-60.
2. All remaining proposal submissions subject to this chapter shall be required to be submitted beginning six months after the start of each group's implementation.



DEFINITIONS

The Traffic Impact Analysis Regulations includes a section, 24 VAC 30-155-10, that provides definitions for the major terms that are used.

REGULATIONS

24 VAC 30-155-10. 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 links divided by the number of nodes.

“Link” means a segment of street that is between intersections or between an intersection and terminus, such as a cul-de-sac or other dead end. A stub out consisting of a short street segment that is intended to serve future development that does not provide service to parcels within the current development shall only constitute a link for the purposes of this chapter if, based upon the adjacent zoning, terrain, and land uses, there is a reasonable expectation that the stub out will provide a connection to future 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.

“Node” means an intersection of two or more streets or the terminus of a street, such as the end of a cul-de-sac or dead end. The terminus of a stub out and the intersection of a street with only a stub out do not constitute nodes for the purposes of this chapter.

“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.

“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 are not considered state-controlled highways for the purposes of this regulation.

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

“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 plan components 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 24 VAC 30-155-30 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 portion of their comprehensive plan. The District Transportation Planning/Land Development Manager or Coordinator (the “District Planning Manager”) normally handles this responsibility.

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 portion of 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 portion of 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 2) and 24 VAC 30-155-30.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](#),

the locality should submit their comprehensive plan or plan amendment package at least 100 days prior to when they estimate final action will be taken. Localities should send their comprehensive plan package to the applicable VDOT Residency Office or to the Land Development Section in the Northern Virginia District).

A locality shall submit such plan or amendment to VDOT for review and comment, if the locality anticipates that the comprehensive plan or comprehensive plan amendment will result in a **substantial impact** or **substantial change** to the existing transportation network (of state controlled/maintained highways).

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.

24 VAC 30-155-30.A. of the regulations defines how to determine a “substantial impact” and a “substantial change” (the [table](#) on page 23 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 73) or, subject to the approval of VDOT, the regional model as adopted by the local Metropolitan Planning Organization. When using the regional model approach, link volumes in the area of change are to be compared in order to determine if the submission threshold has been achieved.

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

The Locality’s Comprehensive Plan Package Submittal

VDOT will need sufficient information to evaluate the system of new and expanded transportation facilities, outlined in the transportation plan within the comprehensive plan, that will be necessary to support the current and planned development of the locality as presented in the comprehensive plan’s future land use policies and map.

24 VAC 30-155-30. B of the regulations (presented at the end of this Chapter starting on page 16) specifies what information must be included in the comprehensive plan package submitted to VDOT. This information is summarized in a [checklist](#) format on page 14. The quickest way for the locality to send this information, and for VDOT to use internally, is in an electronic version.

When a related comprehensive plan or comprehensive plan amendment and rezoning proposal that cover the same geographical area are being considered concurrently by a locality, only a rezoning package as required under 24 VAC 30-155-40 shall be prepared and provided to VDOT for review.

The Comprehensive Plan Review Process Rules 24 VAC 30-155-30.C.

In most cases, after the locality submits their comprehensive plan package to the Residency Office, the plan package will be forwarded to the District Transportation Planning/Land Development Manager or Coordinator (the “District Planning Manager”). The District Planning Manager will coordinate the review of the plan with the Residency Administrator (or designee) and the appropriate sections within the District Office.

MEETING WITH LOCALITY. §15.2-2222.1 of the Code specifies that within **30 days** of receipt of the comprehensive plan package, VDOT (e.g. the District Planning Manager) may request, and the locality shall agree to, a meeting the local planning commission or other agent to discuss the plan or amendment, which discussions shall continue as long as the participants

deem them useful. The meeting request must be made within 30 days of receipt of the proposal.

VDOT'S OFFICIAL RESPONSE ON THE COMPREHENSIVE PLAN PACKAGE. The District Planning Manager and Residency Administrator will need to determine who will handle the submittal of VDOT's official response to the locality.

The official response will include (i) a transmittal letter (a sample official response letter is presented in the Appendix on page 74) 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 comprehensive plan (or plan amendment) package. **NOTE:** the written report comments 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 RESPONSE TO THE LOCALITY. The District Planning Manager's coordination of VDOT's review of the comprehensive plan or comprehensive plan amendment must be completed so that VDOT's official response can be transmitted to the locality:

- Within **90 days** of the receipt of the comprehensive 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 response is not received by the above deadline, the locality may choose to proceed in the absence of VDOT comment. Again, the intent of the regulations is that VDOT's review does not lengthen the local planning process.

LOCALITY TO INCLUDE VDOT'S RESPONSE IN THEIR OFFICIAL RECORD. The regulations (24 VAC 30-155-30. C, page 17) specify that the local government include VDOT's official response in the locality's official public record on the plan or plan amendment.

The local government can do so by placing VDOT's official response (transmittal letter and written report) in the locality's files for the comprehensive 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 or plan amendment proposal.

VDOT TO MAKE OFFICIAL RESPONSE AVAILABLE TO THE PUBLIC. VDOT must make its official response available to the public through various means, e.g. posting on the VDOT website, copies available at the local planning office, a presentation to the locality.

- The District Planning Manager shall forward the documents posted on the website along with a copy of the action the locality took on the plan or plan amendment to the Land Development Section in the [VDOT Asset Management Division](#).

Written Report on VDOT's Analysis 24 VAC 30-155-70

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

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

VDOT can provide comments on how the locality's proposed comprehensive 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 transportation plan.

The following chart summarizes items to be covered in the Department's review and analysis:

	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: 24 VAC 30-155-50

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 Residency 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 improvements and additions should be 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 cost estimates as available from VDOT.

FEES

- A \$1,000 fee paid by the applicant for the initial or if necessary the second review of a comprehensive plan and transportation plan, not initiated on behalf of the locality.
- For a third or subsequent submission of a comprehensive plan and transportation plan, not initiated on behalf of the locality, that is requested by VDOT on the basis of the failure of the applicant to address deficiencies previously identified by VDOT, the fee is \$1,000.

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**

- A \$1,000 fee paid by the applicant for the initial or second review of an amendment to a comprehensive plan and transportation plan, not initiated on behalf of the locality.
- For a third or subsequent submission of an amendment to a comprehensive plan and transportation plan, not initiated on behalf of the locality, that is requested by VDOT on the basis of the failure of the applicant to address deficiencies previously identified by VDOT, the fee is \$1,000.

REGULATIONS

24 VAC 30-155-30. 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, 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 24 VAC 30-155-100) 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. 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 VDOT's 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.

D. 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 24 VAC 30-155-40 shall be prepared and provided to VDOT for review.

24 VAC 30-155-70. 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.

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 land development proposals that 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, 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 Residency staff should make sure 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 (on page 2) and its supporting regulations for rezoning 24 VAC 30-155-40 (presented on page 28 at the end of this Chapter), 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 rezoning proposals within *10 business days* of their receipt of a complete application to VDOT for review and comments if the rezoning proposal will *substantially affect* transportation on state controlled highways.

Determining when a rezoning substantially affects transportation on state highways (a summary of 24 VAC 30-155-40.A. that is presented in its entirety on page 28):

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 will substantially affect transportation on state highways if it 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, 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 substantially affect transportation on state highways if it 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 will substantially affect transportation on state highways if it generates more than 200 *daily vehicle trips* (less than 100 vehicle trips per peak hour) on a state highway and more than doubles the daily traffic volume the 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.

NOTE: 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 maintained highway (see illustration on next page).

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 state maintained highway.

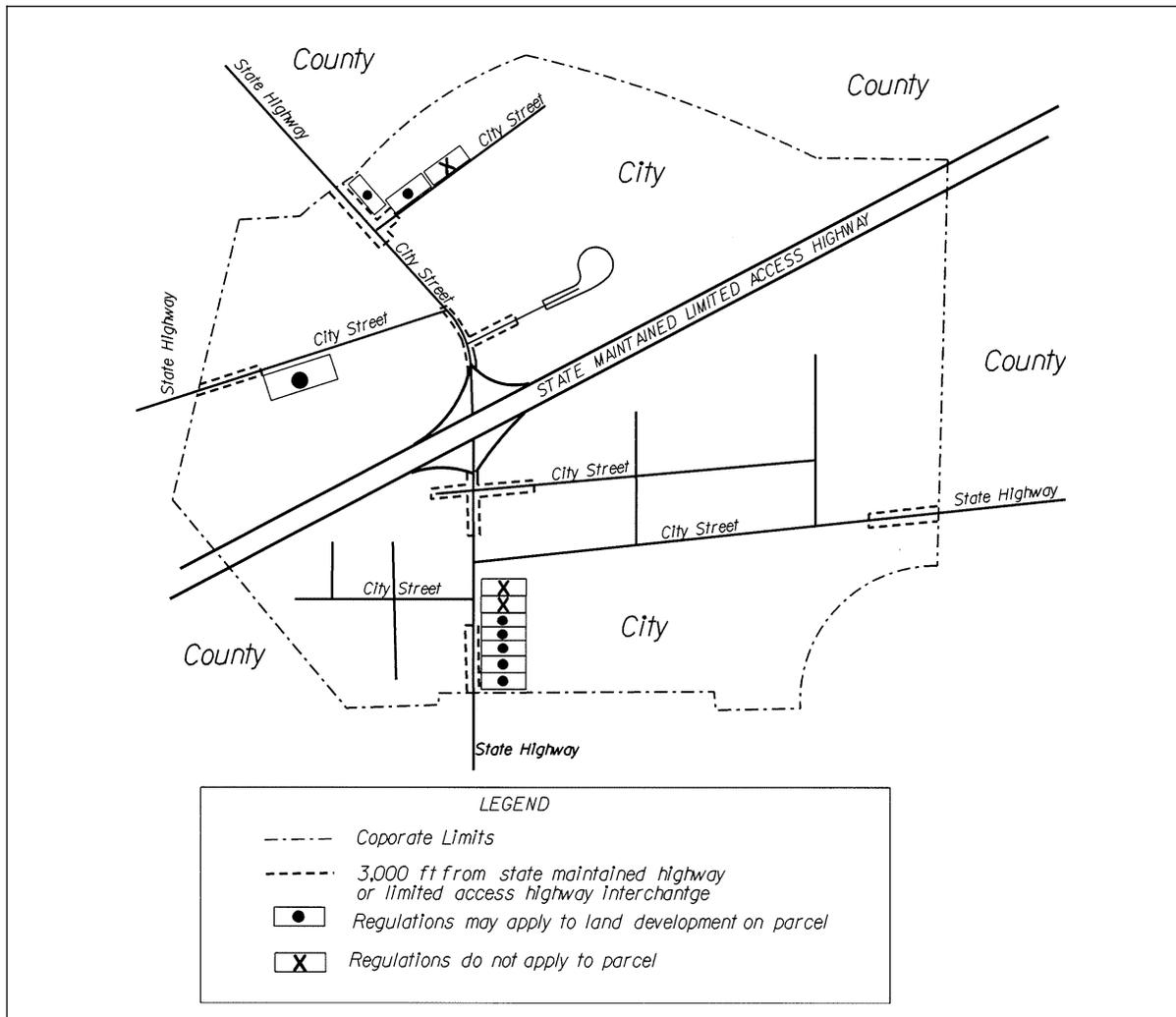
All other rezoning proposals (commercial, office, industrial, etc.) except for mixed use developments will substantially affect transportation on state highways if the rezoning will meet or exceed one or more of the following trip generation criteria:

- 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.
- 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 7), 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.



