*Virginia's Region 2000 Local Government Council*

# CENTRAL VIRGINIA REGIONAL ACTION PLAN FOR COORDINATED LAND USE AND TRANSPORTATION PLANNING

*DEVELOPED BY*

VIRGINIA'S REGION 2000 LOCAL GOVERNMENT COUNCIL

*PREPARED IN COOPERATION WITH*

THE U.S. DEPARTMENT OF TRANSPORTATION –
FEDERAL HIGHWAY ADMINISTRATION, AND
THE VIRGINIA DEPARTMENT OF TRANSPORTATION

**JUNE 2007**

**Virginia's Region 2000 Local Government Council**

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**June 2007**

## Table of Contents

## List of Exhibits

## Executive Summary

The *Central Virginia Regional Action Plan for Coordinated Land Use and Transportation Planning* (the Action Plan) is a comprehensive plan for integrating land use and transportation decisions in Central Virginia. This study is being performed in response to one of the five key strategies identified in the *Central Virginia Long-Range Transportation Plan – Year 2030*: to increase the coordination between land use and transportation both within individual jurisdictions in the region and across the region as a whole. In addition, the Central Virginia Metropolitan Planning Organization has expressed a strong interest in proactively exploring the connections between land use and transportation planning and in developing an approach that can be implemented starting in the short term.

The goal of the recommendations in the Action Plan is to improve the coordination between land use and transportation planning in the region in order to promote a high quality of life, continued economic development, and an efficient and safe transportation system. This goal touches on both land use (through quality of life and economic development) and transportation, but it is important to note that the emphasis is on the coordination between the two, or where they can and/or should overlap

While the study seeks to set forth a comprehensive program of actions to better integrate land use and transportation planning, achieving this goal will be an ongoing process. An important dialog was begun with the first regional planning forum that was held in May 2006 as part of this study, and the dialog has continued throughout the study. This report documents the recommendations of the study consultant. The continued evolution of these recommendations and their implementation will come from continuation of the important transportation/land use dialog within the Central Virginia community.

Over the course of the study, input from the general public and stakeholders helped the study team identify key challenges and concerns that the region is facing with respect to transportation and land use. The key challenges that were identified as part of the study process are summarized below.

**Challenge #1:** Address the impacts of the significant amount of new by-right development that is taking place on properties that feed onto County secondary roads and City local roads. Because much of this development is by-right (i.e., conforms to zoning that is currently in place for the property), the typical local government approvals that would be required for rezoning cannot be used as a tool for influencing the size, scope, and traffic impacts of the development. This removes options for developer participation in transportation improvements that are not either on or immediately adjacent to the development site. This by-right development is putting increasing pressure on secondary and local roads that are not configured to safely carry increased traffic loads.

**Challenge #2:** Preserve open space (rural areas, productive farmland, forests, etc.) in order to preserve the region's high quality of life. This will require enhanced land use management by localities in the region.

**Challenge #3:** Enhance land use planning to better address the following: increasing the concentration of development within the region through clustering, steering development away from areas that should be preserved for open space, increasing the amount of mixed use development in order to reduce overall transportation requirements, retaining the region's relatively compact urbanized area and development patterns, and developing activity nodes and neighborhood/village centers.

**Challenge #4:** Preserve and enhance the safety and functionality of major regional transportation corridors through access management, better land use controls, and consistent corridor treatments throughout the region. Increase the ability of transportation corridors to support other modes of travel. Reduce pressures for strip development, and increase the extent to which corridors reflect the context of their surrounding land uses.

**Challenge #5:** Enhance the availability and viability of travel modes other than the single-occupant motor vehicle in the region. Seek to expand transit service and develop land use patterns that support such service, and increase the attractiveness and viability of travel by walking and bicycling both for recreation and destination-oriented travel.

**Challenge #6:** Define the roles and responsibilities of the private sector in transportation as well as land use planning. Increase guidance for the private sector on transportation-efficient development, and increase the public awareness of the cost of services (particularly the long-term transportation costs) to support development in remote areas. This challenge also addresses the goals of seeking increased public/private cooperation and partnerships.

**Challenge #7:** Increase regional cooperation and consistency at a number of levels, including:

- Consistent requirements and procedures when working with the development community
- Development of a regional vision for urban form and the location of major regional facilities such as industrial parks and commercial centers
- Regional cooperation on a wide range of transportation issues, including roads, transit expansion, and air travel.
- Long-term goals for regional revenue sharing.

**Challenge #8:** Continue to emphasize economic development within the region, including an understanding of the importance of transportation in attracting and sustaining economic development, and the substantial benefits of marketing the region as a unified entity.

**Challenge #9:** Clarify the roles of local governments and the state in terms of land use and transportation planning, and ensure that these roles evolve in a way that supports better and more unified planning. Increase the availability of land use planning tools for local governments in order to better match the transportation system's capacity with land use growth.

Fifteen action recommendations were developed over the course of the study to address the nine challenges described above. The action recommendations were organized into five broad initiatives, and are summarized below:

**Initiative #1 – More closely integrate regional long-range transportation planning and local comprehensive land use planning.**

1.A: Tie land use and transportation planning together through the establishment and adoption of regional transportation overlays that highlight areas and land use features that have particular transportation implications such as density, clustering, mix of uses, etc.

1.B: Establish regional policies on the roles of the public and private sector with respect to transportation in order to provide a regionally consistent foundation for efforts such as public/private partnerships and public/private financial participation in transportation improvements through tax incentives, proffers, and other mechanisms.

1.C: Incorporate additional levels of detail in transportation planning concepts in order to support improved land use and site planning (including reservation of rights-of-way) by both the public and private sectors.

1.D: Apply consistent access management standards to all major transportation corridors in the region.

**Initiative #2 – Increase the region's policy and regulatory emphasis on the adequacy of transportation facilities with respect to new development.**

2.A: Provide increased information to local decision-makers on the transportation impacts of new development through the adoption of regionally consistent Transportation Impact and Conformity Reports (TICR). This process will mirror the recently adopted Chapter 527 requirements of the Virginia Department of Transportation.

2.B: Implement additional checklist-level reviews in the TICR process for land development that falls within the region's transportation overlays (described in Action Recommendation 1.A above). This will provide decision-makers with information on site features that have the potential to reduce overall travel (i.e., mixed use, support for transit and/or rideshare, etc.).

**Initiative #3 – Adjust the roles and responsibilities of local governments and the state with respect to local/secondary roads and primary roads.**

3.A: Increase local control of the planning, design, and construction of local and secondary roads (funding would continue to come from the state).

3.B: Increase the role of the state in managing primary transportation corridors through coordinated efforts with local governments to match land use features in these corridors (including zoning, site plan requirements, etc.) to transportation features such as access point designation and design.

**Initiative #4 – Increase the state's participation in comprehensive planning through the provision of expertise and support to localities on land use, economic development, and transportation planning issues.**

4.A: Develop a statewide policy-level comprehensive plan that includes support for enhanced integration between land use and transportation planning.
4.B: Provide expertise and support to local governments on land use planning, integrating land use plans with transportation plans, promoting economic development in transportation-efficient areas, and coordinating with VDOT and other agencies in efforts such as the advance purchase or rights-of-way for major transportation projects.
4.C: Provide support from the state level for the development and implementation (through enabling legislation) of additional planning tools for local governments. Such tools could include adequate public facilities ordinances, concurrency laws, enhanced zoning powers, as well as measures to reduce, minimize and/or streamline private sector regulatory burdens.
4.D: Ensure that the land use and economic development implications of transportation projects are included in all presentations to the Virginia General Assembly.

**Initiative #5 – Expand the region's roles and responsibilities in transportation.**

5.A: Regional participation, where appropriate and requested, in reviews of the Transportation Impact and Conformity Reports.
5.B: Increased transportation planning support (transportation modeling and forecasting, mapping, and analysis) to local governments in order to assist in defining and quantifying the transportation implications of land development, zoning patterns, etc.
5.C: Continue to advocate and seek funding for implementation of the region's Blueway and Greenway plan.
5.D: Ultimately seek to increase the unity and economic strength of the region through the establishment of a regional transportation authority.

Exhibit ES-1 highlights how the action recommendations provide solutions to the region's key transportation/land use challenges. In most cases, solutions to the challenges are provided by a package that includes multiple action recommendations.

Exhibit ES-1
**Summary of Regional Challenges and Action Recommendations**

| Regional Transportation/ Land Use Planning Challenge | Regional Action Plan Recommendation that Addresses the Transportation/Land Use Challenge |
|---|---|
| **Challenge #1**<br>New by-right development adding traffic to strained secondary and local roads | **1.A** Regional overlays for rural preservation would support changes in zoning to reduce development in areas not served by primary roads or otherwise planned for such development.<br>**1.B** Regional policies on public and private roles in transportation would support increased participation by the private sector in improving secondary roads.<br>**2.A** Transportation impact/conformity reports would require that larger developments quantify transportation impacts in order to better inform decision-making by local authorities.<br>**3.A** Increased local responsibility and control of secondary roads would enhance local support for better aligning by-right zoning with available |

Exhibit ES-1

**Summary of Regional Challenges and Action Recommendations**

| Regional Transportation/ Land Use Planning Challenge | Regional Action Plan Recommendation that Addresses the Transportation/Land Use Challenge |
|---|---|
| | transportation capacity.<br>**4.B, 4.C** A state planning office would support localities by assisting in integrating land use and transportation by guiding economic development to transportation-efficient locations. This office would also provide a voice for supporting legislation at the state level to increase local government powers with respect to requiring adequate public facilities for new development. |
| **Challenge #2**<br>Preserve open space | **1.A** Regional overlays for rural preservation support not investing in capacity improvements within rural preservation areas, or ensuring that new capacity does not incorporate the uncontrolled access that can create pressures for additional development. The regional overlays also support longer-term changes in zoning to reduce development in areas not served by primary roads or otherwise planned for such development. It is important to note that the proposed regional overlays represent what is currently included in local jurisdiction Comprehensive Plans.<br>**2.A** Transportation impact/conformity reports would require that larger developments quantify transportation impacts in order to better inform decision-making by local authorities.<br>**3.A** Increased local responsibility and control of secondary roads would enhance local support for better aligning by-right zoning with available transportation capacity.<br>**5.B** Regional mapping of rural preservation areas provides the basis for a common regional vision for the location of growth areas and preservation areas. |
| **Challenge #3**<br>Increased land use density, clustering, and mixed uses | **1.A** Regional transit-supportive and neighborhood/village center overlays encourage the development of higher density, mixed, and clustered land uses in areas supported by existing and proposed transportation facilities.<br>**1.C** Increased detail in developing transportation planning concepts in high priority corridors will assist both land use planners and property owners/developers in detailed planning efforts (such as building location decisions and other site plan details such as pedestrian facilities, parking, etc.).<br>**2.B** The requirements of the transportation impact/conformity process will provide local decision-makers with the information to encourage and/or require site plans that support walking, bicycling and transit, as appropriate.<br>**3.B** An increased state role in managing major transportation corridors as well as land uses within these corridors (through cooperative planning with local governments) will assist in developing land use patterns that are more clustered and minimize the extent of strip development. |
| **Challenge #4**<br>Preserve and enhance the safety and functionality of major regional transportation corridors | **1.A** Tie-ins between land use and transportation planning provided by the regional transit supportive overlays (that follow the region's key primary roads) will support clustered development and discourage strip development that results in high numbers of new access points.<br>**2.B** The transportation impact/conformity process will provide local |

Exhibit ES-1

**Summary of Regional Challenges and Action Recommendations**

| Regional Transportation/ Land Use Planning Challenge | Regional Action Plan Recommendation that Addresses the Transportation/Land Use Challenge |
|---|---|
| | decision-makers and VDOT with the information to encourage and/or require site plans that support walking, bicycling and transit, as appropriate.<br>**3.B** The highly integrated transportation and land use plans that VDOT and local governments would develop as part of this initiative would guide both agencies in cooperative efforts to manage access as well as land development that can adversely affect the roadway's safety and functionality. |
| **Challenge #5**<br>Enhance the availability and viability of travel modes other than the private automobile | **1.A** Regional transit-supportive and neighborhood/village center overlays will support development densities, clustering, land use mixes, and site plan features that support travel by walking, bicycling, and various forms of transit.<br>**2.B** The transportation impact/conformity process will provide local decision-makers and VDOT with the information to encourage and/or require site plans that support walking, bicycling, and transit as appropriate.<br>**3.B** The highly integrated transportation and land use plans that VDOT and local governments would develop as part of this initiative would incorporate features to support long-term transit service in major regional corridors, as well as accessibility by walking and bicycling, where appropriate.<br>**5.C** The region's Greenway and Blueway Plan serves as a guiding document for the enhancement of trails for walking and bicycling. |
| **Challenge #6**<br>Define public and private roles in transportation | **1.B** A regionally consistent policy stating that the private sector has a partnership role with the public sector in both land use and transportation will serve as a policy foundation for follow-on procedures and/or regulations that individual jurisdictions could adopt.<br>**2.A** The transportation impact/conformity process highlights for both the private sector as well as local governments the impacts that new development has and the potential costs of providing transportation improvements that mitigate those impacts. This additional information will assist in enlightening transportation and land use discussions within local governments and potentially lead to the development of appropriate procedures, cost sharing, etc. in order to ensure that the transportation system can adequately and safely accommodate new development.<br>**4.B, 4.C** A state planning office can support local governments in assessing the impacts of new development, including major economic development projects, assist in providing analysis, and provide support for increased local powers with respect to local land use regulations. |
| **Challenge #7**<br>Increase regional cooperation in land use and transportation planning, as well as economic development | **1.A** The regional transportation overlays reflect a regional vision of land use patterns in conjunction with transportation features. Updates to the overlays would be performed at the regional level to reflect changes in local comprehensive plans as well as the regular five-year update to the region's long-range transportation plan.<br>**3.A** The potential costs of increased local responsibility for secondary |

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**Summary of Regional Challenges and Action Recommendations**

| Regional Transportation/ Land Use Planning Challenge | Regional Action Plan Recommendation that Addresses the Transportation/Land Use Challenge |
|---|---|
| | and local roads may be shared and minimized through cooperative regional efforts that mirror current regional agreements related to solid waste and public safety.<br>**5.A** At the discretion of localities (and with funding provided by the localities), the Local Government Council could assist in reviewing the proposed Transportation Impact/Conformity Reports.<br>**5.B** This action recommendation includes increased support for transportation planning through enhanced transportation and land use databases, as well as mid-term recommendations for a regional transportation authority. |
| **Challenge #8**<br>Emphasize continued economic development within the region | **4.B** This action recommendation includes state technical and policy support for local governments related to both land use and transportation planning, in support of economic development.<br>**5.D** Long-term goals for a regional transportation authority will further integrate the region, providing benefits to both the region itself and to potential new employers seeking to locate in the region. |
| **Challenge #9**<br>Clarify the roles of local governments and the state in terms of land use and transportation planning | **2.A** This action recommendation incorporates VDOT's recently adopted Chapter 527 traffic impact review process, which requires that VDOT provides local governments with assessments of the impacts of new development (over certain size thresholds). These assessments are intended to better inform the local land use decision-making process.<br>**3.A, 3.B** This action recommendation seeks to combine responsibilities for both the transportation and land use planning to either the local or state government based on the functionality of roadways. Localities would take increased responsibility for the local roads that carry primarily local traffic, while the state's responsibility would increase for primary roads that serve more regional and statewide travel needs.<br>**4.B** The state planning office function described in this action recommendation would provide support to local governments in enhancing their capabilities and expertise with respect to land use planning. |

# Chapter 1: Study Background

## 1.1 Introduction

The *Central Virginia Regional Action Plan for Coordinated Land Use and Transportation Planning* (the Action Plan) is a comprehensive plan for integrating land use and transportation decisions in Central Virginia. The product of a 14-month study that incorporated public and stakeholder input at public meetings and regional planning forums as well as extensive research and analysis, the Action Plan identifies concrete steps that can be taken to make the region's transportation system more efficient and safer, offer more mobility choices; and to promote land development patterns that can better serve future needs, be more efficient, and promote the local economy and quality of life. This study was performed by Virginia's Region 2000 Local Government Council, in association with the following agencies:

- City of Lynchburg
- Amherst County
- Bedford County
- Campbell County
- Town of Amherst
- Central Virginia Metropolitan Planning Organization (MPO)
- Virginia Department of Transportation (VDOT)
- Virginia Department of Rail and Public Transportation (VDRPT)
- Federal Highway Administration
- Federal Transit Administration
- Greater Lynchburg Transit Company

At its January 2005 meeting, the Central Virginia Metropolitan Planning Organization (MPO) expressed a strong interest in proactively exploring the connections between land use and transportation planning and in developing an approach that could be implemented starting in the short term. This study, performed with a grant from the Commonwealth of Virginia, is the result of that initial interest by the MPO. The intent of the study was to identify and develop implementation strategies that change the "business-as-usual" approach that Central Virginia has to land use and transportation planning, and to assess a wide range of possible approaches to guide the development of regional land use and transportation infrastructure.