TYPICAL DEVELOPMENTS THAT WOULD TRIGGER THE NEED FOR A TRAFFIC IMPACT ANALYSIS				
		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	
Shopping Center	820	40,000 sf	20,000 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	
<p>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.</p>				

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.

The Locality's Rezoning Package Submittal

24 VAC 30-155-40.B. (presented on page 28) 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 27 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 in 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.

Rezoning packages are to be submitted to the applicable VDOT Residency Office. NOTE: The terms "Residency Office" and "Residency Administrator" refer to the Land Development Section and Land Development Manager in the Northern Virginia District.

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 24 VAC 30-155-40.C.

After the locality submits a rezoning package to the Residency Office along with the appropriate fee, the Residency Administrator or his designee will coordinate the review of the submittal with the Residency staff and the District Office as necessary (see the VDOT Administration of the Regulations chapter (page 65)).

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 is made within **45 days** of VDOT's receipt of a rezoning package.

VDOT'S OFFICIAL RESPONSE ON THE REZONING TRAFFIC IMPACT ANALYSIS. The Residency Administrator will submit VDOT's official response on the rezoning traffic impact analysis to the locality. *The official response will include* (i) a transmittal letter (a sample official response letter is presented in the Appendix on page 74) 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 response. NOTE: the written report comments may be included within the body of the letter.

The Residency Office also needs to send these documents to the District Transportation Planning/Land Development Manager or Coordinator (the "District Planning Manager").

DEADLINE TO PROVIDE VDOT'S OFFICIAL RESPONSE TO THE LOCALITY. The Residency Office's coordination of VDOT's review of the rezoning traffic impact analysis study must be completed so that VDOT's official response can be transmitted 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 response is not received within the deadlines set by the regulations, the locality may choose to proceed in the absence of VDOT comment. Again, the intent of the regulations is that VDOT's review does not lengthen the local planning process.

LOCALITY TO INCLUDE VDOT'S RESPONSE IN THEIR OFFICIAL RECORD. The regulations (24 VAC 30-155-40.C, page 29) specify that the local government include VDOT's official response in the locality's official public record on the rezoning application.

- The local government can do so by placing VDOT's official response (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 application.

VDOT TO MAKE OFFICIAL RESPONSE AVAILABLE TO THE PUBLIC. VDOT must make its official response available to the public through various means, e.g. posting on VDOT's website, copies available at the locality's planning office, a presentation to the locality.

- The District Planning Manager shall forward the documents posted on VDOT's website to the Land Development Section in VDOT's [Asset Management Division](#) along with a copy of the locality's decision on the rezoning application.

Written Report and Comments on VDOT's Evaluation of a Rezoning Traffic Impact Analysis 24 VAC 30-155-70

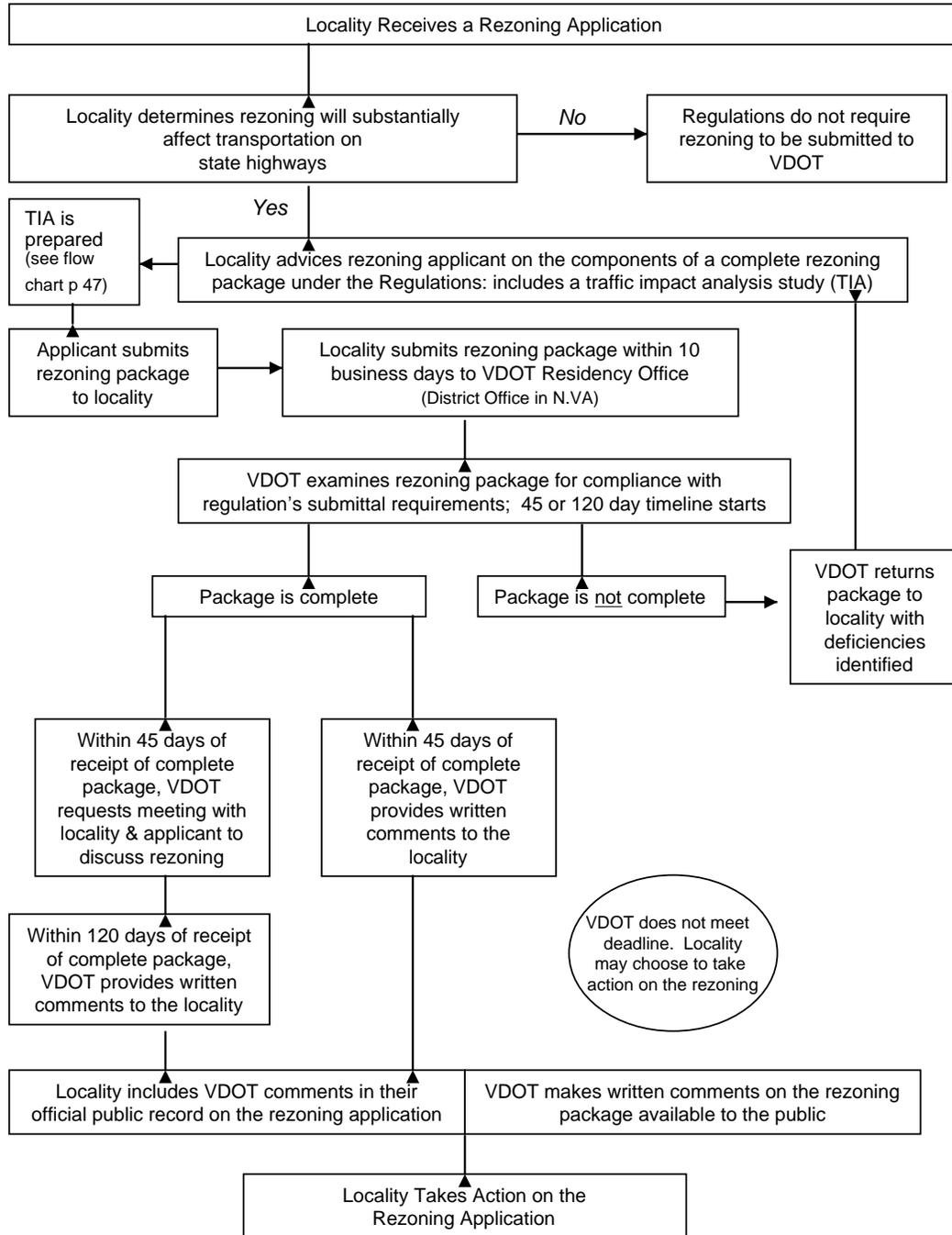
VDOT's written report will summarize the key findings of the traffic impact analysis study. The report shall include comments on the accuracy of the methodologies, assumptions and conclusions presented in the traffic impact analysis. The report may offer comments concerning transportation improvements that are recommended in the traffic impact analysis to mitigate any potential adverse impacts caused by the proposed development on state highways and may offer additional recommendations to address such impacts.

VDOT also may provide comments in a separate document dealing with possible entrance permit issues. These comments will be preliminary in nature and for informational purposes only. During the entrance permit review process all issues, including those preliminarily identified, will be evaluated and VDOT will provide the applicant with final comments.

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 REZONING PACKAGE REVIEW PROCESS



Rezoning Package Checklist

Traffic Impact Analysis Regulations: 24 VAC 30-155-40

- 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 accordance with 24-VAC-30-155-60.
- A CONCEPT PLAN** of the proposed development.
- ANY PROFFERED CONDITIONS** submitted by the applicant.
- FEES** -
 - 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 of the generator, as follows:
 - 100 or less vehicles per peak hour - \$500
 - More than 100 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.

REGULATIONS

24 VAC 30-155-40. 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 24 VAC 30-155-100), 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 more than doubles the daily traffic volume the 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.
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 24 VAC 30-155-60.
3. A concept plan of the proposed development.

C. Review process

After formal submission of a rezoning proposal to VDOT 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.

24 VAC 30-155-70. 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.

REVIEW OF SUBDIVISION PLATS AND SITE PLANS

Subdivision Plats and Site Plans

When a property is zoned for the intended land use and a development project is ready to move forward towards construction, the next step in the local land use regulatory process is the review of the project's subdivision and/or plat site plan. Subdivision plats and site plans provide detailed engineered drawings of the project.

Site plans are typically required of all uses other than single family residential and agriculture such as commercial sites, offices, industrial projects, townhouse developments, apartments. The specifications on what must be included in a site plan are listed in the locality's zoning ordinance. [§15.2-2246](#) and [§15.2-2286 \(8\)](#) of the Code of Virginia authorize and establish rules for site plan review.

Site plans (some localities use the term "plan of development") are evaluated to make sure the project will comply with zoning regulations (e.g. building setbacks, parking, landscaping), public agency requirements (e.g. entrance design, utility specifications, storm water management), and, if applicable, proffered conditions (e.g. buffers, off-site turn lanes, road widening, right of way dedication).

Subdivision plats provide a "map" of how land will be divided into lots (individual parcels) and the details on how such lots will be served by streets, sidewalks, utilities, drainage facilities, water and sewer. Although generally applied to single family residential developments, land can be subdivided for office and industrial parks as well as townhouses.

Like site plans, the review of subdivision plats helps to assure that public agency requirements for land development will be met as well as any conditions proffered during the rezoning of the land. The local subdivision ordinance contains the rules and procedures for the approval of a plat. §§ 15.2-2240 through -2279 of the Code provides the enabling statutes for local government regulation of land subdivision.

Preliminary subdivision plats show the general layout of the overall subdivision project, including public infrastructure. Details are provided on such matters as the arrangement, location, and width of streets and entrances; arrangement and size of lots; feasibility of water supply and sewage disposal; general handling of site drainage; and the relationship to adjoining properties.

Preliminary plats do not depict final engineering design and details. They are not recorded and no lots are created. Usually a subdivision is developed in sections (phases) with individual sections of a preliminary plat recorded as final plats (record plat).

Construction plans for public and private improvements are submitted once the basic layout and features of the subdivision are approved via the preliminary plat. When subdivisions are developed in phases, construction plans are submitted for each phase.

Such plans contain the detailed engineered drawings and calculations for handling storm water (e.g. locations, sizes, and profiles of storm drains and culverts), for streets (e.g. street grades, street cross sections showing width of pavement, utilities, rights of way), and for utilities (e.g. location, size,

capacity, elevations for sanitary sewers, water lines, gas conduits) as well as easement locations for telephone and electrical lines.

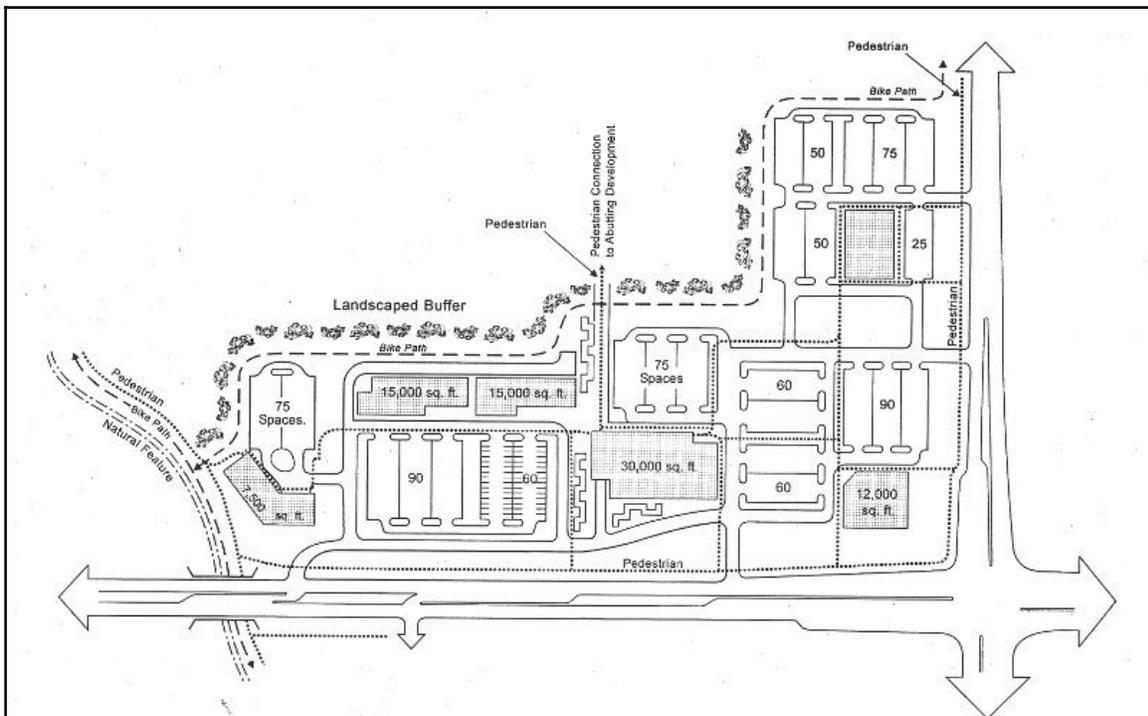
The construction plans are reviewed and approved by the appropriate local and state public agencies. These agencies assist in determining the amount of the bonds (surety) necessary for assuring that the public improvements are installed properly. In addition, VDOT calculates the bonds the developer will provide to guarantee the satisfactory performance of the subdivision streets over a period of time.

The final subdivision plat (record plat) provides sufficient mapping and engineering information (metes/bounds, distances and area) to accurately reproduce the subdivision on the ground. The final plat will show the exact location based on permanent reference monuments of street lines, lot lines, subdivision boundaries, street rights of way, easements, flood plains, buffers, etc. Any proffered conditions of zoning will usually be listed on the final plat.

The final plat will substantially conform to the preliminary plat. When a subdivision is developed in phases, the final plat will represent a section of the overall subdivision.

After review and approval by the local and state public agencies, final plats are recorded at the Clerks Office in the local Circuit Court. The lots on the recorded plat can then be sold and developed.

The illustration below offers an example of the details shown on a site plan: parking spaces, internal vehicular and pedestrian circulation, buffers, building footprints, entrance locations. If the buildings and related parking were to be sold as separate lots, a subdivision plat would also have to be submitted.



VDOT's Review of Subdivision Plats and Site Plans

Subdivision plats and site plans must be reviewed to ensure that the proposed design of the development is safe and adequate. On any connections that are made to existing roads, it is VDOT's responsibility to ensure that the safety of the traveling public is not diminished.

Subdivision plats and site plans are, in fact, final construction plans after the VDOT Residency Office (or District Land Development Section in Northern Virginia) approves them.

In each case, localities will normally forward the documents to VDOT personnel to examine to determine if the designs are adequate to accommodate traffic generated by the proposed development without creating a hazard to the traveling public and to the users of the entrance. A traffic impact analysis may be required by either the local jurisdiction or VDOT, based on the size and scope of the development (a small office building vs. an office park; a small residential subdivision vs. one with hundreds of lots).

VDOT's examination of subdivision plats and site plans will check to see how any on-site and off-site transportation related improvements proffered during the property's rezoning have been handled.

A critical part of the review of subdivision plats is to assure that the design specifications for new subdivision streets are in compliance with the Subdivision Street Requirements.

Finally, VDOT will use the design standards discussed in the Road Design Manual and apply the regulations of the Land Use Permit Manual and the Minimum Standards of Entrances to State Highways in its review of subdivision plats and site plans. The evaluation will assess the entrances to the development in terms of:

- Number, location, and spacing.
- Design geometrics & sight distance.
- Corner clearance near intersections.
- Signalization.
- Turn lanes.
- Internal circulation design, e.g. limiting the traffic that will use the entrance.
- Additional lanes on the highway.
- Additional right-of-way for future road improvements.
- In-entrance channelization island.
- Medians and crossovers.
- Pedestrians, bicycles, and transit accommodation.

VDOT's subdivision plat or site plan analysis should also determine what improvements are needed to preserve the functionality of the highway, accommodate the development's traffic, and protect the transportation corridor through the application of access management techniques, including:

- Shared entrances with adjacent properties.
- The spacing of proposed access point(s).
- Service or frontage roads.
- Traffic signal spacing.
- Promoting inter-parcel connectivity.

Locality to Submit Subdivision Plats and Site Plans to VDOT for Review

§15.2-2222.1 of the Code (on page 2) and its supporting regulations, 24 VAC 30-155-50 (presented on page 40 at the end of this Chapter) have been designed to enhance VDOT's ability to advise localities about how a proposed development could significantly impact the performance of the existing and future transportation network. The regulations:

- Provide criteria for determining which subdivision plats and site plans must be sent to VDOT.
- Provide the developer and the locality with detailed specifications on the contents of an acceptable traffic analysis.

§15.2-2222.1 of the Code requires localities to send subdivision plats and site plans within *10 business days* of their receipt of a complete application to VDOT for review and comments if the subdivision plat or site plan will *substantially affect* transportation on state controlled highways. The [table](#) on page 23 provides examples of the number of dwellings and the size of businesses that would produce a substantial impact or change.

Determining when a subdivision plat or site plan substantially affects transportation on state highways (a summary of 24 VAC 30-155-50. A. that is presented in its entirety on page 40):

A residential site plan (e.g. apartments) or **subdivision plat** (e.g. townhouses, single family homes on individual lots) 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 development's site plan/subdivision plat will substantially affect transportation on state highways if it will generate more than 100 *vehicle trips per peak hour* at the development's connection to a state highway.
 - a) If the development does not have a direct entrance, the development's connection is located where the road network that the development uses for access attaches to a state highway.
 - b) In cases where the development will have multiple entrances to highways, volumes on all entrances are combined for the purposes of this calculation; **or**
- 2) In a jurisdiction in which VDOT does *not* have maintenance responsibility for the local highway system, a development's site plan/subdivision plat will substantially affect transportation on state highways if it generates more than 100 vehicle trips per peak hour and has *an entrance* that is within 3,000 feet, measured along public roads or streets, of a connection to a state highway; **or**
- 3) A development's site plan or subdivision plat will substantially affect transportation on state highways if it generates more than 200 *daily vehicle trips* (less than 100 vehicle trips per peak hour) on a state highway and more than doubles the daily traffic volume the 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.

All other site plans (e.g. shopping center) and **subdivision plats** (e.g. office park) except mixed use developments will substantially affect transportation on state highways if the development 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 development's site plan/subdivision plat will substantially affect transportation on state highways if it generates more than 250 vehicle trips per peak hour or 2,500 vehicle trips per day at the development's connection to a state highway.
 - a) If the development does not have a direct entrance, the development's connection is located where the road network that the development uses for access attaches to a state highway.
 - b) In cases where the development 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 development's site plan/subdivision plat will substantially affect transportation on state highways if it generates more than 250 vehicle trips per peak hour or 2,500 vehicle trips per day and has *an entrance* that 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.

Both Items 2 above 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 supplemental traffic analysis for subdivision plats/site plans for larger projects to VDOT only if the subject property has an entrance within 3,000 ft (measured along public roads or streets) of a state maintained highway.

Trip generation calculations used for the purposes of determining if a subdivision plat or site plan meets the trip criteria:

- Shall be based upon the rates or equations published in the Institute of Transportation Engineers Trip Generation (described in the Reference Documents chapter, page 73).
- 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 analysis itself and effect the negotiation of any proffered improvements.
- For *redevelopment sites only* (refer to the Definitions chapter, page 7), when an existing use is to be developed as a different or denser use, trips currently generated by existing development that will be removed may be deducted from the total trips that are generated by the proposed land use.

The Locality's Subdivision Plat/Site Plan Package Submittal

24 VAC 30-155-50. B. (presented on page 40) describes the information to be included in the subdivision plat or site plan package the locality sends to VDOT. The contents of the package are summarized in a [checklist](#) format on page 39 for use by localities and VDOT. The locality needs to make sure that the subdivision plat or site plan package contains the specified items, which includes a **supplemental traffic analysis (STA)**.

It is recommended that the locality include the above referenced subdivision/site plan package checklist in their subdivision/site plan application forms so that the locality's application is complete when all of the items on the checklist have been submitted to the locality.

Localities are to submit the subdivision plat and site plan packages to the applicable Residency Office. (NOTE: The terms "Residency Office" and "Residency Administrator" refer to the Land Development Section and Land Development Manager in the Northern Virginia District)

A subdivision plat or site plan 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.

Supplemental Traffic Analysis 24 VAC 30-155-50.C.

The contents of a Supplemental Traffic Analysis (STA) for a subdivision plat or site plan will vary based on whether a traffic impact analysis was submitted to VDOT during the rezoning of the subject property in accordance with 24 VAC 30-155-40, (refer to the Review of Rezoning Proposals chapter on page 18). The STA contents also will vary according to the amount of time since the approval of the rezoning and whether the conditions have changed such that the proposed development will have a greater impact on state highways.