The study is set against a backdrop of substantial growth within the Central Virginia region: recent newspaper headlines describe major housing developments being built on secondary roads that are ill-equipped to handle increased traffic, continued limitations in transportation improvement funds, and substantial public sentiment in support of better growth management and for widening the range of transportation options in Central Virginia beyond the single occupant car. Local opinion is mirrored at the state level as well, as evident by the substantial public and political interest throughout the Commonwealth on better integrating land use and transportation planning. This interest

is also reflected in pending legislation in the General Assembly as well as initiatives from the Governor's office.

## 1.2 Study Area

The area covered in this study includes the City of Lynchburg, the Town of Amherst, and the Counties of Amherst, Bedford and Campbell. The urbanized portion of the Central Virginia region, encompassed by the Central Virginia Metropolitan Planning Organization (MPO), is a subset of the Action Plan study area.

## 1.3 Study Goal

The goal for this study and of the Action Plan's recommendations is to improve the coordination between land use and transportation planning in the region in order to promote a high quality of life, continued economic development, and an efficient and safe transportation system. This goal was identified by participants in regional planning forums that were held as part of the study, and was refined by the study's steering committee. Obviously, this goal touches on both land use (through quality of life and economic development) and transportation, but it is important to note that the emphasis is on the coordination between the two, or where they can and/or should overlap. There are many schools of thought in land use planning that advocate various development patterns, with proponents and opponents of each. Similarly, there are transportation professionals who support one type of transportation over another. To the extent possible, however, this study sought to avoid particular theories and catch-phrases like "smart growth" and focuses on the interaction between the two disciplines, seeking efficiencies and synergies across the two.

## 1.4 Study Process

The study consisted of eight phases ranging from brainstorming to developing specific plans for individual jurisdictions, to testing concepts at the individual corridor level. Specific elements of the study included:

- Brainstorming and research included an extensive literature review, as well as public and stakeholder involvement at two regional planning forums (held in May and September 2006).
- Analysis of concepts included the listing, testing, and ranking of recommendations and assessing overall implementation issues.
- The development of a regional action plan in concert with local planning staff and local jurisdiction planning commissions. This process included identifying specific locality action items, recommending transportation components for local jurisdiction comprehensive plans, and identifying recommendations related to major regional transportation corridors.

## 1.5 Report Organization

This report is organized as follows: Chapter 2 summarizes existing conditions within the region in terms of transportation, demographics, and land use; and highlights some of current trends. Chapter 3 describes the key land use and transportation challenges that the region is facing, as identified by various stakeholders and the general public at regional planning forums. The subject of integrating land use and transportation is complex, and Chapter 3 also touches on the challenges that are being faced by the planning profession as a whole in better integrating land use and transportation planning (a full discussion of some of these issues is included in Appendix A). Detailed descriptions of the study's action recommendations are included in Chapter 4, with discussion on specific regional transportation corridors in Chapter 5. Chapter 6 includes a discussion of implementing the action recommendations, including proposed local government actions and follow-on activities by a regional Working Group.

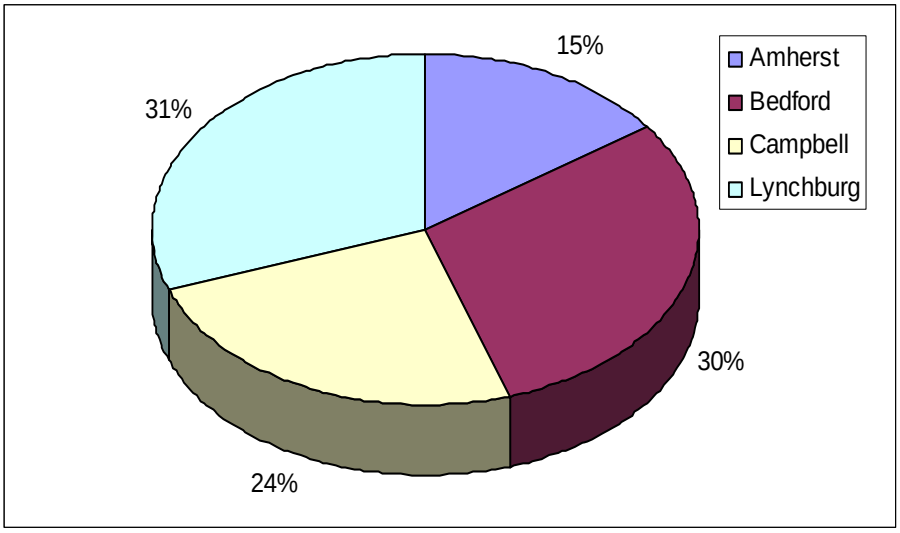
# Chapter 2: Existing Conditions and Trends

Where people currently live and work, and how they get around in Central Virginia, provided the starting point for the study. The land use patterns and the transportation system reflect the history of the region's development, starting with relatively dense settlement near the original Lynch's ferry on the James River that was at a more walkable scale, to a range of later settlement patterns which included streetcar suburbs and car-oriented shopping centers and residential subdivisions. In identifying proposed action recommendations, the study also considered not only what is on the ground today, but also current trends – such as accelerating growth, increasingly large subdivisions, aging population, and significant limitations in transportation funding.

## 2.1 Study Area Geography and Population

The area encompassed by this study consists of the City of Lynchburg, the Town of Amherst, and the Counties of Amherst, Bedford, and Campbell. The area covers just under 1,800 square miles and was home in 2005 to an estimated 218,000 persons[1]. As shown in Exhibit 1, over 60 percent of the study area's population is split relatively evenly between the City of Lynchburg and Bedford County, while 24 percent is in Campbell County and 15 percent is in Amherst County. Since 1960, the study area population has increased by 67,000 persons, representing an overall growth rate of just over 1 percent per year. This annual growth rate also occurred during the 1990's although, as shown in Exhibit 2, a disproportionate share of the region's growth during the decade occurred in Bedford County which grew by over 32 percent. Since the 2000 Census, estimates by the US Census Bureau continue to indicate steady growth in the range of 1 percent annually in each of the study area's jurisdictions.

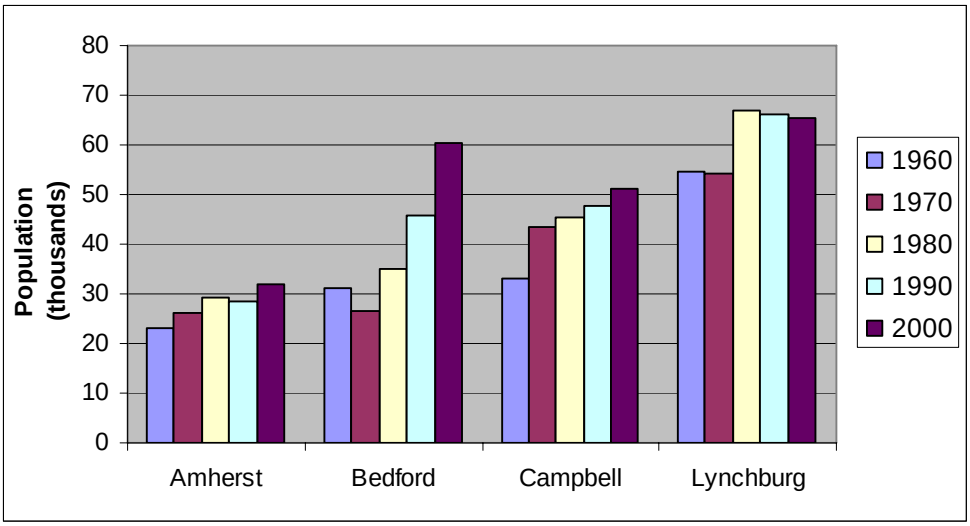
Exhibit 1
**Population Distribution in the Study Area**




[1] The study area is a subset of the geographic area covered by Region 2000, which also includes the Appomattox County.

Exhibit 2

**Population Growth in the Study Area**

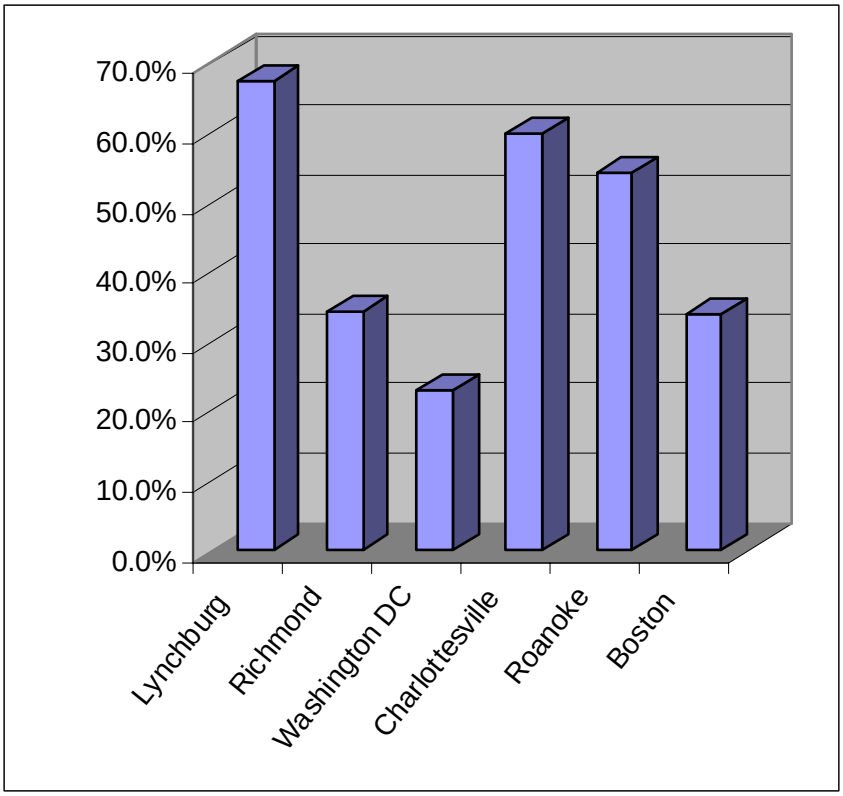



Moderate but steady growth is one of several demographic characteristics that serve to not only describe the study area but also to highlight some of the opportunities and challenges that the region faces. Continued population and employment growth in the region has resulted in increased congestion, a trend that is expected to continue. In addition, local planners report that the size of residential developments is continuing to grow, and many of these developments are being developed or proposed to be developed along often substandard secondary roads. The Central Virginia region encompasses both a medium-sized city as well as rural areas, and the description below from a recent Federal Highway Administration document reflecting national congestion trends is certainly applicable:

> "Based on current trends, a medium-sized city should expect its congestion to be as bad as, or worse than, that currently experienced by a large city. The rate of congestion growth has been greater in rural than in urban areas, portending increased congestion in communities of all sizes." *Congestion Pricing: A Primer* (Federal Highway Administration Office of Transportation Management, December 2006).

The size and development patterns in the study area do present one area of opportunity in terms of supporting development patterns that are more compact and transportation-efficient. Despite being ranked 361 out of the 396 urbanized areas in the United States in terms of population density, the region ranks in the top 50 percent in terms of the percentage of population that is located within the "central place", or the population center of the region. With 67 percent of the population within the central place, the Central Virginia/Lynchburg urbanized area has significantly less existing sprawl than many other communities in America. Exhibit 3 illustrates this statistic in comparison to several other cities in Virginia and on the east coast.

Exhibit 3
**Percent of Population Within "Central Place"**




## 2.2 Regional Travel Patterns

Travel patterns in many urbanized areas in the United States, particularly for work trips, have become increasingly dispersed. Traditional suburb to center core commuting patterns have been replaced by a geographically diffuse mix of suburb to suburb, suburb to core, core to suburb (reverse commuting) travel patterns that are difficult to accommodate with traditional transit services. Within the Central Virginia study area, 60 percent of major commuter flows are centered on the City of Lynchburg (see Exhibit 4). Similar data on flows for other trip types, including shopping and recreational trips, is not available, but substantial portions of the region's retail and commercial land uses are within or adjacent to the City. These somewhat centralized travel patterns also provide both a potential opportunity and a transportation/travel demand pattern upon which to build.

Exhibit 4

**Regional Commuter Flows**

| Trip Endpoints | | Daily Commuter Trips |
|---|---|---|
| Lynchburg | Lynchburg * | 22,732 |
| Campbell | Lynchburg | 13,391 |
| Campbell | Campbell * | 9,384 |
| Bedford | Lynchburg | 8,991 |
| Amherst | Lynchburg | 7,020 |
| Bedford | Bedford * | 6,749 |
| Amherst | Amherst * | 6,688 |
| Bedford | Campbell | 2,580 |
| Amherst | Campbell | 1,620 |
| Amherst | Bedford | 675 |

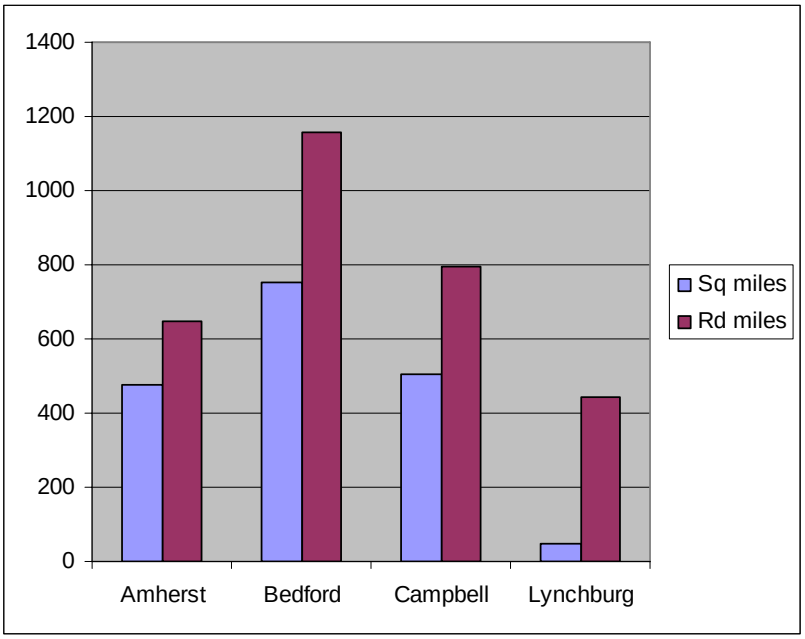
Source: US Census, 2000 Journey to Work data
* - These represent travel that takes place entirely within the jurisdiction shown.