- 1) If the rezoning traffic impact analysis assumptions are still valid and the site plan/subdivision plat is submitted within two years of the locality's approval of the rezoning, then the STA will be a letter from the site plan/subdivision plat applicant that provides VDOT with the following information:
 - a) A statement that the impacts analyzed in the development's rezoning traffic impact analysis have not materially changed nor have the adverse impacts on state-controlled highways increased.
 - b) The date of the letter from VDOT that provided the locality with VDOT's official response on the rezoning.
- 2) If the rezoning traffic impact analysis assumptions have not changed, any projected adverse impacts on state highways have not increased, and the site plan/subdivision plat is submitted more than two years of the locality's approval of the rezoning, then the STA will be a letter from the site plan/subdivision plat applicant that provides VDOT with the following information:
 - a) A statement that the impacts analyzed in the development's rezoning traffic impact analysis have not materially changed nor have the adverse impacts on state-controlled highways increased;
 - b) The date of the VDOT letter the locality received with VDOT's official response on the rezoning;
 - c) Documentation supporting the statement that the rezoning traffic impact analysis is still valid; and
 - d) A copy of the original rezoning traffic impact analysis study.

NOTE: Based on the review of the above information, VDOT may require additional analysis as described below.

- 3) If a rezoning traffic impact analysis was not submitted to VDOT in accordance with 24 VAC 30-155-40, then the subdivision plat/site plan applicant must submit a STA that contains the information required for a rezoning traffic impact analysis with 100 to 499 peak hour trips. If the proposed

development will generate less than 100 peak hour trips, then the lowest required elements for the rezoning traffic impact analysis shall be used (see the [Required Elements table](#) on page 49).

- 4) If the conditions analyzed in the rezoning traffic impact analysis have changed such that there will be an increase in the adverse impacts of the development on state highways, (or if required as described in the above NOTE), the site plan/subdivision plat applicant must submit a STA that includes the elements required for rezoning traffic impact analysis with 100 to 499 peak hour trip. If the proposed development will generate less than 100 peak hour trips, then the lowest required elements for the rezoning traffic impact analysis shall be used.

The Subdivision Plat/Site Plan Package Review Process Rules 24 VAC 30-155-50. D.

After the locality submits a subdivision plat or site plan package containing the items listed in the checklist to the Residency Office, the Residency Administrator or his designee will coordinate the review of the submittal with the Residency staff and the District Office as necessary.

The VDOT Administration of the Regulations chapter (page 65) contains a section on the Residency Office responsibilities for making sure that VDOT complies with the regulation's submission rules and the review deadlines in §15.2-2222.1 of the Code.

MEETING WITH THE LOCALITY. VDOT's review of the package may lead to the need for the applicable VDOT review staff to meet with the local government staff and applicant to discuss potential modifications to address any concerns or deficiencies.

- The meeting request must be made within **30 days** of VDOT's receipt of a site plan or subdivision plat package.

VDOT'S OFFICIAL RESPONSE ON THE SUBDIVISION PLAT/SITE PLAN STA. The Residency Administrator will submit VDOT's official response on the STA to the locality. *The official response will include* (i) a transmittal letter (a sample official response letter is presented in the Appendix on page 74) and (ii) a written report containing the results of VDOT's evaluation of the STA prepared for the subdivision plat or site plan proposal. A copy of the STA will be attached to VDOT's official response. **NOTE:** the contents of 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.

The Residency Office also needs to send these documents to the District Transportation Planning/Land Development Manager or Coordinator (the "District Planning Manager").

DEADLINE TO PROVIDE VDOT'S OFFICIAL RESPONSE TO THE LOCALITY. The Residency Office's coordination of VDOT's review of the subdivision plat or site plan information package must be completed so that VDOT's official response can be transmitted to the locality:

- Within **30 days** of VDOT's receipt of the package if no meeting is scheduled, or
- Within **90 days** of the receipt of the package.

LOCALITY MAY TAKE ACTION IF DEADLINES ARE NOT MET. If VDOT's official response is not received within the deadlines set by the regulations, the locality may choose to

proceed in the absence of VDOT comment. Again, the intent of the regulations is that VDOT's review does not lengthen the local approval process.

- Regardless of whether the locality has received VDOT's official response within the specified deadline, an entrance to the site cannot be constructed without a VDOT permit.

LOCALITY TO INCLUDE VDOT'S RESPONSE IN THEIR OFFICIAL RECORD. The regulations (see 24 VAC 30-155-50. D, page 42) specify that the local government include VDOT's official response in their official public record on the subdivision plat or site plan application.

- The locality can do so by placing VDOT's official response (transmittal letter and written report) along with the STA in the case file for the application and by referencing this information in the locality's staff report on the subdivision plat or site plan.
- The key findings and comments in VDOT's written report also should be acknowledged in the minutes of any meeting in which the application is discussed (depending on the locality, subdivision plat/site plan applications are approved administratively, by the Planning Commission, or by the governing body).

VDOT TO MAKE OFFICIAL RESPONSE AVAILABLE TO THE PUBLIC. VDOT must make its official response available to the public through various means, e.g. posting on the District Office's website, copies available at the locality's planning office, a presentation to the locality.

- The District Planning Manager shall forward the documents posted on the District's website to the Land Development Section in VDOT's [Asset Management Division](#) along with the locality's decision on the subdivision plat/site plan application.

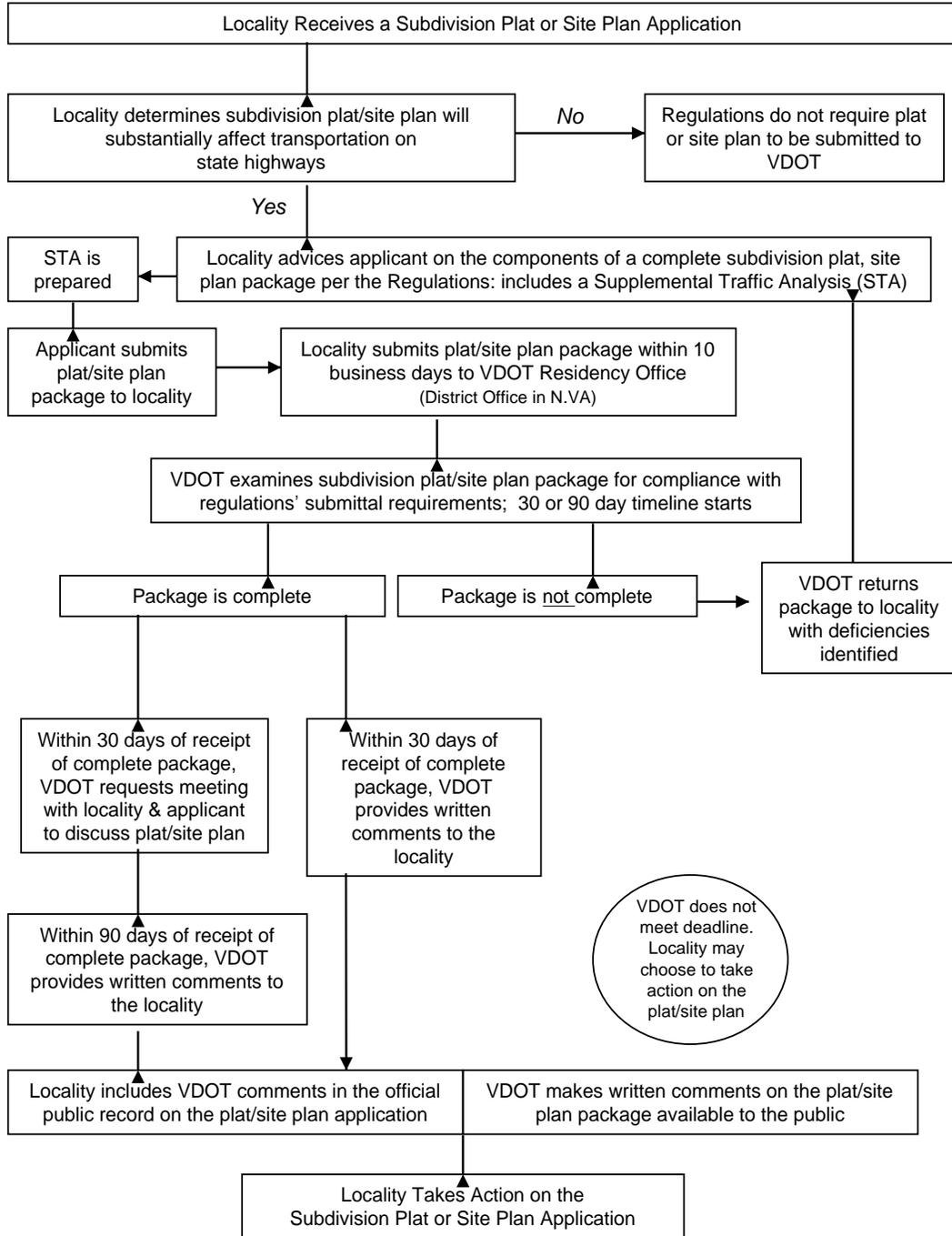
Written Report and Comments on VDOT's Evaluation of a Subdivision Plat or Site Plan Supplemental Traffic Analysis 24 VAC 30-155-70

VDOT's written report will summarize the key findings of the supplemental traffic analysis study on the subdivision plat or site plan development. The report shall include comments on the accuracy of the methodologies, assumptions and conclusions presented in the traffic analysis. The report may offer comments concerning transportation improvements that are recommended in the traffic analysis to mitigate any potential adverse impacts caused by the proposed development on state highways and may offer additional recommendations to mitigate such impacts.

VDOT also may provide comments in a separate document dealing with possible entrance permit issues. These comments will be preliminary in nature and for informational purposes only. During the entrance permit review process all issues, including those preliminarily identified, will be evaluated and VDOT will provide the applicant with final comments.

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.

THE SUBDIVISION PLAT OR SITE PLAN PACKAGE REVIEW PROCESS



Subdivision Plat or Site Plan Package Checklist

Traffic Impact Analysis Regulations: 24 VAC 30-155-50

- A COVER SHEET** containing:
 - Contact information** for the
 - Locality,
 - Developer (or owner);
 - Site information**
 - Development location,
 - Highways connected to,
 - Parcel number or numbers; and
 - Proposal summary** with the
 - Development name,
 - Size in acres.
- A SUPPLEMENTAL TRAFFIC ANALYSIS** as defined in 24-VAC-30-155-50 C.
- A CONCEPT PLAN** of the proposed development.
- A LIST OF PROFFERED CONDITIONS** approved by the local government that apply to the development.
- FEES** -
 - For the initial or second review** of a subdivision plat, site plan, or plan of development accompanied by a supplemental traffic analysis, a single fee for both reviews will be determined by the number of vehicle trips generated per peak hour of the generator, as follows:
 - 100 or less vehicles per peak hour - \$500
 - More than 100 vehicles per peak hour - \$1,000
 - For a third or subsequent submission** of a subdivision plat, site plan, or plan of development accompanied by a supplemental traffic analysis 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.