## 2.3 Transportation System

The study area contains approximately 3,040 roadway miles, of which 69 percent are county secondary roads and an additional 12 percent are urban streets in the City of Lynchburg. The remaining 19 percent of study area road miles are primary roads. As shown in Exhibit 5, Bedford County is not only the largest jurisdiction in terms of land area, but also has the largest number of roadway miles. Each of the counties in the region has about 1.5 roadway miles per square mile. The City of Lynchburg has approximately

Exhibit 5

**Land Area and Roadway Miles by Jurisdiction**



nine roadway miles per square mile, reflecting its urban character. In a relative sense, however, even Lynchburg has a relatively low roadway density: as a point of comparison, Washington DC has about twice as many roadway miles per square mile of area.

Transit service in the study area is primarily provided by the Greater Lynchburg Transit Company and is largely focused on the City of Lynchburg, with some service in southern Amherst County (in Madison Heights) and some incidental mileage in Bedford and Campbell Counties. Within the City, some level of transit service is provided on 82 miles of roadway – the service covers about 19 percent of the total roadway miles in the City. Again for comparison purposes, the percent of roadway miles with transit service in Washington DC is 26 percent.

## 2.4 Jobs-Housing Balance

Jobs-housing balance is a measure of the separation in terms of distance between employment and residential areas. An imbalance in jobs-housing suggests that large numbers of people within a region are commuting relatively long distances to get to work. In terms of integrating land use and transportation, a good balance is desirable. Exhibits 6 and 7 illustrate areas where the number of households exceeds the number of jobs (Exhibit 6) and where the number of jobs exceeds the number of households (Exhibit 7). While Exhibit 6 highlights some predominantly residential areas in the counties surrounding Lynchburg, the checkerboard pattern in both maps suggests a generally good geographic jobs-housing balance.

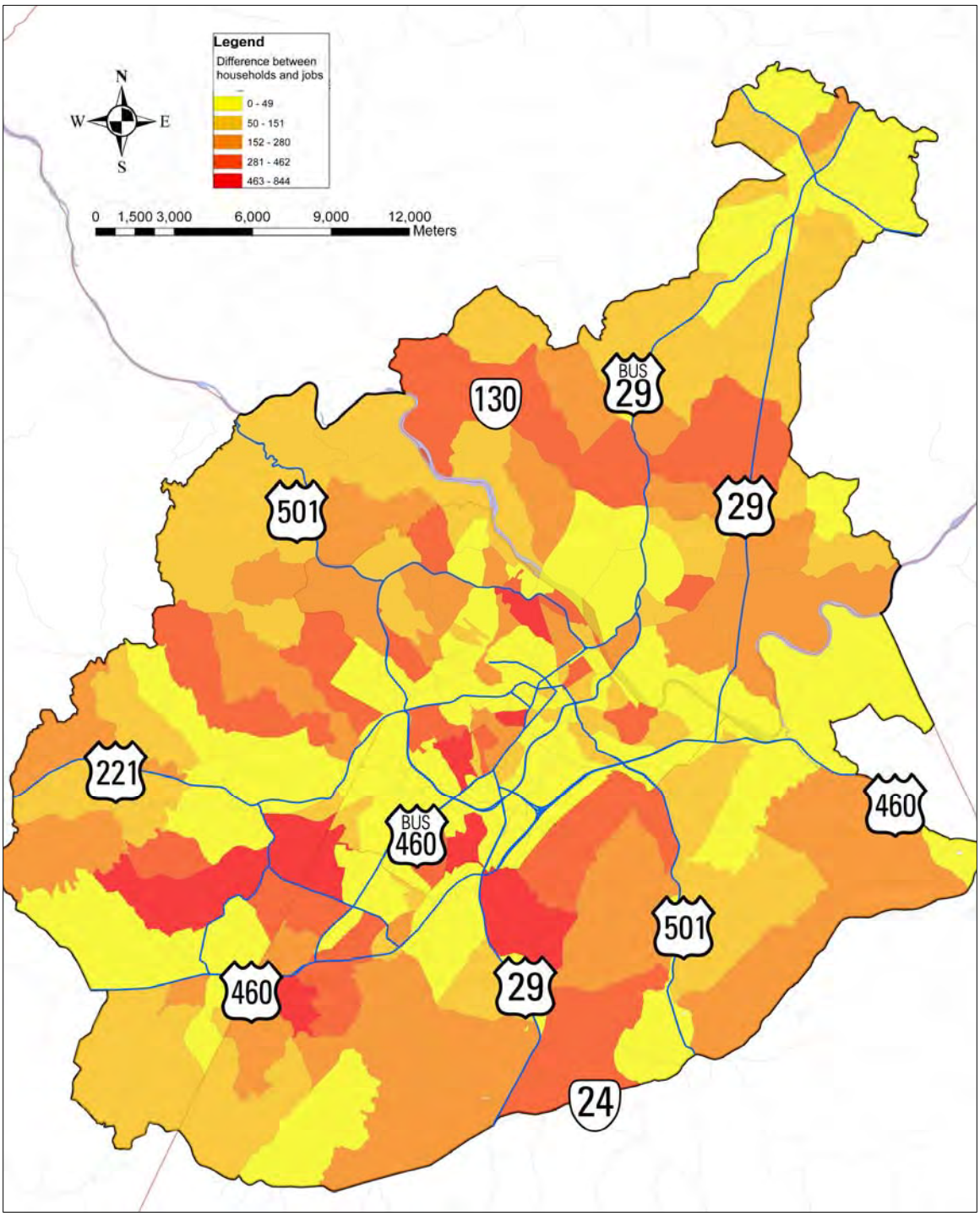
## 2.5 Summary

To a large extent, the Central Virginia region successfully integrates land use and transportation. Most of the existing transportation infrastructure is located in areas of higher population and employment densities, and the area has not yet experienced the sprawling growth that characterizes many, if not most, of the larger metropolitan areas in the country. Some of the current regional trends in both land use growth and transportation, however, highlight the need for better integration of these two planning disciplines. The current match between land use and transportation is a function of the history of the region, and it is likely that increasing growth pressures will bring to light the limited coordination between land use and transportation planning that has brought both sprawl types of growth and high levels of congestion to other areas.

The next chapter describes the challenges that study participants identified over the course of several regional planning forums. In general, both the analysis of existing conditions and the input received at the study's regional planning forums highlight the fact that many of the land use and transportation aspects of the region work well today, but that measures are needed to ensure that the region continues to "work" so that the high quality of life and continued economic vitality are maintained and enhanced.

Exhibit 6

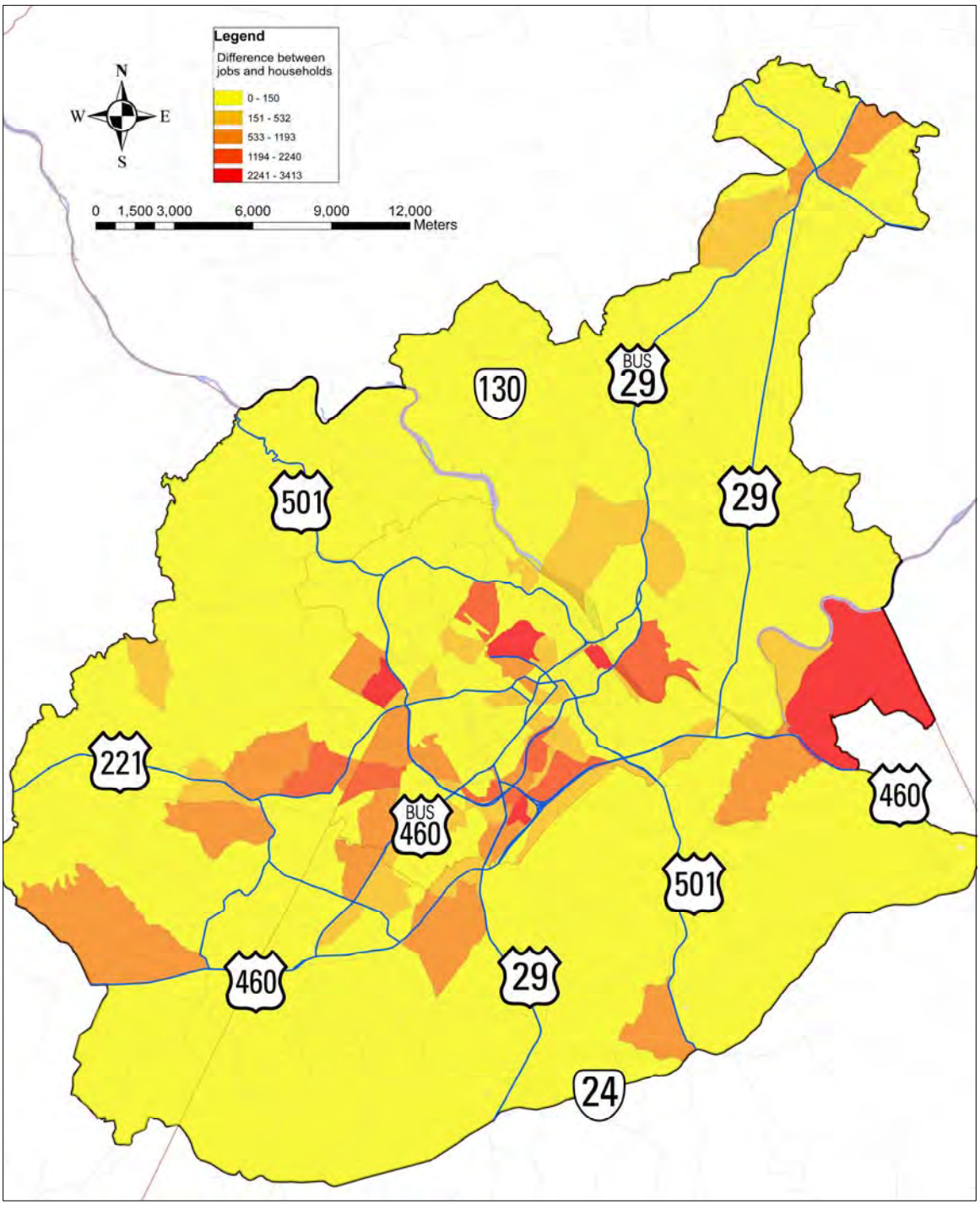
**Areas Where Households Exceed Jobs**
**(Difference Between Number of Households and Number of Jobs -- Data Available Within the MPO Area Only)**




*Note: Areas with higher color intensity are those where the number of households exceeds the number of jobs by the largest amount.*

Exhibit 7

**Areas Where Jobs Exceed Households**
**(Difference Between Number of Jobs and Number of Households -- Data Available Within the MPO Area Only)**




*Note: Areas with higher color intensity are those where the number of jobs exceeds the number of households by the largest amount.*

# Chapter 3: Regional Land Use and Transportation Challenges

The challenges for integrating land use and transportation planning include broad issues related to differences that are intrinsic to the two disciplines (such as differing goals, implementation timeframes, implementing agencies), and issues that relate more specifically to Central Virginia (these include characteristics of particular corridors, uneven growth pressures, local goals for the preservation of open space, etc.). The study process and recommendations were developed to identify and then specifically address both types of challenges. Broader planning discipline issues were identified through literature reviews and other research, and through several regional planning forums that solicited input from local stakeholders and national experts. More localized issues were identified through the planning forums (held in May and September 2006, and in March 2007) that were attended by government and elected officials, members of the business community and other regional transportation stakeholders.

## 3.1 Land Use and Transportation Planning Challenges

The interaction between transportation and land use planning is complex and is the subject of ongoing academic debate. Based on a comprehensive literature review, this study identified five aspects where differing goals, objectives, and approaches result in different, sometimes conflicting approaches between the two disciplines. These aspects are described briefly below; a more complete discussion is included in Appendix A of this report.

**Timescale Considerations:** Mismatches in timing between land development and transportation can occur in several ways. Often, development occurs first and it then takes many years for the traffic effects of this development to be felt, and for transportation projects to be planned, designed, funded, and then constructed. An opposite mismatch in timing occurs when a new roadway is built and it then takes many years for development that can take advantage of the new road to occur. These timing mismatches create challenges in integrating the two disciplines.

**Geographic Considerations:** Transportation is clearly a regional concern – roads cross jurisdiction boundaries, transit systems often do, and the customer base for airports and other intercity travel modes often encompasses many jurisdictions. Land use, by contrast, is more tied to a jurisdiction – regional impacts such as spillover traffic are felt through regional impacts such as transportation. This mismatch creates a wide range of issues related to implementation, funding, and coordination.

**Considerations Related to Lines of Authority:** This aspect relates closely to the geographic mismatches described above and is best illustrated by the fact that, in Virginia, land use decisions are the prerogative of local governments while many transportation decisions are made at the state level.

**Considerations Related to Differing Stakeholder Goals:** Land use planning and transportation planning are most often performed by different agencies and by staff

trained in very different ways – land use planners typically have more of a liberal arts or design background, while transportation professionals quite often come from an engineering background. For example, transportation goals frequently relate to mobility and safety; land use goals relate to scale and esthetics. Integrating and facilitating communication between various stakeholders is key to addressing this mismatch.

**Public and Private Sector Considerations:** In general, the public sector is responsible for the funding and construction of transportation facilities, while the private sector is responsible for constructing most development. Governments directly implement transportation projects, while their function with respect to land development is more regulatory. These mismatches create tension that affects areas such as funding, regulation, extent of private sector involvement in transportation funding, and appropriate government roles in the development process.

## 3.2 Region-Specific Challenges

Challenges that relate more specifically to the Central Virginia region were identified as part of the study's stakeholder involvement process. As indicated above, this process included three regional planning forums, meetings with local jurisdiction planning commissions, individual meetings with local jurisdiction planning staff, and monthly meetings with the study committee (which consisted of local jurisdiction planning and transportation staff). Additional details on the stakeholder involvement process are included in Appendix B.

The regional challenges identified by stakeholders were organized into nine general areas; these are summarized below.

**Challenge #1: Traffic Growth from By-Right Development**
For the three counties within the study area (Amherst, Bedford, and Campbell), substantial amounts of new development are taking place on properties that feed onto County secondary roads. Much of this development is by-right (i.e., conforms to zoning that is currently in place for the property), so the typical local government approvals that would be required for rezoning cannot be used as a tool for influencing the size, scope, and traffic impacts of the development. This removes options for developer participation in transportation improvements that are not either on or immediately adjacent to the development site. With extremely limited funding for new road construction by VDOT, traffic generated by this by-right development is putting increasing pressure on secondary roads that are not configured to safely carry the increased traffic loads.

**Challenge #2: Open Space**
The region's open space was consistently cited by participants in study planning forums as one of the key features that contributes to the region's high quality of life. Preservation of this open space was cited as a priority goal for the region, and there was a strong desire for enhanced land management to achieve this goal.

**Challenge #3: Land Use Density, Clustering, and Mixed Uses**
Continued growth and economic development is also a key goal for the region, and maintaining such growth while preserving open space requires that growth be concentrated in particular areas. As described in Chapter 2, the region currently has a relatively compact urbanized area, and efforts should be made to focus development within these urbanized areas, as well as other areas that are planned for such densities (such as key activity nodes and neighborhood/village centers). Increased clustering, along with higher densities, was also cited as a goal that would support more efficient transportation, including support for walking, bicycling, and transit. Similarly, construction of more mixed-use development, which supports a lifestyle conducive to walking, was cited by many study participants as a worthwhile goal.