REGULATIONS

24 VAC 30-155-50. Subdivision plat, site plan, plan of development.

A. Proposal submittal.

The locality must submit a package to VDOT within 10 business days of receipt of a complete development 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 these requirements shall be based upon the rates or equations published in the Institute of Transportation Engineers Trip Generation (see 24 VAC 30-155-100), 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 development 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 has an entrance that 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 more than doubles the daily traffic volume the 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.
2. For the purposes of this section, all other development 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 has an entrance that is within 3,000 feet, measured along public roads or streets, of a connection to a state-controlled highway.

B. Required proposal elements.

1. The package submitted by the locality to VDOT shall contain sufficient information and data so that VDOT may determine the location of the development, 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.

- a. A cover sheet containing:
 - (1) Contact information for locality and developer (or owner);
 - (2) Development location, highways connected to, and parcel number or numbers; and
 - (3) Proposal summary with development name and size in acres.
- b. A supplemental traffic analysis, as defined in 24 VAC 30-155-50 C.
- c. A concept plan of the proposed development.

C. Supplemental traffic analysis.

For the purposes of this subsection, a supplemental traffic analysis will be defined as follows:

1. In cases where a rezoning traffic impact statement has been submitted to VDOT in accordance with 24 VAC 30-155-40, if all assumptions made in the traffic impact statement prepared for the rezoning remain valid and if the submission of the subdivision plat, site plan, or plan of development to the locality occurs within two years of the locality's approval of the rezoning proposal, the supplemental traffic analysis shall be a letter that provides VDOT with the following information:

- a. A statement that the impacts analyzed in the development's rezoning traffic impact statement have not materially changed nor have the adverse impacts on state-controlled highways increased.
- b. The date of the VDOT letter providing the locality comments on the rezoning.

2. In cases where a rezoning traffic impact statement has been submitted to VDOT in accordance with 24 VAC 30-155-40, if all assumptions made in the traffic impact statement prepared for the rezoning have not materially changed, the adverse impacts of the proposal on state-controlled highways have not increased and if the submission of the subdivision plat, site plan, or plan of development to the locality occurs more than two years of the locality's approval of the rezoning, the supplemental traffic analysis shall be a letter that provides VDOT with the following information:

- a. A statement that the impacts analyzed in the development's rezoning traffic impact statement have not materially changed nor have the adverse impacts on state-controlled highways increased;
- b. The date of the VDOT letter providing the locality comments on the rezoning;
- c. Documentation supporting the statement that the development's rezoning traffic impact statement is still valid; and
- d. A copy of the original traffic impact statement.

After review of such letter, VDOT may require submission in accordance with subdivision 4 of this subsection.

3. In cases where the rezoning traffic impact statement has not been submitted to VDOT in accordance with 24 VAC 30-155-40, the supplemental traffic analysis shall contain the information required for rezoning traffic impact statements with 100 to 499 peak hour trips. If the subdivision plat, site plan, or plan of development will generate less than 100 peak hour trips then the lowest required elements for the rezoning traffic impact statement shall be used.

4. In cases where a rezoning traffic impact statement has been submitted to VDOT in accordance with 24 VAC 30-155-40 and the conditions analyzed in such traffic impact statement have materially changed such that the adverse impacts of the proposal on state-controlled highways have increased or if required pursuant to subdivision 2 of this subsection, the supplemental traffic analysis shall contain those elements required for rezoning traffic impact statements with 100 to 499 peak hour trips, as determined by VDOT. If the subdivision plat, site plan, or plan of development will generate less than 100 peak hour trips then the lowest required elements for the rezoning traffic impact statement shall be used.

D. Review process.

After formal submission of a subdivision plat, site plan, or plan of development to VDOT for review, VDOT may, pursuant to § 15.2-2222.1 of the Code of Virginia, request a meeting with the locality to discuss potential modifications to the proposal to address any concerns or deficiencies. The request must be made within 30 days of receipt by VDOT of the proposal. VDOT must provide written comments to the locality within 30 days of VDOT's receipt of the proposal if no meeting is scheduled or within 90 days of the receipt of the proposal otherwise. VDOT will 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 subdivision plat, site plan, or plan of development if VDOT's comments on the submission have not been received within the timelines in this section.

24 VAC 30-155-70. 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.

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. 24 VAC 30-155-60 on page 59 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.

Chapter 155 vs. Chapter 71 Regulations: Traffic Analysis

It is important to differentiate between the Chapter 155, 24 VAC 30-155-60 Traffic Impact Analysis Regulations traffic impact statement (traffic impact analysis) and the Chapter 71, 24 VAC 30-71-50 Minimum Standards of Entrances to State Highways' traffic analysis plans. Each set of regulations serve a different purpose.

The **Chapter 155, 24 VAC 30-155-60 regulations** provide rules and procedures for VDOT to evaluate comprehensive plans and traffic impact analyses for land development proposals that will have a *significant impact* on state controlled highways (see the [Typical Development table](#) on page 23).

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 land development proposals. 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 steps in the local land development review process, when the land development

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, **Chapter 71, 24 VAC 30-71-50 Minimum Standards of Entrances to State Highways** may require a detailed traffic analysis to be provided with an entrance permit application in order “for the Department to determine entrance design features to adequately serve the roadway facility as well as the proposed development”. 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 free traffic movements, disruption to the fronting road, or cause safety problems. Improvements necessary to ameliorate such conditions caused by an entrance may be required by VDOT as a condition of the permit.

As a result, *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 24 VAC 30-155-60 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 24 VAC 30-155-60 traffic impact analysis information (such as for a subdivision plat or site plan) is sufficiently detailed and up-to-date so that a Chapter 71, 24 VAC 30-71-50 “traffic analysis plan” will not be needed in order for an entrance permit to be issued.

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

The Traffic Impact Analysis Regulations were developed to ensure that reasonably accurate and reliable information is 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 land development 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 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, recommended improvements) and the “Methodology and Standard Assumptions” for conducting the analysis (e.g. data collection requirements, use of rates vs. 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 49; 24 VAC 30-155-60.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.

The methodology and standard assumptions used in preparing the traffic impact analysis are specified in the regulations (24 VAC 30-155-60.D.; summarized starting on page 54). 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.

The land development 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.

Upon receipt of a traffic impact analysis for a rezoning application or for a site plan or subdivision plat 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 in the traffic impact analysis to mitigate potential impacts to state highways caused by the proposed development, and
- may include additional recommendations to mitigate potential impacts to state highways cause 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 2). VDOT will return it to the locality and the applicant with the deficiencies identified.

Scope of Work Meeting

For land development 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 land development 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 24 VAC 30-155-60.B., page 59, 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 preparation of 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, the geographical size of the development, and the 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.

It is important that the scope of work meeting leave no assumptions or expectations undiscussed and conclude with a clear understanding of the traffic impact analysis to be prepared and the deadlines for completion.

The scoping requirements that are agreed to at the scope of work meeting should be included with all traffic impact analysis submittals.

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

The Appendix (page 73) contains several checklists and forms that can be used to make sure that all aspects of the proposed development are discussed.

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. The form will be provided to the applicant or their designee at least two (2) weeks prior to the scheduled scope of work meeting. This form will be posted on the VDOT website and copies should be available at the VDOT Residency offices.

The applicant or their designee is to complete this form and return it to the VDOT Residency no later than three (3) business days prior to the 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. A set of 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.

SAMPLE OFFICIAL RESPONSE 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 land development project's traffic impact analysis or a comprehensive plan. The letters reference VDOT's report summarizing the key findings of its evaluation and any VDOT comments. The letters also advise the locality on their responsibility to have VDOT's report included in the locality's official public records.

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: 24 VAC 30-155-60.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.

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 if requested by VDOT 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.
- Under "Analysis of Future Conditions with Development", the element on page 51 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
(24 VAC 30-155-60. C)**

Item	Site Generated Peak Hour Trips			
	Less than 100	100 to 499	500 to 999	1,000 or more
<i>Background Information</i>				
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 10% or more of the new vehicle trips generated by the proposal are distributed - not to exceed two miles.	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
<i>Analysis of Existing Conditions</i>				
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 bus 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 j
Speed Study k	If requested by VDOT	If requested by VDOT	If requested by VDOT	If requested by VDOT
Crash history near site l	If requested by VDOT	If requested by VDOT	If requested by VDOT	If requested by VDOT
Sight distance m	If requested by VDOT	If requested by VDOT	If requested by VDOT	If requested by VDOT
<i>Analysis of Future Conditions Without Development n</i>				
Description of and the 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 bus 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 j

Item	Site Generated Peak Hour Trips			
	Less than 100	100 to 499	500 to 999	1,000 or more
<i>Trip Generation</i>				
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
<i>Site Traffic Distribution & Assignment</i>				
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
<i>Analysis of Future Conditions With Development</i>				
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 bus 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 j
Recommended Improvements				
Description and diagram of the location, nature, and extent of the 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 j
Conclusions				
Clear, concise description of the study findings.	Required	Required	Required	Required

Footnotes

j 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.

k 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.

l 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.

m 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.

n 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 double 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.

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, 24 VAC 30-155-60. D. “Methodology and Standard Assumptions” presented at the end of this Chapter starting on page 59.**

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), those requirements 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. Furthermore, keep in mind that AASHTO’s A Policy on Geometric Design of Highways and Streets 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 Trip Generation by the Institute of Transportation Engineers (ITE), see page 73 about this publication, unless the VDOT reviewer agrees to the use of alternate trip generation rates based upon local trip generation studies. Rezoning proposals shall assume the highest vehicle trip generating use allowable under the proposed zoning classification.

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

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 multi-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.

NOTE: While internal capture and pass-by rates exceeding the standards set out in the regulation may be used with the submittal of 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. 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 roadways shall utilize the techniques described in the Highway Capacity Manual (see page 73 about this publication), which may be supplemented by other capacity or delay methodologies. aaSIDRA traffic analysis software should be used for roundabouts (refer to page 57 for the detailed discussion on software).

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. 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. 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 used this trip reduction if the criteria listed in the regulation are met. The criteria include connectivity standards, the existence of appropriate accommodations, and required service level. 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. In the event that site-specific (non-ITE) 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.

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 site-specific (non-ITE) 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 accordance with the procedures in the Manual on Uniform Traffic Control Devices or the ITE Manual of Traffic Signal Design (information on these two publications is presented on page 73).

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

12. Recommended Improvements.

Recommendations made in the traffic impact analysis for improvements to transportation facilities shall be in accordance with the geometric standards in VDOT’s Road Design Manual.

Crash History and Analysis

If a study of the crash history is required, the roadway segments or intersections that are identified should be compared to the overall crash record with particular attention to severe crash density and rates. For longer segments, corridors should be divided into sections of similar configuration and environments (e.g., cross-section, terrain, adjacent land-use/driveway density). A summary of the following types of crash cause-related data for the entire segment or by section based on knowledge of the area should be provided:

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

The analysis should be a trial and error refinement of the most important causal factors. Histograms or counts of the total crashes, deaths plus injuries, and collision types (summing to total crashes) should be presented for each section of the crash analysis. Review of the predominant collision types plotted by section around the critical sections may reveal additional length and details to be considered for further investigation, so this should be kept in mind when defining the areas that need to be studied in the crash history portion of the TIA.

Traffic Analysis Software for Conducting Calculations

There are a number of software packages available for analyzing intersection treatments, modeling traffic flow, estimating accident probabilities, estimating the traffic carrying ability of roadways, and

traffic signal optimization. **Use of such software varies by Region and District.** 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 5.0 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

24 VAC 30-155-60. Traffic impact statement.

A. Traffic impact statement.

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 VDOT 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.

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. 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 pages 49 to 53: *Required Elements of a Traffic Impact Analysis.*

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

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 24 VAC 30-155-100), unless VDOT agrees to allow the use of alternate trip generation rates based upon local trip generation studies. Rezoning proposals shall assume the highest vehicle trip generating use allowable under the proposed zoning classification. In determining which trip generation process (equation or rate) may be used, the preparer shall follow the guidance presented in the Trip Generation Handbook – an ITE Proposed Recommended Practice (see 24 VAC 30-155-100), 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 multi-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. Multi-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. Unless otherwise approved by VDOT, the following internal capture rates may 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.

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.

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. 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 of roadways shall utilize the techniques described in the Highway Capacity Manual (see 24 VAC 30-155-100). 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 – non-center 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, intersection treatments, 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 demand longer dwell time at stops or more 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 24 VAC 30-155-100). The TIS shall provide both route and segment quality of 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.

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%. 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%. These reductions may only be taken if:

- (1) Pedestrian facility coverage in a 2,000-foot radius of the proposal 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; and
- (3) There are at least two of the 10 major land use classifications, as defined in ITE Trip Generation (see 24 VAC 30-155-100), 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 proposal 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; and
- (3) There are at least two of the 10 major land use classifications, as defined in ITE Trip Generation (see 24 VAC 30-155-100), 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 24 VAC 30-155-100) 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 24 VAC 30-155-100).



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 Residency 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, and
- Regulating the development of subdivision streets intended to be included in the secondary system.

The 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 2) and the Traffic Impact Analysis Regulations, 24 VAC 30-155, now **require localities** to submit comprehensive plans and traffic impact analysis packages for rezoning applications, site plans, and subdivision plats that meet certain trip generation criteria to VDOT for review. VDOT, then, must provide a written report with its comments on the documents to the locality within certain time frames.

In performing this work, VDOT operates in its advisory role: the locality makes the final decision on comprehensive plans and land development 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, normally 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. Because 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 have to meet the pertinent regulations and standards in the Land Use Permit Manual, Minimum Standards of Entrances to State Highways, and Subdivision Street Requirements, all of which are part of the Virginia Administrative Code.

To provide assistance in this regard, VDOT's Guidelines for Land Development offers detailed information on key concepts and standards on a wide variety of land development topics and presents recommended design and procedural standards. Volume I covers the local land use planning and regulatory process while Volume II focuses on the technical aspects of entrance and intersection characteristics associated with proposed residential and business development: e.g. sight distance, entrance design, auxiliary lanes, medians/crossovers, access control.

Administration Overview

The Traffic Impact Analysis Regulations require VDOT's involvement in a multi-stage process. A scope of work meeting with the locality and the land development applicant is required for larger projects and encouraged for all projects. These meetings are conducted by VDOT to review the elements, methodology and assumptions to be used in the preparation of the traffic impact analysis on the land development proposal, and identify any related local requirements.

The regulations require localities to submit information packages for comprehensive plans, rezoning applications, site plans and subdivision plats to VDOT and instruct the Department to review and provide the local government with an official response that includes a written report on VDOT's key findings on the information packages. The regulations establish deadlines for VDOT's response to assure that VDOT's review does not extend the local approval process.

Residency Offices

The first point of contact for local government staff and developers will normally be the Department's Residency Office for the county involved. As part of maintaining a continuing liaison with local governments, the Residency Administrator works cooperatively with the governing body, planning commission, and planning staff throughout the various steps in the land development process. (NOTE: the terms "Residency Office" and "Residency Administrator" refer to the Land Development Section and Land Development Manager in the Northern Virginia District).

The Residency Office, therefore, will serve as the clearinghouse for requests to hold a scope of work meeting on traffic impact analysis studies and for comprehensive plan and land development proposal packages submitted by local jurisdictions in accordance with §15.2-2222.1 of the Code and the Traffic Impact Analysis Regulations. (NOTE: in Northern Virginia, site plan and subdivision plat packages are sent directly to the Northern Virginia District Office.)

Generally, all communications between VDOT and the local government should involve the Residency Office. Due to the Residency's regular interaction with the local government, they need to be aware of all land development review activities being conducted by VDOT.

COMPREHENSIVE PLAN

The Residency Administrator will forward comprehensive plan packages and locality requests for transportation planning assistance to the District Transportation Planning/Land Development Manager or Coordinator (the "District Planning Manager"). The District Planning Manager is responsible for VDOT's activities associated with:

- 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 the request of a local government cost estimates for road and transportation improvements recommended by the comprehensive plan (§15.2-2223 of the Code).
- Reviewing and preparing written reports on comprehensive plan and plan amendment packages that can be anticipated to result in substantial changes or impacts to the existing transportation network (state maintained highways).

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 review process rules** (page 11) that covers such details as the deadline for requesting a meeting with the locality, what constitutes VDOT's *official response 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 official response letters* to a locality are presented in the Appendix on the last two pages of this document.

TRAFFIC IMPACT ANALYSIS STUDIES & LAND DEVELOPMENT PROPOSALS

The Traffic Impact Analysis chapter provides a detailed discussion on all aspects of the preparation of traffic impact analyses. The rules pertaining to scope of work meetings are described on page 45. *Forms and checklists* are presented in the Appendix on page 74 to help assure that all aspects of the proposed development are discussed at the meeting and that the traffic impact analysis that is submitted meets the provisions of the regulations.

The Residency Office is responsible for making sure that VDOT complies with the regulation's submission rules and review deadlines for rezoning, subdivision plat and site plan packages. To assist in this regard, a chapter has been prepared on these areas of responsibility: Review of Rezoning Proposals (page 18); Review of Subdivision Plats and Site Plans (page 30). Each chapter includes a *flow chart* illustrating the steps specified in the regulations for VDOT's review of land development proposals and *checklists* on the information the locality is required to submit to VDOT.

These two chapters also offer sections on **the review process rules** (pages 24 and 36) that cover such details as the deadline for requesting a meeting with the locality, what constitutes VDOT's *official response and written report* on the specific package, and the amount of time VDOT has to provide the results of its analysis to the locality. *Sample official response letters* to a locality are presented in the Appendix on the last two pages of this document.

RESIDENCY OFFICE CLEARINGHOUSE TASKS

The Residency Office will need to perform the following basic tasks to carry out its responsibilities as VDOT's clearinghouse for the administration of the regulations:

- 1. Scope of Work Meeting on a Land Development Project.** The Residency Office is responsible for making the arrangements for scope of work meetings to discuss a traffic impact analysis. Once a meeting is requested, the locality and the applicant will be provided with a date, time and location. The District Office may also need to attend the meeting and will need to be advised on the logistics.
- 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.** Initiate and maintain a file on all comprehensive plan packages and all rezoning, site plan, and subdivision plat packages that are submitted. The Land Development Tracking System – *LandTrack* - can be used to help in this regard (see Appendix, last several pages of this document).
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 71.
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 simplify this task. Return incomplete or deficient submittal packages to the locality and identify the 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. **Project Time Line.** Prepare a time line/time schedule for the submittal in order to track its review by Residency, District, and Central Office staff and to meet the time period allotted by the regulations. [Timeline software](#) is one example of a software package for planning and monitoring a review schedule.
8. **Assistance from the District Offices.** Determine if assistance will be needed from the District staff in the review of the submitted documents. The factors to consider include:
 - a) The capabilities of the Residency staff.
 - b) The size and density of the development.
 - c) The level-of-service on the existing or proposed highways that will provide access.
 - d) Impact on an Interstate highway or any limited access facility.
 - e) Potential impacts to the regional transportation network.
 - f) The proximity of major planned roadway improvements.
9. **District Involvement.** If the Residency needs help with the analysis of land development documents, the Residency should contact the District Planning Manager. The Residency will need to advise this individual about:
 - a) The deadline for requesting a meeting with the locality/applicant.
 - b) The deadline for returning VDOT's official response to the locality.
 - c) Any applicable local codes or ordinances that are stricter than VDOT requirements.
10. **Official Response to the Locality/Made Available to the Public.** The Residency Administrator or designee will submit VDOT's official response to the local government and will work with the District Planning Manager to coordinate their efforts to make the official response available to the general public (as discussed on pages 12 to 13, 24 to 25,

and 36 to 37). Sample official response letters are presented in the Appendix on the last two pages of this document.

District Offices

The District Office is responsible for assisting the Residency with scope of work meetings and with the review of local comprehensive plans/transportation plans and traffic impact analysis packages for rezoning applications, site plans, and subdivision plans.

The District Office will take the necessary steps to provide a thorough evaluation of the plan or land development traffic impact analysis studies and *prepare a written report summarizing the key findings of VDOT's evaluation*. A detailed discussion on the written reports required by 24 VAC 30-155-70 of the regulations is presented at the end of the comprehensive plan, rezoning, and subdivision plat/site plan chapters (pages 13, 25, and 37).

Depending on the organization of the District Office, this analysis may involve multiple sections within the District: Transportation Planning, Land Development, Traffic Engineering, and Location & Design. In certain instances the Regional Traffic Engineer may be asked to assist in this regard.

In addition, VDOT will have several *on-call transportation consultants* to help with the work load. The consultants will evaluate traffic impact analysis studies according to the specifications in 24 VAC 30-155-60 for a traffic impact study. The consultants then will produce written reports on their findings for transmittal back to VDOT. The consultants may also be available to evaluate comprehensive plans. Additional information concerning the on-call consultants is available from the Land Development Section within the [Asset Management Division](#).

It will be important for the District Administrator to provide the Residency with one point of contact who will be in charge of coordinating the review process within the District Office. Usually this will be the District Planning Manager. This individual will need to perform the following basic tasks:

1. **Review Deadlines.** Notify all District reviewing sections as well as the Regional Traffic Engineer and on-call consultant, if applicable, about the deadlines including:
 - a) The deadline for requesting a meeting with the locality/applicant.
 - b) The date written comments have to be returned to the locality.
 - c) The amount of time allotted for the District reviewing sections to complete their analysis and return their comments to the Planning Manager.