**Challenge #4: Preservation and Enhancement of Safety/Functionality of Major Transportation Corridors**
The region's major transportation corridors currently serve the mobility and commerce needs of the region relatively well, but increased growth and limited transportation funds are putting pressure on these facilities. Access management can enhance the safety of these roadways and extend their functional life by limiting conflict points, and reducing the number of new traffic signals that slow traffic flow. Other goals cited for the region's major corridors include a consistent visual look for the corridors (including signage) throughout the region, better support for travel by walking, bicycles, and transit, and efforts to reduce the proliferation of strip development along these important corridors.

**Challenge #5: Availability and Viability of Non-Automotive Travel Modes**
While the single-occupant car is by far the major mode of travel in Central Virginia, study participants cited the need to increase the viability of non-automotive travel options in the region. Higher gas prices, reduced roadway funding, an aging population, and increased interest in more healthy modes of travel – all are trends that were cited as reasons to support other modes of travel through land use and transportation planning. Study participants cited specific goals to expand transit service and develop land use patterns that support such service, and to increase the attractiveness and viability of travel by walking and bicycling both for recreation and destination-oriented travel.

**Challenge #6: Public and Private Sector Roles in Transportation**
In Central Virginia today, the typical pattern is for the private sector to construct houses and commercial establishments, while the public sector constructs transportation improvements. For major portions of the state, particularly higher growth areas, the private sector plays a much bigger role in funding and constructing transportation improvements. Many study participants believe that, as growth pressures increase in the region, the private sector will need to play a bigger role in transportation, and that the roles and responsibilities of the public and private sectors needed to be more clearly defined. While these roles include funding and construction of transportation facilities, they also extend to other aspects including the need for increased active participation by the private sector in the land use planning process, increased guidance by the public sector on transportation-efficient development, increased public/private partnerships, and an overall increase in awareness by all sectors and the general public of the cost of

providing services (particularly the long-term transportation costs) to support development in remote areas.

**Challenge #7: Regional Cooperation for Land Use and Transportation Planning**
Transportation systems typically extend beyond jurisdictional boundaries, making transportation a regional issue. The regionalism of transportation has been recognized for many years in federal government transportation legislation by the important role that the Metropolitan Planning Organizations (MPOs) have been given in transportation planning. Study participants highlighted several specific goals for regional cooperation, including:

- Consistent requirements and procedures when working with the development community
- Development of a regional vision for urban form and the location of major regional facilities such as industrial parks and commercial centers
- Regional cooperation on a wide range of transportation issues, including roads, transit expansion, and air travel.
- Long-term goals for regional revenue sharing.

**Challenge #8: Economic Development**
The importance of economic development and job creation is a high priority in Central Virginia and it is recognized that transportation plays an important part in economic development. On the land use planning side, study participants cited concerns that too much regulation can stifle the region's economic development, so a balance is very important. Study participants also highlighted regional consistency and regional cooperation, and the substantial benefits of marketing the region as a unified entity.

**Challenge #9: State and Local Government Roles in Land Use and Transportation**
The standard refrain in any discussion about land use and transportation in Virginia is: "localities control land use and the state controls transportation." This division creates an underlying disconnect between the two disciplines, and study participants repeatedly cited the need to bridge this disconnect. A need was cited to both clarify roles of localities and the state, and to ensure that these roles evolve in a way that supports better and more unified planning. Other specific needs that were cited include more land use planning tools for local governments in order to better match the transportation system's capacity with land use growth.

# Chapter 4: Recommended Regional Actions

This chapter describes the proposed regional actions for better integrating land use and transportation. As noted previously, this study sought to initiate a regional dialog on better integrating land use and transportation; a dialog that formally began with the first regional planning forum that was held in May 2006. The recommendations in this chapter are those of the study consultant and reflect not only the results of planning analysis and research, but also the progress of a year of dialog that included planning professionals, local jurisdiction planning commissions, and a variety of stakeholders. Of necessity, the recommendations reflect a snapshot in time – at the date of this report's publication. Further evolution of these recommendations, and their implementation, will come from continuation of the regional dialog. As will be described more fully in Chapter 6, one of the key mechanisms to keep the dialog moving is the establishment of a Working Group, comprised of regional planning staff, working with appointed and elected officials, that will refine and implement the recommendations. The Working Group will be charged with prioritizing initiatives, shepherding their implementation, and continuing an education process for the general public, appointed and elected officials, and other key stakeholders. For several of the recommendations described in this chapter, specific references are made to activities that would be charged to the Working Group.

The action recommendations described in this chapter are organized into five broad initiatives:

1. More closely integrate regional long-range transportation planning and local comprehensive land use planning;
2. Increase the region's policy and regulatory emphasis on the adequacy of transportation facilities with respect to new development;
3. Adjust the roles and responsibilities of local governments and the state with respect to local/secondary roads and primary roads;
4. Increase the state's role in comprehensive planning, both through a policy-level statewide comprehensive plan as well as through the provision of services and expertise to localities on land use and transportation planning issues; and
5. Expand the region's roles and responsibilities in transportation.

## 4.1 Initiative #1: More closely integrate regional long-range transportation planning and local comprehensive land use planning.

The objective of this initiative is to strengthen direct ties between transportation planning documents such as the region's long-range transportation plan and local planning documents and activities (such as comprehensive plans, zoning ordinances, and development review procedures). This integration will be accomplished through several action items, including the development and adoption of regional transportation overlays, the development and adoption of regional policy statements on public and private roles in transportation infrastructure, follow-on activities to the transportation planning process to develop additional levels of design detail to support more specific land use planning activities (such as preserving rights-of-way through setbacks).

Action Recommendation 1.A: Regional Transportation Overlays

The major action recommendation related to Initiative #1 is the development and adoption of regional transportation planning overlays. The overlays encompass key areas, on a local and coordinated regional basis, where the transportation/land use connection needs to be emphasized in land planning (including comprehensive plan updates, zoning changes and re-zonings), transportation planning, and as part of new development and/or redevelopment activities. In cooperation with local jurisdictions, regionally consistent overlays have been developed to identify specific considerations that need to be taken into account as part of both land use and transportation planning, and to geographically pinpoint these areas. The overlays would have three primary uses:

1. Establish areas where additional analysis would be required for new development in order to address particular areas of emphasis within the overlay (guides the Transportation Impact/Conformity Review, or TICR, process described in Section 4.2);
2. Provide feedback into the Comprehensive Plan development process for each locality on areas where land uses and land use patterns should specifically consider transportation considerations; and
3. Guide regional transportation planning by feeding back into the long-range transportation plan development process.

Preliminary mapping of the overlays are included in Exhibits 8-11, and the specific overlays are described below.

Transit-Supportive Overlay: This overlay would encompass areas of moderate to high density and also include a one-mile wide band along major regional corridors (Routes 29, 460, 501) as well as other corridors within more urbanized areas (i.e., Route 221 through Forest). In conjunction with the TICR process as well as roadway improvement plans, the definition of this overlay would seek to implement land use and transportation features that could support transit, ridesharing, and other alternatives to single-occupant car travel over the long term.

Neighborhood/Village Center Overlay: This overlay would encompass areas of focused activity such as urban neighborhoods and rural village centers to promote walking, bicycling, and small-scale public space quality. Transportation features within these overlay areas should also include designs to minimize traffic speeds and to seek overall reductions in vehicular travel. As with the Transit-Supportive Overlay, this overlay would be implemented partially through the TICR process.

Rural Preservation Overlay: This overlay seeks to identify areas where transportation improvements would be minimal and development should be controlled in order to reduce or eliminate the need for transportation improvements. The boundaries of this overlay will follow the boundaries of local rural preservation planning areas.

Exhibit 8

**Preliminary Regional Transportation Overlays:**
**Amherst County and the Town of Amherst**

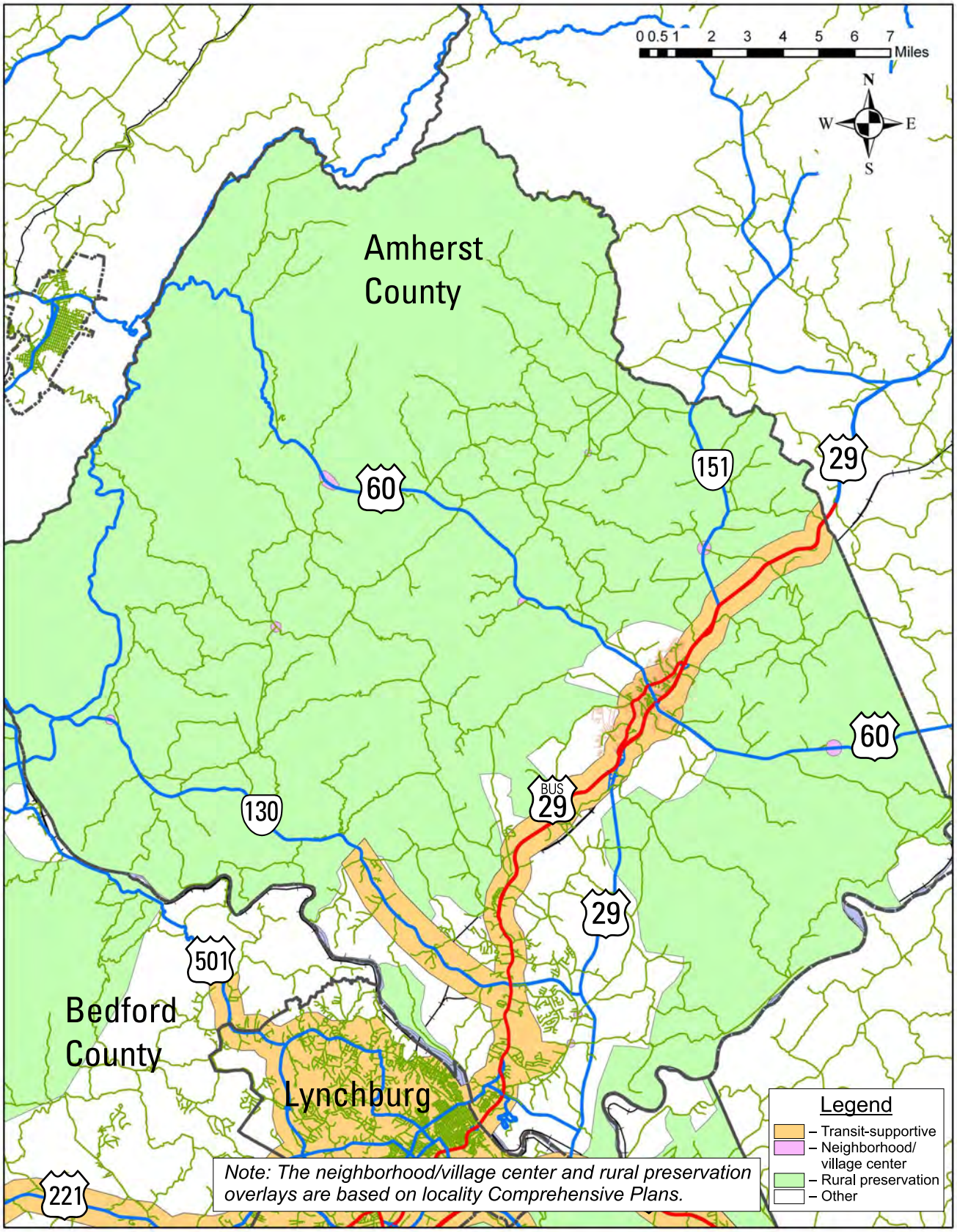


Exhibit 9

**Preliminary Regional Transportation Overlays:**
**Bedford County**

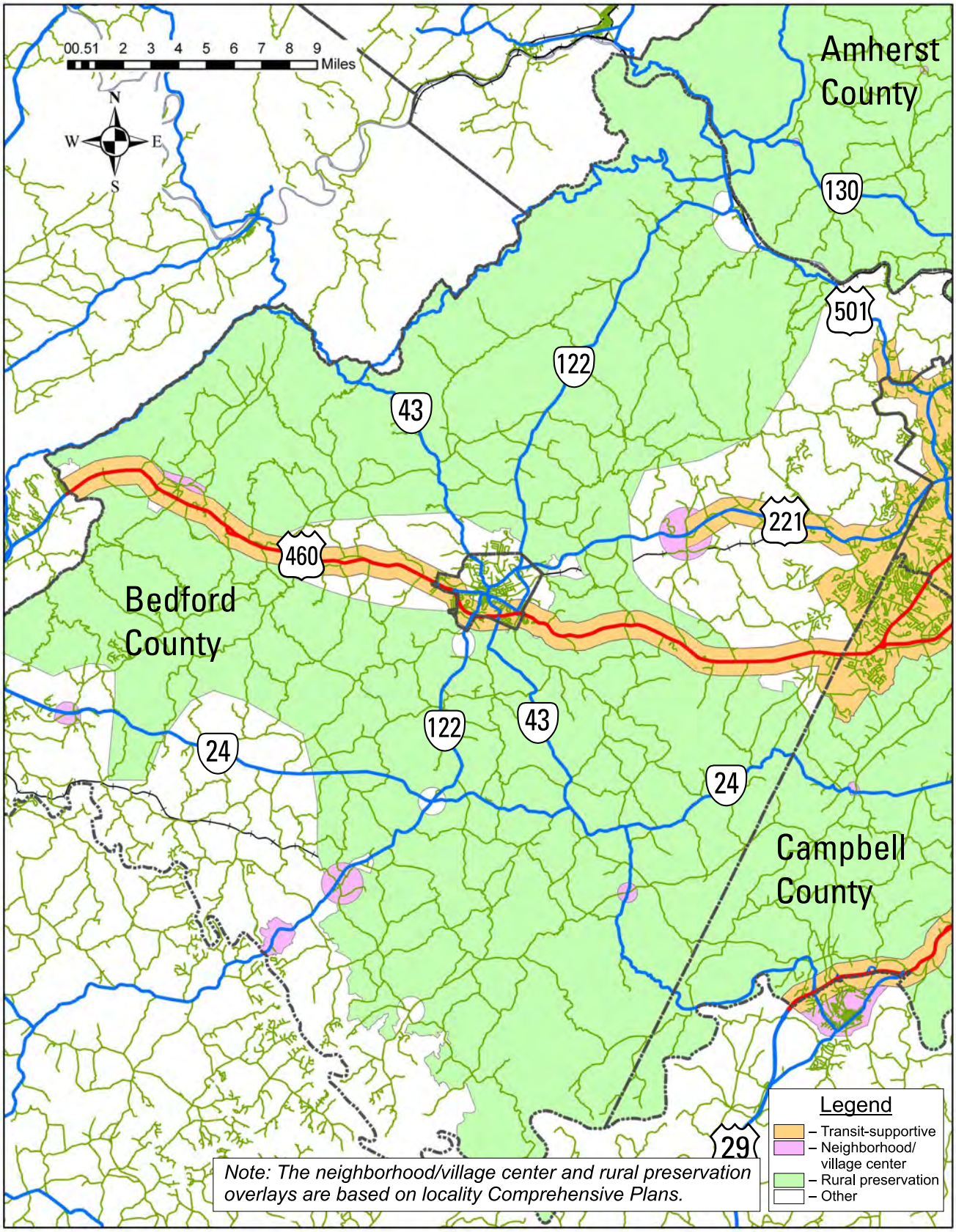


Exhibit 10

**Preliminary Regional Transportation Overlays:**
**Campbell County**

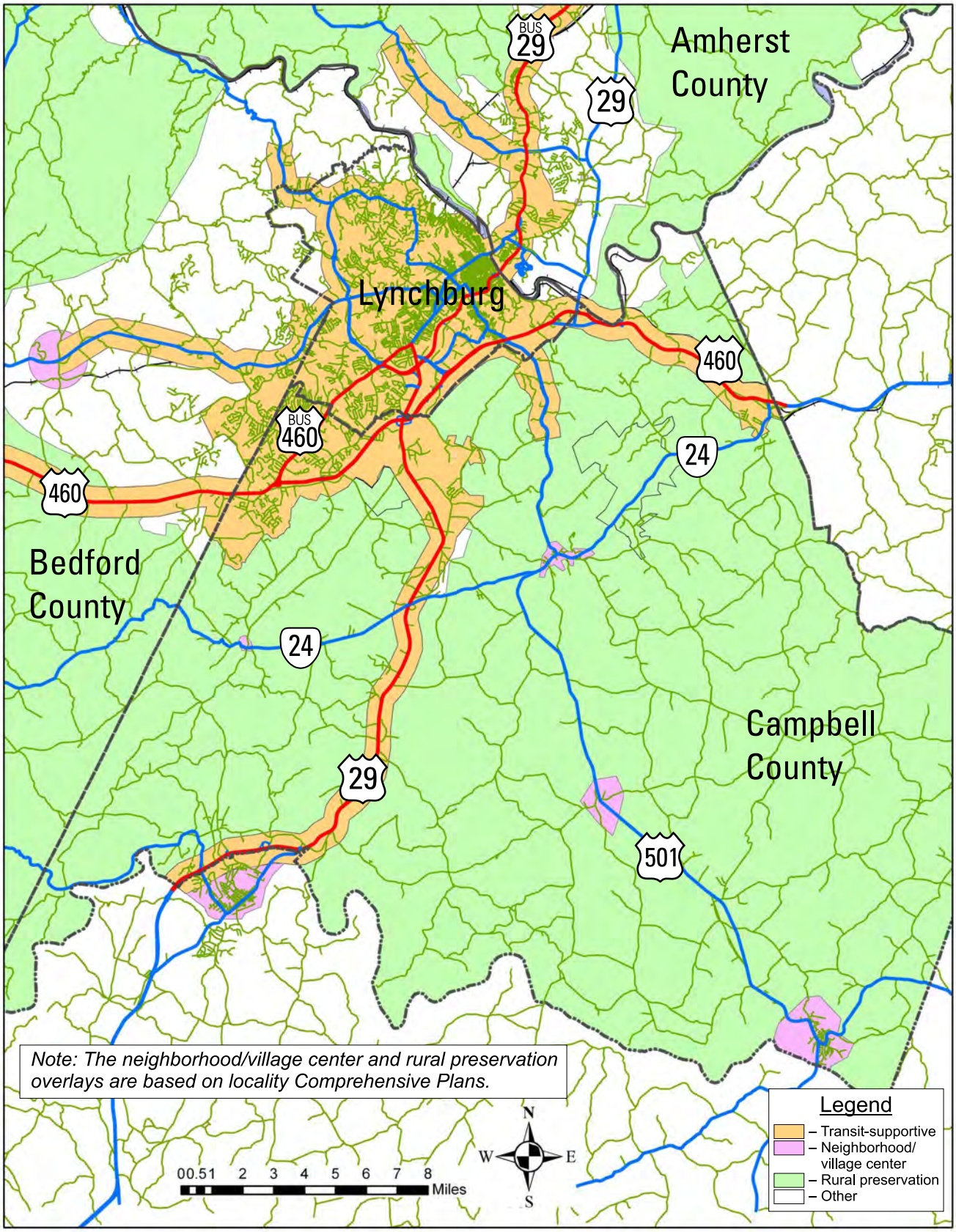
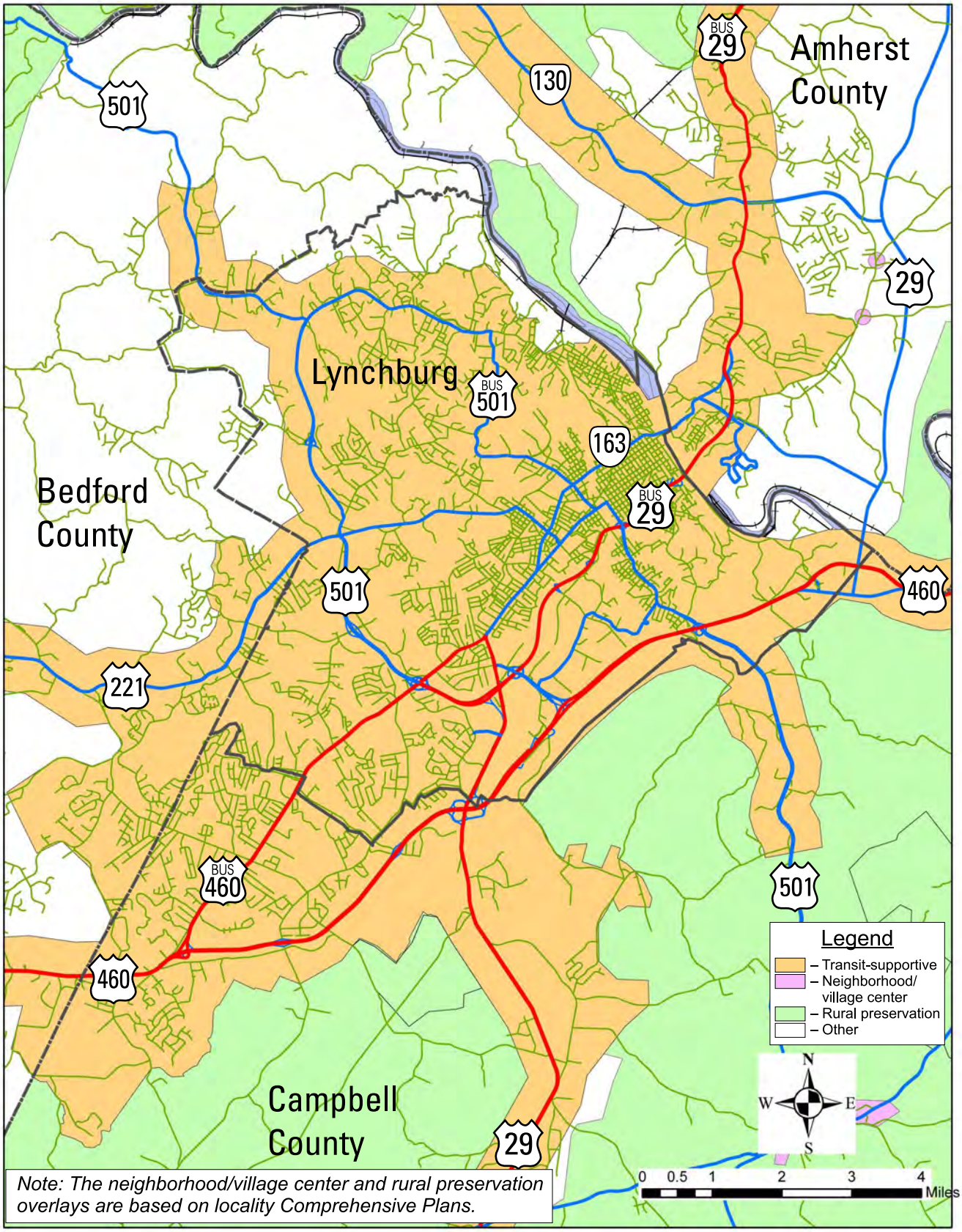


Exhibit 11

**Preliminary Regional Transportation Overlays:**
**City of Lynchburg**




*Note: The neighborhood/village center and rural preservation overlays are based on locality Comprehensive Plans.*

The neighborhood/village center overlays and the rural preservation overlays shown in Exhibits 8-11 were derived from existing locality Comprehensive Plans.

While not prepared as part of this study, additional overlays could be developed in the future to highlight areas where transportation can enhance and support land redevelopment. Methods to divert higher volumes and higher-speed traffic can assist in efforts to redevelop residential areas, while efforts to enhance accessibility for employees and goods can support redevelopment of commercial areas. The redevelopment overlays would highlight regional priority areas where transportation investments could support redevelopment efforts.

**Implementation and Funding:** The regional overlays described above have been developed at an initial level. The implementation process would start with the regional Working Group that would refine and then work towards the adoption of regional transportation overlays and policy statements into locality Comprehensive Plans. Beyond implementation, maintenance of the overlay mapping would be a joint effort of the region, localities, and/or other parties hired to assist either the region or localities in developing or updating either transportation or land use plans. For example, required five-year updates to the MPO's federally mandated long-range transportation plans should incorporate an explicit task for incorporating necessary changes (that result from new projects) into the regional overlay mapping. Because this mapping directs local efforts with respect to planning and development review, it will be necessary for updates to be adopted as amendments to the Comprehensive Plan and/or zoning ordinance by appropriate local governments.

Action Recommendation 1.B: Establish Regional Policies on Public and Private Roles with Respect to Transportation Infrastructure

As described in Chapter 3, both the public and private sector play important roles in the transportation system. These roles vary by area, with the private sector participating in constructing and funding transportation infrastructure in fast-growing areas. As the pace of growth increases in Central Virginia, the region would benefit from a consistent approach and policy towards private participation in the transportation improvements. Recent experience with attempts to establish a proffer system in Campbell County suggest that clear regional policies would both clarify and provide a foundation upon which each of the local governments in the region could build. These regional policies will state the role and importance of the private role, the extent to which the private sector should be expected to contribute to needed infrastructure, and also define the role of the public sector. Suggested wording for a regional policy statement, recommended for adoption by each of the jurisdictions in the region, is included in Exhibit 12.

The State of Virginia currently enables localities to develop guidelines for voluntary cash proffers from developers as part of the rezoning process. All of the jurisdictions within the study area meet the criteria for implementing such a system. Cash proffers are intended to offset the infrastructure demands of increased development and can apply to a wide range of public facilities including transportation. These cash proffers apply only to

land development that requires rezoning and would thus not apply to by-right development. There are strict requirements for developing cash proffer guidelines which are described in Appendix C. Appendix C also summarizes some of the benefits of the cash proffer system as well as some of the reasons that its adoption has been opposed in many jurisdictions.

**Implementation and Funding:** Implementation of this action item would require refinement of suggested wording, analysis of the implications of such policy statements, and coordinated activity by all jurisdictions in the region for adoption. It is not anticipated that separate funding would be required for this recommendation.

Exhibit 12
**Recommended Wording:**
**Regional Policy Statement on Public and Private Roles in Transportation**

**WHEREAS,** it is the responsibility of state and local governments in Virginia to provide for safe and effective transportation for the general public and for the conduct of commerce;

**WHEREAS,** in particular areas within **{{jurisdiction name}}**, traffic generated by new development is putting a disproportionate share of traffic on already strained roadway facilities;

**WHEREAS,** improved coordination between land use and transportation planning has been identified as a regional priority in order to promote a high quality of life with continued economic development in Central Virginia;

**WHEREAS,** the Commonwealth of Virginia has, through various legislative efforts, recognized that the private sector plays an important role in the provision of transportation improvements to serve traffic generated by new development; and

**WHEREAS,** various moderate and fast-growing communities across the Commonwealth have recognized the important role of the private sector in developing transportation improvements and implemented regulations and procedures to define and regulate this role;

**NOW THEREFORE BE IT RESOLVED** that it is the policy of {{jurisdiction name}} that:

- Both the public and private sectors have important roles to play in providing the general public with a safe and effective transportation system, and it is in the interest of **{{jurisdiction name}}** to work closely and on an ongoing basis with the private sector to identify and develop transportation improvements; and
- An equitable share of the roadway capacity needs generated by new development is the responsibility of the property developers and residents of new development within **{{jurisdiction name}}.**

Action Recommendation 1.C: Enhance the Level of Detail in Transportation Planning Concepts in Order to Better Support Land Use Planning Activities

Projects included in transportation plans, especially long-range projects, are most often developed at only a conceptual level, perhaps only a broad line on a not-to-scale illustrative map that connects two points within the region, or a 500-foot planning width for use in assessing planning impacts while the ultimate roadway right-of-way footprint may be 120 feet. Such concepts and planning widths are used because the projects have typically not proceeded far enough to develop higher levels of detail. From a land planning standpoint, however, a conceptual plan needs to have some specificity if rights of way are to be preserved. Land-owners often seek to have additional information on where a roadway or roadway widening will go so that they can develop site plans that work in concert with the proposed roadway. This action item recommends that efforts be made to develop concept plans to higher levels of detail in order to better inform land planning decisions.

The overall objective of this action recommendation is to promote better planning, ensure that options for needed improvements are preserved through the reservation of rights-of-way, and to minimize the impact of transportation improvements by informing land owners of the specifics of proposed improvements so that buildings and other improvements can be appropriately located. The process of developing detailed concept plans to an appropriate level to achieve this objective should be standardized as described below.

This recommendation seeks to develop a standardized approach and understanding of the process for developing transportation concept plans to a higher level of detail in order to support better land use planning. Specifically, this effort is intended to provide local jurisdictions, VDOT, and land owners with plans at a sufficient level to inform decisions such as the location of setbacks, the location and orientation of buildings and other infrastructure on affected lots, and the location and type of access points (i.e., how they relate to roadway features such as median location, type, and breaks). Key features include:

1. Designs should be developed at an appropriate level of detail to provide local jurisdictions, VDOT, and land owners with information that can be used to support decisions on the location of setbacks, the location and orientation of buildings and other infrastructure on affected lots, and the location and type of access points (i.e., how they relate to roadway features such as median location, type, and breaks).
2. It is crucial that the use and limitations of the designs be communicated to all users. These limitations include an understanding that design standards, environmental requirements, and other factors may require changes to the design. It should also be emphasized that unless rights-of-way are purchased or overlay zoning requirements are implemented, the detailed concept plans serve to inform the decision-making process for local jurisdictions, VDOT, and land owners, and

are not project design engineering plans. The detailed concept plans alone cannot be used to require land-owners to develop their properties in a particular way.

3. A proactive public and stakeholder involvement process that allows for input by interested and affected parties is a critical component of the development of these plans. Public meetings should be held at the outset of the process and throughout at key milestones.
4. Close coordination with VDOT would be necessary to ensure that the plans meet VDOT minimum standards. A study steering committee that includes both local government and VDOT staff should be developed at the outset of the study effort.

It is important to recognize, however, that final detailed corridors for constructing a roadway are determined through comprehensive location and environmental studies typically performed by VDOT when funding for a project has been identified and is included in the VDOT Six-Year Improvement Program. It should be understood that the "planning alignments" developed as part of this action recommendation may or may not conform to the final chosen alignment. The preservation of the "planning alignment", along with the careful consideration of planning, engineering, and environmental aspects in the planning effort described above means that the identified corridor is perhaps the most likely to be chosen for the final corridor, but this is by no means guaranteed.