2. **Central Office Technical Assistance.** There may be occasions when the District Office will need to contact a Central Office Division concerning:
 - a) The interpretation of the regulations.
 - b) An exception to a VDOT policy.
 - c) A technical question on a matter within the program area of a Division.

These inquiries should be made to the Land Development Section within the Asset Management Division. The District will need to specify the deadline(s) for responding

to the matter as referenced in item 1. above. Staff in this Division will contact the appropriate entity within VDOT and then follow up to make sure that the District receives an answer to the inquiry in a timely manner (a list of the applicable Division is presented below).

- 3. Provide Official Response to the Residency.** When the District Office evaluation of the a comprehensive plan/transportation plan or traffic impact analysis package for a rezoning application, site plan, or subdivision plat is complete, the District Planning Manager will need to consolidate all comments, resolve any conflicts, and prepare a written report on its key findings (unless handled by the on-call consultant).
- a) Generally, VDOT's official response will be submitted to the locality by the Residency Office.
 - b) The District Planning Manager will forward a copy of all documents to the Asset Management Division along with a copy of the local government's decision on the plan or land development proposal.

CENTRAL OFFICE DIVISIONS WITH AREAS OF LAND DEVELOPMENT RESPONSIBILITY

Asset Management Division: Has final approval authority for permits, evaluates unusual proposals, and determines compliance with the subdivision street requirements.

Environmental Division: Provides technical assistance on environmental permits, wetlands delineation and compensation, stream assessments, endangered species, and plantings on VDOT right-of-way and at advertising signs off of right-of-way.

Location and Design Division: Reviews road geometrics, reviews drainage designs, and examines how the proposed site may impact planned road projects.

Materials Division: Provides information and training on the assessment of highway construction materials and the application of innovative engineering. The District Materials Engineers represent the State Materials Engineer in matters pertaining to sampling, inspection, field-testing, construction, maintenance materials, and soil survey and pavement design.

Traffic Engineering Division: Evaluates unusual proposals for operational and safety functions, reviews entrance designs, highway crossovers, and standards for unusual traffic control devices.

Transportation and Mobility Planning Division: Provides the prime reviewers at the Residency and District Offices with assistance and/or consultation, as appropriate, in the review of plans for traffic impact on existing roads and future transportation improvements, determinations on adequacy of traffic impact studies (capacity analysis), development of recommendations for improvements, and/or review of developer proffers for consistency with long-range plans and/or programs.

FEE SCHEDULE

24 VAC 30-155-80 of the regulations establish the criteria for determining VDOT's fees for the review of comprehensive plans, rezoning applications, site plans, and subdivision plats submitted in accordance with the Traffic Impact Analysis Regulations. The fee structure is based on 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 locally initiated actions – comprehensive plan update or amendment, local government initiated rezoning.
- The fee varies according to the type of submission and the traffic generated.
- The maximum fee is \$1,000 and should be paid in the form of a check that accompanies the submission.
- The fee is made payable to 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 to the District Administrator a determination by VDOT that a submitted package failed to address deficiencies previously identified by VDOT.

The [comprehensive plan checklist](#), [rezoning package checklist](#), and [subdivision plat/site plan package checklist](#) include an item on the appropriate fees (see pages 14, 27, and 39).

REGULATIONS

24 VAC 30-155-80. Fees.

A. Locality initiated proposals.

No fee shall be charged for review of any comprehensive plan, comprehensive plan amendment, rezoning proposal, subdivision plat, site plan or plan of development initiated by a locality or other public agency.

B. 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.

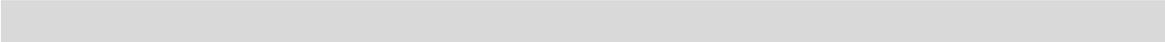
2. For initial or second review of rezoning proposals, subdivision plats, site plans, or plans of development accompanied by a traffic impact statement or supplemental traffic analysis, not initiated on behalf of the locality, there shall be a single fee for both reviews determined by the number of adjusted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

Up to 100 vehicles per peak hour - \$500

Over 100 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: TRAFFIC IMPACT ANALYSIS REGULATIONS REQUIREMENTS

Process		Threshold	Review Process*	Fee**
Comprehensive Plan and Plan Amendments		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 other public agency)
Rezoning	Residential	100 VPH on state-controlled highways, or 100 VPH on locality maintained streets AND within 3000 feet of a state maintained highway, or 200 VPD AND more than doubles current traffic volume on a state controlled highway	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 45 days if no meeting is scheduled or within 120 days otherwise NOTES: 1. 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: \$500 - 100 VPH or less \$1000 - more than 100 VPH (No fee if initiated by locality or other public agency)
	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 maintained highway		
Subdivision Plat, Site Plan, or Plan of Development	Residential	100 VPH on state-controlled highways, or 100 VPH on locality maintained streets AND within 3000 feet of a state maintained highway, or 200 VPD AND more than doubles current traffic volume on a state controlled highway	TIA and Application and Plans submitted to VDOT for review and comment. VDOT may request a meeting with the locality and applicant within 30 days Review to be completed in 30 days if no meeting is scheduled or within 90 days otherwise NOTES: 1. Not required IF assumptions and conclusions remain valid in the Rezoning TIA submitted to VDOT in accordance with Chapter 527 (must include copy of previous TIS if rezoning approval is more than 2 years old) 2. Required IF a Rezoning TIA was NOT submitted to VDOT in accordance with Chapter 527 3. Required IF conditions analyzed in Rezoning TIA submitted to VDOT in accordance with Chapter 527 have materially changed such that adverse impacts to state-controlled highways have increased	For first and Second review: \$500 - 100 VPH or less \$1000 - more than 100 VPH (No fee if initiated by locality or other public agency)
	All Other ***	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 maintained 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

24 VAC 30-155-100 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. VDOT's Guidelines for Land Development (Land Development Manual) also may be helpful in this regard.

REGULATIONS

24 VAC 30-155-100. 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.

A. Trip Generation

(effective November 2003)
Institute of Transportation Engineers
1099 14th Street NW
Suite 300 West
Washington, DC 20005

**B. Trip Generation Handbook – an
ITE Proposed Recommended Practice**

(effective 2004)
Institute of Transportation Engineers
1099 14th Street NW
Suite 300 West
Washington, DC 20005

C. Road Design Manual

(effective January 1, 2005)
Location and Design Division (VDOT)
1401 E. Broad Street
Richmond, Virginia 23219

D. Highway Capacity Manual

(effective 2000)
Transportation Research Board
500 Fifth Street NW
Washington, DC 20001

**E. 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

F. ITE Manual of Traffic Signal Design

(effective 1998)
Institute of Transportation Engineers
1099 14th Street NW
Suite 300 West
Washington, DC 20005

**G. 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



APPENDIX

Traffic Impact Analysis Forms

[All forms are available on the [VDOT website](#).]

A. PRE-SCOPE OF WORK MEETING FORM:

Information on the Project and Traffic Impact Analysis Base Assumptions

B. SCOPE OF WORK MEETING CHECKLISTS AND FORMS

1. *Checklist:* Required Elements of a Traffic Impact Analysis
2. Traffic Impact Analysis Methodology and Standard Assumptions
With Commentary
3. Additions to the Required Elements, Changes to the Methodology or Standard Assumptions, and Signature Page
4. Organization of a Traffic Impact Analysis Report

C. VDOT CHECKLIST: EVALUATION OF THE SUBMITTED TRAFFIC IMPACT ANALYSIS

D. SAMPLE OFFICIAL RESPONSE LETTERS TO A LOCALITY

1. Rezoning Application, Subdivision Plat, or Site Plan
2. Comprehensive Plan or Plan Amendment

E. LANDTRACK SUBMISSION INFORMATION AND SCREEN EXAMPLE



PRE-SCOPE OF WORK MEETING FORM

Information on the Project Traffic Impact Analysis Base Assumptions

The applicant is responsible for having this form completed and returned to VDOT and the locality no less than three (3) business days prior to the meeting. If a completed 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: Tele: E-mail:	

Project Information				
Project Name:				
Project Location: <small>(Attach regional and site specific location map)</small>				
Project Description: <small>Including type of application (rezoning, subdivision, site plan), acreage, business square ft, number of dwelling units, access location, etc. Attach additional sheet if necessary)</small>				
Locality/County:				
Proposed Use: <small>(Check all that apply; attach additional pages as necessary)</small>	Residential <input type="checkbox"/>	Commercial <input type="checkbox"/>	Mixed Use <input type="checkbox"/>	Other <input type="checkbox"/>
	Residential # of Units: _____ Commercial Use Sq Ft: _____ ' _____ ITE LU Code(s): _____ _____ _____	Mixed Use: # Res. Units: _____ ITE LU Code(s): _____ Commercial Use Sq Ft: _____ ITE LU Code(s): _____ _____ Other: _____ ITE LU Code(s): _____ Sq Ft: _____		

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					
Available Traffic Data (Historical, forecasts)					
Trip Distribution (Attach sketch)	Road Name: _____	N ___%	S ___%	E ___%	W ___%
	Road Name: _____	N ___%	S ___%	E ___%	W ___%
	Road Name: _____	N ___%	S ___%	E ___%	W ___%
	Road Name: _____	N ___%	S ___%	E ___%	W ___%
Annual Vehicle Trip Growth Rate:		Peak Period for Study (circle all that apply)	AM	PM	SAT
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		
Software Methodology	<input type="checkbox"/> Synchro <input type="checkbox"/> HCS (v.2000/+) <input type="checkbox"/> aaSIDRA <input type="checkbox"/> CORSIM <input type="checkbox"/> Other				
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)					



Traffic Impact Analysis Regulations
24 VAC 30-155

SCOPE OF WORK MEETING
CHECKLISTS AND FORMS

	Page
1. <i>Checklist: Required Elements of a Traffic Impact Analysis</i>	2
2. Traffic Impact Analysis Methodology and Standard Assumptions <i>With Commentary</i>	7
3. Additions to the Required Elements, Changes to the Methodology or Assumptions, and Signature Page	13
4. Organization of a Traffic Impact Analysis Report.....	14

SCOPE OF WORK MEETING

**CHECKLIST: REQUIRED ELEMENTS OF A TRAFFIC IMPACT ANALYSIS:
24 VAC 30-155-60.C.**

R	Item	Site Generated Peak Hour Trips			
		Less than 100	100 to 499	500 to 999	1,000 or more
	<i>Background Information</i>				
	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 10% or more of the new vehicle trips generated by the proposal are distributed - not to exceed two miles.	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
	<i>Analysis of Existing Conditions</i>				
	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

R	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 j
	Speed Study K	If requested by VDOT	If requested by VDOT	If requested by VDOT	If requested by VDOT
	Crash history near site l	If requested by VDOT	If requested by VDOT	If requested by VDOT	If requested by VDOT
	Sight distance m	If requested by VDOT	If requested by VDOT	If requested by VDOT	If requested by VDOT
	<i>Analysis of Future Conditions Without Development n</i>				
	Description of and the 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 j

R	Item	Site Generated Peak Hour Trips			
		Less than 100	100 to 499	500 to 999	1,000 or more
	<i>Trip Generation</i>				
	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
	<i>Site Traffic Distribution & Assignment</i>				
	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
	<i>Analysis of Future Conditions With Development</i>				
	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

R	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 j
	<i>Recommended Improvements</i>				
	Description and diagram of the location, nature, and extent of the 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 j
	<i>Conclusions</i>				
	Clear, concise description of the study findings.	Required	Required	Required	Required

Footnotes

j 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.

k 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.

l 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.

m 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.

n 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 double 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.