The process for developing these detailed concept plans would consist of the following steps:

1. Scoping: Identify the need and purpose for the improvement and the requirements, including a typical cross-section. This effort should be closely coordinated with VDOT and other stakeholders. A public meeting early in the process is suggested for this effort. In many cases, portions of the scoping effort may have been performed as part of planning concept or feasibility studies, or as part of regional planning efforts such as an MPO Long-Range Transportation Plan.
2. Identify constraints through environmental consultation and, where appropriate, develop alternatives: Develop mapping of engineering, environmental, and man-made constraints. Where appropriate, develop alternative ways to avoid and/or mitigate these constraints. Review the constraints and alternatives with stakeholders.
3. For a preferred alternative, develop detailed concept plans that show the following:
    a. Right-of-way limits
    b. Lane configurations and locations
    c. Intersection configurations
    d. Median location and proposed median breaks
    e. Sidewalk and trail location
    f. Access points, including driveway spacing
    g. Building setbacks
4. Review detailed concept plans with the general public and other stakeholders.

5. Finalize detailed concept plans and incorporate them, as appropriate into the local planning process. Both the local jurisdiction planning office and the VDOT Residency Office should have copies of the final plans.

In general, the proposed detailed concept plans should, at a minimum, take into account the following:

1. The requirements of the proposed cross section (lane widths, median type and width), drainage type including the need for curb and gutter, intersection geometry requirements including the need for traffic signals, sidewalks and/or trails, intersection and/or mid-block crosswalks, bus stops and/or bus pull-offs, and side road and entrance standards including acceleration and deceleration lanes.
2. Topography, streams, floodplains, wetlands, and other physical and drainage features
3. Existing structures and property boundaries
4. Environmental and man-made features such as:
   - Major community features (schools and colleges, churches, hospitals, community centers, recreational facilities, parks and recreation areas, airports, etc.)
   - Surface waters and wetlands
   - Wildlife management areas
   - Cemeteries
   - Historic districts and properties on historic registers
   - Hazardous materials sites, landfill sites
   - Scenic byways
   - Conservation districts and easements
   - Prime farmlands
   - Major utilities

All plan sheets should incorporate the following wording:
*These planning-level designs are intended for planning purposes. VDOT acceptance of these planning-level designs does not constitute approval of location and design, or a commitment to fund any recommended improvements. Additional project-level design refinements, environmental impact assessments and/or studies of alternatives may be necessary.*

**Implementation and Funding:** It is anticipated that this process would be initiated, directed, and managed by local government to ensure that the final products will meet their requirements for planning. VDOT residency and district transportation planners, designers, and environmental staff should participate in the steering committee and should review plans as they are developed. It is anticipated that funding for this effort would be a local responsibility, as it is unlikely to qualify for VDOT planning funds. The cost for these studies is highly variable depending on the length of the project, the location of the project, and the level of complexity and range of issues. Typical costs,

including a public and stakeholder participation effort, are likely to fall between $6,000 and $25,000 per linear mile of roadway project.

Action Recommendation 1.D: Apply Consistent Access Management Standards to All Major Transportation Corridors in the Region

Access management is an important tool for preserving and enhancing the safety and functionality of transportation corridors. The stakeholder participation process for this study highlighted the critical importance of managing the primary road corridors to ensure their long-term functionality and safety in light of tremendous pressures for growth. The proliferation of uncontrolled and unplanned access features (which include driveways, small roads, and median breaks) results in the deterioration of safety based on increases in the number of conflict points, increased variability in travel speeds as motorists slow to make turns, increased amounts of lane changes, and more stopping and starting at traffic lights. Reduced travel speeds are also a usual result of increases in access points, with the carrying capacity of the roadway suffering from both decreased speeds and capacity constraints at signalized intersections.

Access management typically includes both physical improvements as well as changes in requirements and incentives for adjacent properties to access the roadway corridor. A consistent approach across the region towards access management would benefit the region's overall safety and mobility, and effective access management fully integrates transportation and land use planning at the corridor level. A complete discussion of proposed access management standards, including implementation issues, is included in Appendix D.

### 4.2 Initiative #2: Increase the region's policy and regulatory emphasis on the adequacy of transportation facilities with respect to new development.

Perhaps the highest profile aspect of integrating land use and transportation is the need to address the transportation impacts of new development. New neighborhoods and shopping centers are the most visible contributor to the growth in regional traffic volumes, and residents see major retail growth corridors such as Wards Road as evidence of traffic increases. Current procedures in Central Virginia with respect to addressing new developments are inconsistent across jurisdictions and a strong need to be more comprehensive was identified as part of this study. Initiative #2 seeks to address these shortcomings.

Action Recommendation 2.A: Implement Regionally Consistent Transportation Impact/Conformity Reviews

The Transportation Impact/Conformity Review (TICR) process is intended to provide a regionally consistent approach to consider the impacts of individual land development projects on the transportation system. The TICR will serve as a decision-making and informational document regarding the impact of new development on the transportation system and the extent to which the development conforms to existing local and regional

transportation plans. The TICR is developed by the property developer for properties that meet minimum criteria for the number of trips generated by the proposed development.

The roadway impact aspect of TICR would be required for all new development projects that exceed minimum thresholds based on the expected traffic that would be generated. Recently finalized state regulations that respond to the legislation passed by the General Assembly in 2006 require VDOT participation in reviewing traffic impact statements (TIS's). The VDOT review is to evaluate and provide decision-making information to local governments relative to the impacts of new development on state controlled highways. These regulations are known as Chapter 527 (so named because the legislation establishing this process for enhancing coordination between land use and transportation planning was in Chapter 527 of the 2006 Acts of Assembly). The VDOT review process is advisory and does not affect the authority of local governments to make land use planning decisions, but it does require that TIS's be prepared in conformity with VDOT requirements. The TIS review process is being phased in across the state starting in the summer of 2007.

The VDOT review process kicks in based on the determination of whether a land use development proposal "substantially affects transportation on state-controlled highways" (VDOT Draft Guidelines for Traffic Analysis, February 23, 2007). For jurisdictions where VDOT has maintenance responsibility for the secondary road system (which includes all study jurisdictions except the City of Lynchburg), substantial impacts are defined as 100 peak hour trips or more from residential development and 250 peak hour trips or more for other types of development. For jurisdictions where VDOT does not have maintenance responsibility for local roads (City of Lynchburg), the same thresholds apply along with a requirement that the development be within 3,000 feet of a state-controlled highway.

To avoid conflicting guidelines, this study recommends that the VDOT guidelines be used as the regional standard for the roadway impact analysis portion of the TICR process (the VDOT requirements are included in Appendix E of this report). Local governments may choose to add the following requirements in order to assess additional land use/transportation impacts:

- Zoning of the property in question, zoning of adjacent parcels, and conformity of the proposed land use, its overall traffic generation and modal split (i.e., travel mode such as walking, transit, etc.) to the comprehensive plan.
- Long-term development plans and phasing sequences, including the assessment of a "build-out" scenario defined as 75 percent of maximum allowable residential density, floor area ratio (FAR) of 0.25 for retail uses and FAR of 0.40 for office uses.
- For larger and more regionally significant projects, analysis would include traffic operations at opening day, opening day plus 5 years, as well as analysis of longer-term transportation impacts (10 to 20 years).
- Compatibility with local and regional plans.

**Implementation and Funding:** The TICR process would be initiated and administered by local government. The development community would bear the cost of preparing the TICR document and would contribute to the cost of local government reviews with application fees.

Action Recommendation 2.B: Implement Additional Checklist Review Items for Land Development That Falls Within Regional Transportation Overlays

This recommendation expands the TICR process of Action Recommendation 2.A by incorporating qualitative assessments of the effects that development will have on the overall transportation objectives such as reductions in overall vehicular travel, and support for increased travel by transit, walking, and bicycling. This aspect of the TICR includes additional "check-list" qualitative assessment requirements that would be prepared by property developers but would incorporate substantial input from local and regional government staff. These additional assessments would be developed for properties that fall into one or both of the following regional overlay boundaries (described in Section 4.1):

- Transit-supportive areas
- Neighborhood/village center areas

The assessment for development that falls within the Transit-Supportive Overlay would be required for all development that meets the threshold for a roadway impact analysis, but also falls within the boundaries of this overlay. The assessments would be largely qualitative and developed by local government staff with input from regional staff, VDRPT staff, and GLTC staff as appropriate.

- What is the proposed density of the development?
- Is the density supportive of long-term transit consideration (6 dwelling units per acre or more, 25 employees per acre or more)?
- Does the site plan promote concentration of densities at locations that could be served by bus stops, rideshare, etc.? Does the site plan provide for sidewalks and/or trails to provide access to these locations?
- Does the proposed development provide for a mix of uses?

As with the transit-supportive overlay, the assessment for development within the Neighborhood/Village Center Overlay would be required for all development that meets the roadway impact analysis threshold but also falls within the boundaries of this overlay. Again, the assessments would be largely qualitative and developed by local government staff with input from regional staff.

- What is the proposed density of the development?
- Does the proposed development provide for a mix of uses?
- Does the proposed development include sidewalks and trails that tie into the existing or planned pedestrian and bicycle system?
- Does the proposed development encourage slower traffic speeds?

**Implementation and Funding:** As with the Action Recommendation 2.A, the enhanced TICR would be initiated and administered by local government, with the development

community bearing the cost of preparing the TICR document. The enhanced TICR would involve additional reviews from regional government and transit agencies, as appropriate.

For the qualitative assessments associated with this action recommendation, a scorecard methodology is suggested. Samples of the proposed "regional overlay" scorecard are included in Exhibits 13 and 14. These scorecards are not intended to result in scores at which a particular development "passes" or "fails", but rather to provide structured input from various review agencies to decision-makers. Weighting for each factor would be developed at the regional level to provide consistency across all jurisdictions.

The scorecards in Exhibits 13 and 14 would be completed by a range of reviewers, including the developer, locality planning staff, and other potential stakeholders that could include VDOT, GLTC, VDRPT and/or regional planning staff. Interpretation of the "scores" should recognize that there is a substantial amount of subjectivity in the scorecard process, but should also recognize its value as a structured feedback technique that communicates the extent to which a new development project meets goals for land uses that successfully integrate multi-modal transportation and quality of life features. Interpretation of scores should also avoid looking simply at the single number represented by the total weighted score; a review of the individual rankings provides important decision-making information as well.

### 4.3 Initiative #3: Adjust the roles and responsibilities of local governments and the state with respect to local/secondary roads and primary roads.

This initiative seeks to address several of the issues that were discussed in Chapter 3, including the mismatch between local control of land use and state control of roadways. While the rationale for state control of primary roadways is strong and is based on the fact that these primary roads serve regional, statewide, and even national mobility purposes, the rationale for state control of secondary and local roads is outweighed by the benefits to be gained from control of both the roads and the land use that feeds onto the roads by a single government entity. Conversely, this initiative also includes actions to enhance the ability of the state, through enhanced coordination and planning with localities, to affect land uses and access along major primary roads.

Action Recommendation 3.A: Increase Local Government Responsibility for Local and Secondary Routes

Over the past two years, there have been increased levels of discussion at the state level with respect to devolving increased responsibilities for local and secondary roads to local governments. Some of the impetus for this action has been related to limited transportation funding, and local governments are resistant to the change because they are ill-equipped to take on additional financial responsibilities. What has been missing from most of the discussions are the potential benefits to integrating land use and transportation that could be gained with increased local responsibility for secondary and local roads. The positive effect for local governments would be that a single local

Exhibit 13

**Scorecard for Development Within Transit-Supportive Overlay**

| | Criteria | Weight-ing (A) *[1]* | Score (B) *[2]* | Weighted Score (A x B) *[3]* |
|---|---|---|---|---|
| **Development Design** | Project is one-mile or less from major regional highway corridor | **1** | | |
| | Project is within proximity to downtown core | **1** | | |
| | Project meets objectives of local government's comprehensive plan | **3** | | |
| | Connectivity to other land uses or development within 1/3 mile | **2** | | |
| | Mixed use core to satisfy daily needs | **3** | | |
| | Site area devoted to roads is minimized | **1** | | |
| | Site area devoted to parking is minimized | **2** | | |
| | Provides improved, clearly defined paths for internal circulation between uses | **1** | | |
| | Parking located to support a pedestrian friendly environment | **2** | | |
| | Reduces internal vehicle trips | **3** | | |
| | Cleary marked and visible pedestrian crossings | **2** | | |
| | Site design is focused towards central place or transit facility | **2** | | |
| **Transportation Design** | Project within ½ mile of a planned or existing transit infrastructure | **1** | | |
| | Project location is currently served by public transit | **1** | | |
| | Transit friendly features (shelter, bench, signs, lighting) are included | **1** | | |
| | Transit facility is safely accessible without an automobile | **2** | | |
| | "Transit ready" densities based on potential future service | **2** | | |
| | Dry, dignified place to wait for transit | **2** | | |
| | Frequently visited uses are safely accessible without an automobile | **2** | | |
| | Enhances transit service through hours of business operations | **1** | | |
| | Intermodal connection features for other transportation modes | **1** | | |
| | Town Center transit center | **1** | | |
| | Close proximity park-and-ride lot for transit and/or intermodal users | **2** | | |
| | Weather-resistant transit schedules clearly posted | **1** | | |
| | Transit vehicles with bicycle racks | **1** | | |
| | Extends local or regional transit services via routing and scheduling techniques | **2** | | |
| | **Transit Supportive Overlay – Total Score →** | | | |

*Notes:*

*[1] – A sample weighting is provided here. It is anticipated that the regional Working Group will refine this weighting.*

*[2] – Scores would range from 1 to 5, with a 5 given when the criteria is met at a maximum level and a 1 given when the criteria is not met.*

*[3] – The weighted score is the score multiplied by the weighting value.*

Exhibit 14

**Scorecard for Development Within Neighborhood/Village Center Overlay**

| | Criteria | Weight-ing (A) *[1]* | Score (B) *[2]* | Weighted Score (A x B) *[3]* |
|---|---|---|---|---|
| **Development Design** | Project meets objectives of local comprehensive plan | **3** | | |
| | Buildings maintain or establish an edge from the street | **2** | | |
| | Provides community centers, recreational facilities, parks, plazas, open space | **1** | | |
| | Public spaces within ½ mile of site | **1** | | |
| | Short internal blocks (250 to 500 feet) | **2** | | |
| | Frequently visited uses are within 1/2 mile | **2** | | |
| | Internal sidewalk network (ADA compliant) | **3** | | |
| | Continuation of existing sidewalk networks | **3** | | |
| | Direct connection to greenway | **3** | | |
| | Provides improved, clearly defined paths for internal circulation between uses | **2** | | |
| | Mixed use core | **3** | | |
| | Reduces internal vehicle trips | **2** | | |
| | Development size is 40 to 125 acres | **2** | | |
| | Residential land use is a 10% minimum of total development | **2** | | |
| | Minimum of 15% of floor area in core is commercially oriented towards residents | **2** | | |
| | Proposed school on-site | **2** | | |
| **Transportation Design** | Includes attractive sidewalks, walkable features | **2** | | |
| | Parking located to support pedestrian friendly environment | **2** | | |
| | On-street parking | **2** | | |
| | Narrow roadways that still accommodate public/emergency vehicles | **1** | | |
| | Provides for internal shared parking for adjacent uses | **1** | | |
| | Frequently visited uses safely accessible without automobile | **2** | | |
| | Interconnected internal street network | **3** | | |
| | Continuous routes that enhance non-vehicular travel | **3** | | |
| | Clearly marked and visible pedestrian crossings | **3** | | |
| | Dedicated bicycle lanes or traveled rights of way | **2** | | |
| | Appropriate bicycle roadway striping and markings | **2** | | |
| | Bicycle storage or racks | **1** | | |
| | Internal alleys promote parking; not through traffic | **2** | | |
| **Neighborhood/Village Center Overlay – Total Score →** | | | | |

*Notes:*

*[1] – A sample weighting is provided here. It is anticipated that the regional Working Group will refine this weighting.*

*[2] – Scores would range from 1 to 5, with a 5 given when the criteria is met at a maximum level and a 1 given when the criteria is not met.*

*[3] – The weighted score is the score multiplied by the weighting value.*

government entity would control both the development that is adding traffic to local roads as well as the roads themselves. This recommendation is explicitly not one that is recommending local governments take over funding – funding should continue to be allocated to localities from the state based on current formulas. Further discussions and refinement of this recommendation should ensure that such state funding levels continue. Local governments could, however, enhance the amount of funding available, either through local funding mechanisms or through future measures involving private sector participation.

Localities control local roads in most states, and previous studies by the Virginia Transportation Research Council have highlighted the fact that the division of responsibilities in Virginia results in a significant disconnect. For example, many if not most counties simply do not think of roads in the same way as other infrastructure (such as water, sewer, solid waste) because roads are the responsibility of an entirely different agency at a different level of government. VDOT's new Chapter 527 regulations requiring review of comprehensive plans and traffic impact studies is one effort to bring land use and transportation together, but consideration needs to be given to the fact that land use will likely always be a local prerogative in Virginia and local control of roads that serve largely local traffic is a more conclusive long-term action.

It is important to note that, even with state funding provided for secondary roads, there are likely to be significant funding implications for local governments as they would need to add staff and equipment to maintain their own roadway system (or take over existing VDOT residency activities). Consideration of regional cooperation in these efforts may be an important factor and a way to share some of the costs (this is similar to what is either currently being done or is being proposed in Central Virginia for other services such as solid waste).

**Implementation and Funding:** Shifts in responsibilities for secondary roads in Virginia can be requested by local governments or it may ultimately be the result of legislation at the state level. This Action Plan is recommending that local governments seek to frame the discussions that are going on at the state level in order to maximize the benefits to the localities, specifically with respect to enhancing the ability of local governments to better integrate land use and transportation planning. Long-term funding implications of the shift in responsibilities would be dependent on how much responsibility shifts, whether localities share costs, and other variables that are difficult to predict at this time.

<u>Action Recommendation 3.B: Increase State Emphasis on Comprehensively Managing Primary Transportation Corridors</u>

There has been increasing emphasis in transportation on managing transportation corridors, through activities such as access management plans and circulation studies. Region 2000 has performed several such studies on major corridors within the region. Each of these studies touch on land use through recommendations with respect to issues such as access, driveway spacing, and setbacks that are generally recommended to be implemented through overlay zoning requirements that apply to properties along the

corridor. This action recommendation is to increase state emphasis on managing primary corridors through developing tightly integrated land use and transportation plans for the corridors (Integrated Corridor Plans) that incorporate assessments of underlying zoning to address changes in densities, increased clustering around major defined access points, and better definition of activity nodes at appropriate spaced intervals in order to avoid linear "strip" development.

Items to be included in the Integrated Corridor Plans include:

- Land Use: Comprehensive Plan amendments, review of underlying zoning, clustering incentives, overlay zoning, form-based codes
- Transportation: access management, circulation and access roads. context-sensitive design features and cross-sections, amenities (bus shelters, bicycle and pedestrian accommodations, pull-offs, curb extensions), rights-of-way requirements.
- Multi-modal: tied ultimately to expansion of transit in the region (including bicycle and pedestrian facilities, and connectivity to air and rail transportation)

**Implementation and Funding:** Because of the need to fully integrate the land use and transportation recommendations in these corridors (including the need to adjust the transportation recommendations based on the extent to which localities adjust existing zoning), the development of the Integrated Corridor Plans would be a cooperative responsibility of VDOT and local government planning staff, with funding provided by VDOT.

### 4.4 Initiative #4: Increase the state's role in comprehensive planning, both through a policy-level statewide comprehensive plan as well as through the provision of services and expertise to localities on land use and transportation planning issues.

As the Action Plan was being developed, and starting with the initial regional planning forums, it was clear that some level of increased state participation in enhancing coordination between land use and transportation planning would be productive. Some of the most productive approaches in other states involve a state planning agency or inter-agency group that serves both as a resource to, and an advocate for, local governments. For example, Oregon created a team, consisting of representatives of the Department of Transportation and four other state agencies, that provides technical assistance to local governments on transportation-related land use issues. Examples of services that the agency provides include ways to encourage major employers to locate in transportation-efficient locations. Four separate action recommendations relate to services that a state-level planning agency could and should provide:

Action Recommendation 4.A: Develop a statewide policy-level comprehensive plan that includes support for enhanced integration between land use and transportation planning.

Action Recommendation 4.B: Provide expertise and support to local governments on land use planning, integrating land use plans with transportation plans, supporting economic development in transportation-efficient areas, and coordinating with VDOT and other agencies in efforts such as the advance purchase or rights-of-way for major transportation projects.

Action Recommendation 4.C: Provide support from the state level for the development and implementation (through enabling legislation) of additional planning tools for local governments. Such tools could include adequate public facilities ordinances, concurrency laws, enhanced zoning powers, as well as measures to reduce, minimize and/or streamline private sector regulatory burdens.

Action Recommendation 4.D: Ensure that the land use and economic development implications of transportation projects are included in all presentations to the Virginia General Assembly.

### 4.5 Initiative #5: Expand the region's roles and responsibilities in transportation.

The regional scale is critical to integrating land use and transportation planning. As discussed previously, transportation is clearly an issue that extends beyond the boundaries of individual jurisdictions. Discussions over the course of this study have compared transportation to other infrastructure that is best addressed at the regional level: areas such as public safety and jails or solid waste. And, as Central Virginia is discovering with some of these other areas, there are efficiencies, economies, and economic development marketing opportunities available with such regionalization. This initiative seeks to expand the role of the region in transportation, both to support local activities in transportation and land use, and ultimately to more fully integrate the region for transportation.

Action Recommendation 5.A: Regional Review of Transportation Impact and Conformity Reports (TICR)

Currently, the regional perspective is not formally part of the deliberations of local Planning Commissions or Boards of Supervisors/Councils. True integration of land use and transportation planning should take into consideration the fact that transportation is a regional issue and that land development that adds traffic to the transportation system also, therefore, has a regional component. This is particularly true for larger, regional-scale developments as well as developments that are located near jurisdiction boundaries.

For the TICR process described in Section 4.2, a regional perspective could be added to the process through input provided by the planning district/MPO staff. In the short-term, reviews of traffic impact studies will be performed VDOT as part of the Chapter 527 process, and additional participation by regional planning district/MPO staff is not recommended. Because of the importance of the region in transportation, however, consideration of increased regional roles as the traffic impact study process evolves is advisable. As with other regional issues, local governments may also find that making

use of regional planning staff to review traffic studies and present findings to local decision-makers is more efficient and cost-effective than developing such expertise in-house.

**Implementation and Funding:** This recommendation would require staff resources at Virginia's Region 2000 Local Government Council. Based on discussions with VDOT staff, this particular activity is not eligible for state and federal planning funds. Funding would come from local governments based on the extent of services requested.

Action Recommendation 5.B: Increased Transportation Planning Support for Local Governments

Specialized transportation planning expertise, such as travel demand modeling, analysis of the impacts of various land use scenarios, and the development of transportation and land use databases, is generally not cost-effective for jurisdictions the size of those within the study area. Because the ability to make use of these types of analytic tools to support locality decisions on both land use and transportation is important, an increased role for the planning district/MPO staff to provide such services is recommended.

Specific activities that could be provided to enhance regional transportation planning include:

- Expand the transportation analysis zone (TAZ) system that is currently in place within the MPO area to cover the Action Plan study area.
- Enhance land use databases to support improved transportation decision-making. Such enhancements could include better tie-ins between tax parcel data and TAZ's in order to have more complete and up-to-date information on actual land activity (i.e., square footage of space allocated to various uses such as retail, residential, etc.) as well as the densities that are allowed by-right based on current zoning.
- Working with localities, develop visions and mapping for long-term regional settlement patterns that are tied to transportation and other infrastructure.
- Assess the extent to which existing regulations and procedures act as barriers to higher density development patterns that could be more transportation-efficient.

Action Recommendation 5.C: Advocate and Seek Funding for Implementation of Regional Blueway and Greenway Plan

Study participants highlighted the importance of travel by walking and bicycling to the region's quality of life and to the provision of healthy methods of travel. Regional planning district/MPO staff have served as advocates for the development and implementation of the Regional Blueway/Greenway Plan, including the identification of various funding sources including grant opportunities. Continuation of this important function is recommended.

Action Recommendation 5.D: Establish Regional Transportation Authority

The importance of regional cooperation on a wide range of issues was highlighted throughout the study process by participants. These participants also noted the value of a unified region in attracting economic development and employment. Region 2000 has been successful in developing regional alliances for infrastructure and economic development and has been praised at the state level for its high level of regional cooperation. Expanding such cooperation to transportation would provide wide-ranging benefits to the region. The establishment of a regional transportation authority could enhance the unity of the region's transportation system, perhaps starting with the region's airport and transit systems. While this action recommendation is an important step in better integrating land use and transportation across the region, it is important to note that the establishment of the regional transportation authority would involve substantial time and effort across the region in laying the groundwork for its ultimate implementation.

# Chapter 5: Regional Corridors

The backbone of Central Virginia's transportation system is its network of primary roadway corridors, including Routes 29, 221, 460, and 501. In addition to developing a comprehensive set of recommended actions, one of the objectives of this study was to assess how the recommended actions might work if applied to two of the region's major corridors, Routes 29 and 460. This allowed the study team to move beyond theoretical discussions and to identify:

1. issues that might arise when the recommendations are implemented in major regional corridors
2. barriers (physical and institutional) that might arise in implementing the actions
3. initial considerations of the potential effectiveness of the actions
4. logical first steps in implementing the actions.

## 5.1 Analysis Methodology

The methodology used to "test" the recommended actions on Routes 29 and 460 was primarily a qualitative analysis based on:

- identifying how the actions would apply to the corridors;
- merging recommendations from transportation studies previously performed in these corridors;
- analyzing existing zoning and future land use plans in the corridors as they relate to both the existing roadway and to proposed transportation improvements; and
- identifying recommended changes to the existing land use patterns and/or the existing roadway system, including proposed improvements.

It is important to note that initial plans to perform more quantitative types of transportation analysis (including trip generation, distribution, and roadway operations "level of service" analysis) were amended based on the nature of the final recommended action items and the overall study process (see Appendix G for additional discussion of lessons learned and adjustments that were made to the initial study work plan).

**Applicable Action Recommendations:** Not all of the action recommendations are directly applicable to the two study corridors. The recommendations that are most applicable include the increased state emphasis on comprehensively managing primary transportation corridors (Action Recommendation 3.B) and the two recommendations related to the regional transportation overlays (Action Recommendations 1.A and 2.B). Applying these recommendations to the test corridors highlighted the extent to which various parts of existing Routes 29 and 460 reflect practices that support coordinated land use and transportation features. An example of such good practices would be having existing and/or planned development that is concentrated around key transportation access points (these are discussed more fully later in this chapter). Related to these first three action recommendations is the application of regionally consistent access management standards to all major corridors (Action Recommendation 1.D). The fifth action recommendation that is applicable to the test corridors is enhancing the level of detail of transportation improvement concepts (Action Recommendation 1.C) so that both

planners and property owners along Routes 29 and 460 can make more informed decisions that reflect both transportation and land use considerations.

**Previous Study Recommendations:** Five studies have been performed on Routes 29 and 460 within the past six years. The analysis methodology for the test corridors included merging the recommendations from these previous studies and assessing the extent to which the action recommendations reflect coordinated land use and transportation planning. A key effort with respect to the previous studies was to compile the recommendations and add them to a GIS mapping database. The studies analyzed included:

- Route 29 Corridor Management Study – Campbell County: July 2001. Performed by Region 2000 and Campbell County.
- Route 29 Corridor Management Study – Amherst County: June 2002. Performed by Region 2000 and Amherst County.
- US 460 Corridor Access Management Plan – Bedford/Campbell Counties: July 2003. Performed by VDOT.
- Route 460 Corridor Study (Bedford County from the City of Bedford to Route 811): May 2004. Performed by Region 2000 and Bedford County.
- Route 460 Corridor Study (Bedford County from the Botetourt County line to the City of Bedford): May 2005. Performed by Region 2000 and Bedford County.

**Existing and Planned Land Uses within the Test Corridors:** The study process included: 1) analyzing existing land uses based on field visits and aerial photography as well as existing zoning; and 2) analyzing proposed land uses based on locality Comprehensive Plan future land use maps. The extent to which these existing and proposed land use patterns support the integrated land use and transportation concepts described earlier in this report was then assessed.

**Recommended Changes to both Land Uses Patterns and Transportation Improvements:** The final step in the test case analysis process was to develop mapping that shows recommended changes to land uses along with proposed transportation improvements. The purpose of these recommendations was to 1) highlight the application of the action recommendations and related implementation issues, and 2) to provide a starting point for follow-on implementation of specific action recommendations. These are discussed more fully in the next section.

## 5.2 Analysis Findings and Recommendations

The analysis performed for the test corridors identified opportunities for implementing the action recommendations, provided an initial assessment of their potential effectiveness, and highlighted implementation issues and potential barriers. The analysis also provides the foundation and first steps for implementing the action recommendations (discussed in Section 5.3).

**Implementation Opportunities and Potential Effectiveness:** The test corridor analysis highlighted the importance of developing integrated land use and transportation plans

along primary corridors (Action Recommendation 3.B) based on significant disconnects between existing land use patterns and plans and the transportation system. Along most of the length of both Routes 29 and 460, both existing zoning and future land use plans typically include commercial uses running parallel to and as a "strip" alongside major transportation corridors. This practice, which is not atypical, is intended to make the most use of the transportation resource (the regional corridor), but it creates the unintended effect of promoting strip development. By adding multiple new access points, strip development effectively depletes the functionality and safety of an existing roadway. This is particularly true if full access is provided in both directions through the construction of median breaks.

The effect of the disconnect between land use and transportation in the region's major transportation corridors is that efforts to improve transportation safety and efficiency, such as access management, are counteracted by land use plans; while transportation decisions, such as existence or construction of medians, turn lanes, and traffic signals, can run counter to land use plans for more concentrated development. The test corridor analysis strongly reinforces the need for the development of the fully integrated land use and transportation plans along major primary corridors.

As indicated above, one of the key tasks in the test corridor analysis was to review previous studies on Routes 29 and 460 based on the perspective of more closely integrating land use and transportation planning. The previous studies include recommendations for both roadway improvements as well as modifications with respect to how and where land uses access the major roadway. The type, configuration, and frequency of access are recommended to be controlled by regulations, incentives, and/or disincentives that are largely implemented through overlay zoning. For example, the proposed overlay zoning includes minimum frontage requirements for driveways, minimum distances from driveways to cross-street intersections, building setback requirements, incentives for inter-parcel access, as well as other design recommendations such as consolidation of driveways. Circulation plans incorporated in these studies also suggest locations for the preservation of rights-of-way and/or clear space in order to develop parallel roadways that can accommodate local traffic while minimizing adverse impacts to traffic flow and safety on the main roadway. Analysis of the test corridors suggests that the approach used in these previous corridor studies could be more effective by not only incorporating recommendations for overlay zoning, but also by making modifications to the underlying zoning wherever possible. As indicated in the previous paragraphs, this would include assessing the appropriateness of current longitudinal strip zoning along major corridors and replacing it with more nodal zoning patterns that reflect the existing roadway system and would be closely coordinated with proposed transportation improvements.