SCOPE OF WORK MEETING
TRAFFIC IMPACT ANALYSIS METHODOLOGY
AND STANDARD ASSUMPTIONS: 24 VAC 30-155-60.D
WITH COMMENTARY

A traffic impact analysis shall be prepared based upon methodology and assumptions noted below or as may be agreed upon by VDOT. Changes to the methodology and assumptions established by this regulation for developing the traffic impact analysis may be approved by VDOT based on the preparer submitting sufficient evidence to justify the change, e.g. characteristics of a project similar to what is being proposed.

VDOT can not apply 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), those requirements 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. 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 24 VAC 30-155-100), unless VDOT agrees to allow the use of alternate trip generation rates based upon local trip generation studies. Rezoning proposals shall assume the highest vehicle trip generating use allowable under the proposed zoning classification. In determining which trip generation process (equation or rate) may be used, the preparer shall follow the guidance presented in the Trip Generation Handbook – an ITE Proposed Recommended Practice (see 24 VAC 30-155-100), 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.

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

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 was approved during the rezoning of the property establishing 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.

a. Internal capture rates consider site trips “captured” within a multi-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. Multi-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. Unless otherwise approved by VDOT, the following internal capture rates may 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) Multi-use 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.

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.

NOTE: While internal capture and pass-by rates exceeding the standards set out in the regulation may be used with the submittal of 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 submitted 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.

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. 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.

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

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 of roadways shall utilize the techniques described in the Highway Capacity Manual (see 24 VAC 30-155-100). 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 – non-center 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, intersection treatments, 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 demand longer dwell time at stops or more 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 24 VAC 30-155-100). The TIS shall provide both route and segment quality of 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.

NOTE: *The traffic impact analysis shall include current and future service level analyses at build-out for existing or proposed bicycle and pedestrian accommodations. Such analysis should be based upon the 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 TIS analysis on roadways with speed limits of 45 mph or higher rather than as a permissive left turn.*

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.

- 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%. 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%. These reductions may only be taken if:
 - (1) Pedestrian facility coverage in a 2,000-foot radius of the proposal 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; and
 - (3) There are at least two of the 10 major land use classifications, as defined in ITE Trip Generation (see 24 VAC 30-155-100), 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 proposal 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; and
 - (3) There are at least two of the 10 major land use classifications, as defined in ITE Trip Generation (see 24 VAC 30-155-100), within the 2,000-foot radius.

NOTE: *In the event that site-specific (non-ITE) 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. See page 56 in the “Administrative Guidelines” for additional discussion on this item.*

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.

NOTE: In the event that site-specific (non-ITE) 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. See page 56 in the “Administrative Guidelines” for additional information on this item.

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 24 VAC 30-155-100) or ITE Manual of Traffic Signal Design as determined by VDOT.

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 TIS for improvements to transportation facilities shall be in accordance with the geometric standards contained within the Road Design Manual (see 24 VAC 30-155-100).

SCOPE OF WORK MEETING

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:

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 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; 24 VAC 30-155-60.C. Required Elements table..*

VDOT CHECKLIST

EVALUATION of the SUBMITTED TRAFFIC IMPACT ANALYSIS

R	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
	<i>Introduction and Summary</i>
	Purpose of report and study objectives
	Executive Summary: Site location and study area; description of the proposed development; conclusions; recommendations.
	<i>Background Information</i>
	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.
	<i>Analysis of Existing Conditions</i>
	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.

R	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
	<i>Analysis of Future Conditions Without Development</i>
	Description of and the 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.
	<i>Trip Generation</i>
	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.
	<i>Site Traffic Distribution & Assignment</i>
	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.
	<i>Analysis of Future Conditions With Development</i>
	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.

R	ITEM PROVIDED OR NOT APPLICABLE (NA)
	<i>Recommended Improvements</i>
	Description and diagram of the location, nature, and extent of the 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.
	<i>Conclusions</i>
	Clear, concise description of the study findings.

NOTES: _____

SIGNED: _____
 VDOT Representative

DATE: _____

PRINT NAME: _____
 VDOT Representative

**SAMPLE OFFICIAL RESPONSE LETTER TO A LOCALITY
Rezoning Application, Subdivision Plat, or Site Plan**

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, 24 VAC 30-155, a traffic impact analysis was prepared by _____ on the rezoning application [on the subdivision plat or site plan] 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 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 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 report and answer any questions. I also would appreciate the opportunity to present these recommendations at any public meeting on the above referenced project.

Finally, I ask that you arrange to have VDOT’s summary of the key findings of the traffic analysis included in the official public records (meeting minutes, staff report) on the proposed project and to have this letter, our report, and the traffic impact analysis placed in the case file for the [rezoning, subdivision plat, or site plan] application. VDOT will make these documents available to the general public through various means such as posting them on VDOT’s website.

Sincerely,

cc: Director of Planning
Land Development Applicant

SAMPLE OFFICIAL RESPONSE 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, 24 VAC 30-155, your proposed comprehensive plan [comprehensive plan amendment] was submitted to the Virginia Department of Transportation 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 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 is 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 the findings of VDOT's evaluation 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 the summary of VDOT's key findings from our report included in the official public records (meeting minutes, staff report) and to have both this letter and VDOT's report 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 VDOT's website.

Sincerely,

cc: Director of Planning


Submission Screen

Section	Field Name	Information Needed
1. Submission Details	Project Id	Nothing to enter. LandTrack generates a unique number for each review.
	Project Name <i>Required field</i>	Add the name given to the review request by VDOT. The name does not have to be the same as the name assigned by the locality, but, for tracking purposes, it should be easily recognized by submitters.
	District <i>Required field</i>	Select district from drop down list.
	Locality Contact	Add name of locality submission contact.
	Submission #	Nothing to enter. LandTrack autofills this field to indicate first, second, third, etc. submission.
	Locality Project Id	Fill in if locality has assigned a project id number.
	Jurisdiction <i>Required field</i>	Select from a drop down list the jurisdiction where the review is being conducted.
	TIA Preparer	List who authored the TIA document.
2. Location	Route No.	Must fill in this field. If no route number, enter 00.
	Street Name	Must fill in this field. If no street name, enter No Street Name.
	Principal Route	This is the main road for the land being reviewed. A principal route must be indicated, and there can only be one principal route.
	ADT <i>Required field for Principal Route (only)</i>	Required field for principal route. Include the most recently published ADT for this route.
3. Site Details	Submission Type <i>Required field</i>	From this list, select all that apply: TIA review for comprehensive plan, zoning, site plan, and subdivision, or letter confirming previously approved TIA.
	Facility Type <i>Required field</i>	Select from the drop down box the type of facility being built. Choices include commercial, residential, and mixed use types of construction as well as local policy changes.
	Residential Units #	Add number of residential units. (Data is <i>required</i> for at least one of these three fields: residential units, acreage, and commercial sq. ft. Complete the field that best corresponds to the submission type selected and reflects the number used to calculate trip generation.)
	VPH (increase) <i>Required field</i>	Enter the number of additional vehicles per hour generated by the site.
	Principal Parcel Id <i>Required field</i>	Indicate the locality tax map designation.
	527 Submission	Select yes or no to indicate whether this qualifies as a review under the 527 system.
	Acreage #	Enter the acreage for the size of the development (not the size of the parcel). <i>See note for residential units.</i>
	Commercial Sq. Ft. #	Enter the gross floor area. <i>See note for residential units.</i>
VPD (increase) <i>Required field</i>	Enter the number of additional vehicles per day generated by the site.	

Section	Field Name	Information Needed
4. Payment	Fee Waived <i>Required field</i>	Select yes or no. If yes, a reason must be included.
	Payment Received <i>Required field</i>	Select yes or no.
	Check Number	Required for a check or money order. Indicate the number on the check or money order.
	Payment Amount	Nothing to enter. LandTrack automatically generates the payment due depending on the VPH increase value in Section 3: Site Details. VPH value of 100 or less requires a payment of \$500.00. VPH value over 100 requires a payment of \$1,000.00.
	Fee Waived Reason	Required if a fee is waived. Complete the textbox as appropriate. The District Administrator has appeal approval.
	Payment Type	Select from the drop down box: check, cash, or money order.
	Pymt. Acct. Holder	Enter the name on the check or money order.
5. Work Tracking	VDOT Contact	Indicate the VDOT staff person responsible for this review.
	Scope Meeting Held	Select yes or no.
	Locality Received Dt	Click on the calendar icon to select the date on which the county received the request from the developer.
	VDOT Received Dt <i>Required field</i>	Click on the calendar icon to indicate the date on which VDOT received the submission.
	Completed Dt	Click on the calendar icon for the date the review needs to be sent to the submitter / locality.
	Contract Reviewer	Enter the name of the on-call contractor assigned to complete the review.
	Review Meeting Requested	Select yes if a locality has requested a meeting, select no if not.
	Locality Due Dt	Click on the calendar icon to indicate the deadline requested by the city/county.
	VDOT Due Dt	Nothing to enter. This date is automatically generated by LandTrack and indicates when the review should be sent back to the locality / submitter.
	Status <i>Required field</i>	Select from drop down box the appropriate status of the entire request.
6. Official VDOT Response	Add Attachment	To attach a document, click the Browse button and select the document from an appropriate library. Once the document is selected, click the Upload button . The document will then be added to the tabular list.
	Description	Describe the attachment here (e-mail, letter, final comments, etc.).
7. Reviewer Tracking	Reviewer	Choose the appropriate reviewer from the drop down box. Contact your LandTrack administrator if other reviewers should be added to this field.
	Working Title	Nothing to enter. LandTrack autofills this field according to the reviewer selected.
	Hours	Enter the number of hours the reviewer has spent on this submission. Multiple entries for each reviewer are acceptable. Do not edit hours already recorded.
8. Reviewer Notes	Reviewer	Choose the appropriate reviewer from the drop down box. Contact your LandTrack administrator if other reviewers should be added to this field.
	Note	Add notes that are appropriate for this submission.
9. History	 Track automatically catalogs submission edits and additions.	