Closely related to the integrated corridor land use/transportation plans is the action recommendation for regionally consistent access management standards (Action Recommendation 1.D). The test corridor analysis highlighted the need for the identification of key access points that are both well-spaced to promote long-term traffic flow and safety and are supportive (to the extent possible) of existing and planned land

uses, as well as the need for implementing some level access control between these key access points in order to support nodal, and not "strip" development patterns. The test corridor analysis was largely confined to broader corridor-level planning issues, so many of the more detailed access management guidelines were not tested. It is clear, however, that the cumulative and regional effect of consistent access management guidelines will provide substantial benefits on both Routes 29 and 460 and to the region as a whole.

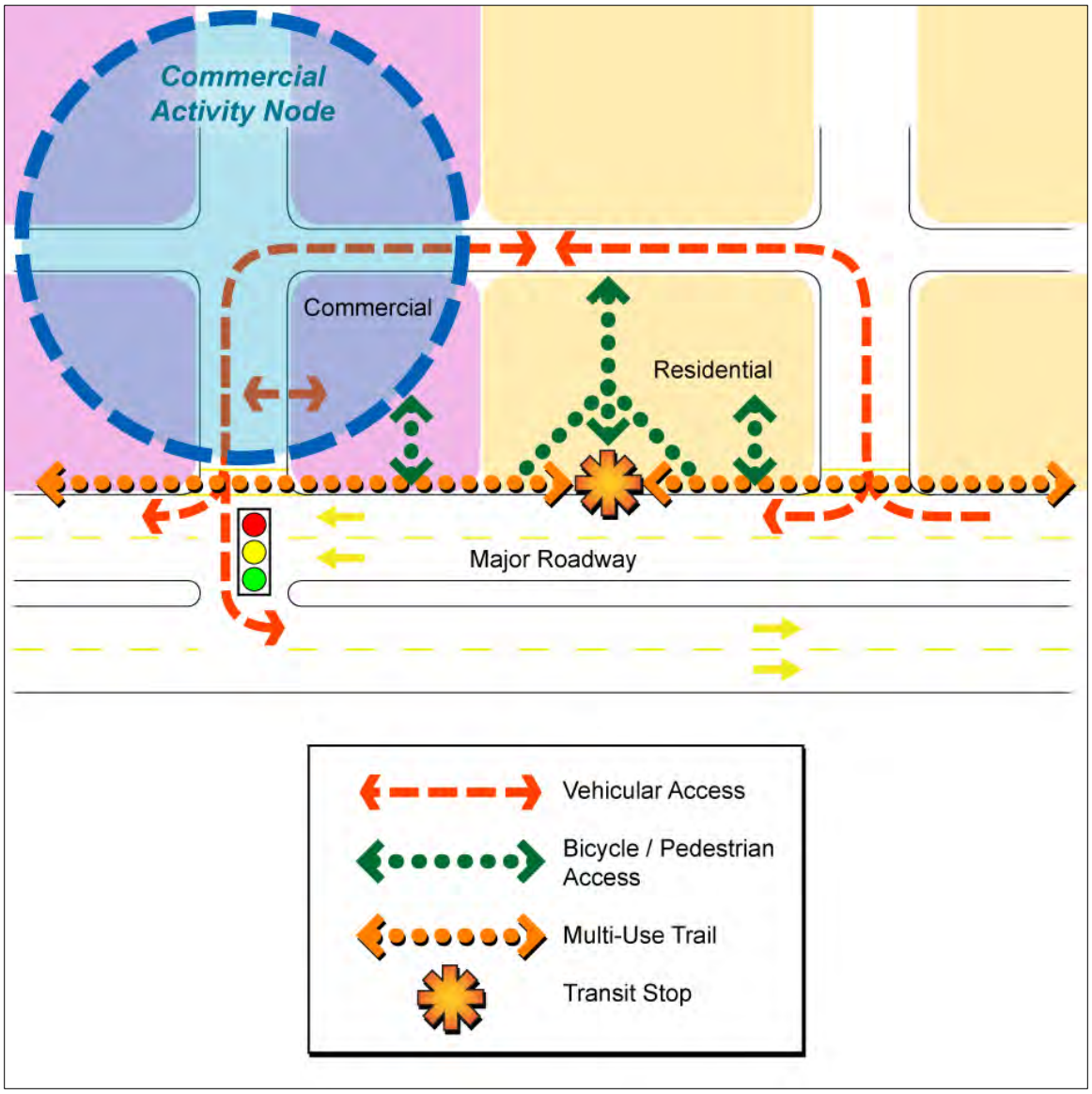
The recommendations related to developing, implementing, and using the regional transportation overlays (Action Recommendations 1.A and 2.B) were also assessed. These two action recommendations are part of several implementing mechanisms that will result in land use plans that support transportation and vice versa. The activity nodes concept not only provides for better traffic flow and safety, it also can create density clusters that could support long-term transit and/or carpooling opportunities, as well as efficient land use development patterns. The test corridor analysis also highlighted opportunities for land uses to have direct, non-vehicular access to the main roadway. The concept, illustrated schematically in Exhibit 15, is one that provides for walking and/or bicycling trails that extend from land uses that are located between major vehicle access points to the main roadway. The trails would connect to a sidewalk or trail system running along the major roadway, and/or to transit service. The concept provides direct access to trails and transit from adjacent land uses and indirect access for motor vehicles.

This same concept can also be applied effectively to village centers located along major regional corridors. Roadway access at either end of the village center would accommodate motor vehicles, while the central area, which could be more oriented to pedestrians and bicycles, would include access to regional transit service that could serve other activity centers in the region.

The importance of developing sufficient detail in planning concepts to support effective implementation (Action Recommendation 1.C) was also highlighted by reviews of the previous corridor studies on Routes 29 and 460. Detailed recommendations in the Bedford County Route 460 East Study that provided detail on the placement of access points to parcels at key locations have proven effective in structuring discussions between VDOT, Bedford County, and land owners. Putting additional detail to the broader concepts of access management resulted in their successful implementation.

**Implementation Issues and Potential Barriers:** The test corridor analysis also identified a number of implementation issues that need to be considered with the action recommendations. The process of implementing the action recommendations will require an extensive education process for elected and appointed officials, as well as ongoing efforts from locality planning staff and VDOT. The integrated corridor land use and transportation plans can serve as an example of these implementation issues as efforts to more fully integrate land use plans (including existing zoning) represent a substantial commitment on the part of local jurisdictions, and one that needs to be closely coordinated with VDOT to ensure that transportation is taken into consideration. Developing the integrated land use and transportation plans along primary corridors (Action Recommendation 3.B) will need to be an iterative process whereby zoning

Exhibit 15
**Access Concept for Major Regional Corridors**




should reflect transportation considerations, but in cases where constraints prohibit changes to the zoning, proposed improvements to the transportation system should reflect this. For example, where existing or planned land uses reflect a strip type pattern that cannot be changed, the transportation system should incorporate plans for parallel circulation routes. Most of the previous studies performed in the Route 29 and Route 460 corridors incorporate recommendations such as parallel circulation routes and/or shifts in the location of key access points to support existing land uses.

## 5.3 Recommendations

Beyond the findings discussed in the previous section, the primary product of the test corridor work effort is detailed mapping which is included with this study on a compact disc. The mapping is provided in Adobe PDF format which can be read by Adobe Acrobat Reader – this free software can be downloaded by visiting http://www.acrobat-center.com/ on the Internet).

The mapping shows generalized recommendations for land uses within the one-mile wide test case study corridor and also depicts proposed key access points that are spaced based on both existing and proposed land uses as well as access management principles. The land use designations are deliberately general to allow for some flexibility in their use and to avoid the differences between the land use categories used by the various jurisdictions. It should be noted that two categories were used for residential areas: residential area and rural neighborhood. Residential areas represent both existing neighborhoods as well as areas planned for moderate to high density residential development. Rural neighborhoods are those areas that are already have houses and so are not open space, but they are areas where additional development is not recommended nor is it supported by existing or proposed transportation improvements.

Recommendations from previous corridor studies have also been incorporated into the mapping (in a few cases, some of these previous recommendations have been slightly modified). Activity nodes that could potentially support travel by modes other than the single-occupant motor vehicle are also highlighted. The mapping used as its starting point existing land uses, zoning, and the future land use plans for each locality. The mapping represents initial recommendations that, in many cases, change existing land use plans in order to implement this study's action recommendations. It is the intent of this study that the mapping will provide the starting point for both the implementation Working Group as well as joint VDOT/locality efforts to develop detailed and integrated land use/transportation plans in the critical Route 29 and Route 460 corridors. All of the mapping has been developed in a GIS framework that can overlay on existing zoning and land use planning mapping for use by the Working Group and local planning staff.

Finally, it should be emphasized again that the test corridor mapping is not final: it represents efforts that were used to assess the action recommendations and to provide a starting point for follow-on activities.

# Chapter 6: Locality Plans

Many of the proposed action recommendations would be implemented through adoption by local governments into their Comprehensive Plans, zoning and subdivision regulations, as well as procedural changes to their planning and review processes. Mirroring the overall planning process whereby Comprehensive Plans typically first set broad policies and then zoning regulations implement the details, the study process started at the more general level of overall policies. As part of the overall study process, the study team met with each of the five localities (Amherst, Bedford, and Campbell Counties; Lynchburg; and the Town of Amherst) through monthly study team meetings, one-on-one meetings with planning staff at key milestones, as well as meetings with locality planning commissions and elected officials. The interests of each locality varied, as did the overall philosophy and level of support for particular action recommendations. This chapter first describes some of the concerns of each locality and then provides recommendations on a common starting point for all of the jurisdictions in the region.

## 6.1 Locality Concerns and Planning Efforts

The primary focus of implementation efforts by the study team was to generate discussion and gain feedback on a set of locality resolutions that expressed policy support of the action recommendations and set in motion the process for their implementation at the local level. The five resolutions, included in full in Appendix F, addressed the following:

- Resolution in support of the overall *Regional Action Plan*
- Resolution in support of regional policy statement on the roles of the public and private sectors
- Policy statement resolution on the roles of localities with respect to secondary roads
- Policy statement resolution on the roles of localities with respect to primary roads
- Policy statement resolution in support of increasing the role of the state in planning through increased support to local planning functions

Because of the wide range of feedback from the local jurisdictions, as well as concerns about the need for additional education of elected and appointed officials on the overall Action Plan, final action on these resolutions was not sought. As background, the following provides a summary of some of the key issues within each jurisdiction as well as any concerns that were expressed relative to the Regional Action Plan in general and the five resolutions in particular.

**Amherst County:** Key concerns related to transportation and land use in Amherst County relate to Route 29 through Madison Heights (now Route 29 Business), as well as growth pressures that may result from the construction of the Madison Heights Bypass (particularly at the northern end of the Bypass). While the Planning Commission was generally supportive of all of the action recommendations, the County was in the process of finalizing its Comprehensive Plan, making it difficult to focus attention on the process of implementing action plan recommendations. As with the other counties in the region,

key concerns related to Action Recommendation 3.A, which proposes increases in local government responsibility for local and secondary roads. The major concerns with respect to this issue related to its potentially far-reaching and unknown financial implications for the County.

**Town of Amherst:** Town of Amherst Planning Commissioners and Council members were generally supportive of the action recommendations, providing specifics related to the secondary roads would not result in increased financial commitments from the Town. The Town of Amherst was also in the process of developing, in cooperation with the Region 2000 Local Government Council, a detailed corridor study on the southern section of Route 29 Business. This study was directly assessing coordination between land use and transportation by looking at various development scenarios and their effect on transportation in the corridor.

**Bedford County:** As the fastest-growing jurisdiction in the region, the concept of more closely integrating land use and transportation planning is a key concern of Bedford County. In terms of this integration, Bedford County is also ahead of several other jurisdictions in the region with its overlay zoning along major transportation corridors as well as having corridor plans in place for many of the roadways (Route 460, Route 221, Route 122, Route 24). At the Planning Commission level, Bedford County was supportive of the action recommendations and, in many cases, was seeking to push forward with more detail in the recommendations. Bedford County was keen on having a greater voice in its secondary road system, but as with the other counties, Bedford was also concerned about the financial implications of Action Recommendation 3.A. Additional study was requested to determine the potential fiscal impacts to the County. Bedford County was also in the process of finalizing its Comprehensive Plan.

**Campbell County:** Campbell County is also growing rapidly and it has recently adopted overlay zoning on Route 29 to better integrate land use and transportation in that important corridor. Campbell County was, however, reluctant to proceed with adoption of the proposed resolutions without further study of the implications of implementing the recommendations.

**City of Lynchburg:** The key concern related to the shifts in responsibilities for secondary roads was not an issue for the City of Lynchburg because the City already controls its own urban roads. Planning Commissioners expressed overall support for the broad concepts of the action recommendations but were concerned about specific impacts of the recommendations on key corridors such as Fifth Street, Wards Road, Lakeside Drive, and others.

At its April 19, 2007 meeting, the Metropolitan Planning Organization (which includes elected officials from each of the jurisdictions) expressed a desire for more education for elected and appointed officials on the specific implications of the action recommendations. Based on that direction, this study recommends the formation of a regional Working Group (discussed in more detail in Chapter 7), as well as a specific program to educate elected and appointed officials on the benefits and implications of the

action recommendations. As a starting point for the Working Group, this study proposes that the implementation process include policy-level direction that would be incorporated into locality Comprehensive Plans and would reflect regional consistency, followed by implementation of details through actions that include: adoption of ordinances, changes in planning procedures, and direction to staff with respect to coordination with VDOT and other agencies. Section 6.2 describes elements that should be incorporated into locality Comprehensive Plans in order to provide a policy basis for better integrating land use and transportation, while Section 6.3 provides guidance on the process for implementation.

## 6.2 Locality Comprehensive Plans

Comprehensive Plans generally seek to provide an overall vision and general policy direction, provide guidance for decision-makers, and set broad goals and objectives for growth and the development of infrastructure within a locality. In terms of integrating land use and transportation planning, this study recommends four objectives, along with associated strategies, be incorporated into the Comprehensive Plans of each of the five jurisdictions within the study area. These are:

**Objective 1: Ensure that the safety and capacity of the transportation system is adequate to serve existing needs and to accommodate future development.**

A. Measure the impacts of new development in a regionally consistent manner by implementing the proposed *Regional Action Plan's* TICR methodology.
B. Identify needs based on existing and proposed development, including required funding. Identify potential funding sources for such funding, including potential private sector participation.
C. Seek additional planning tools to guide development and provide for adequate transportation, including adequate public facilities ordinances, concurrency laws, and enhanced zoning powers.
D. Seek flexible solutions to address transportation needs in cooperation with the private sector, including ways to address travel demands through modes other than the single occupant motor vehicle.

**Objective 2: Recognize the different functions of local and primary roads and apply appropriate tools and techniques to the management and planning for these facilities.**

A. Enhance local control of the secondary roads, either through direct management of the secondary road system or through increased coordination with VDOT, in order to more tightly manage both the demand for travel on these roads (based on new development) and the safety and capacity of the roads.
B. Apply appropriate design and level of service standards to local and primary roadways, recognizing the surrounding context of the roadways, their different functionality in terms of traffic served (i.e., local vs. regional traffic), and their roles in serving multiple modes of travel.
C. Recognize the importance of roadways as gateways to the region and its individual jurisdictions, and as public space.

**Objective 3: Plan local land use forms to maximize transportation efficiency and to support the potential for non-automotive modes of travel.**

A. Adopt and refine, as appropriate, the transportation overlays as proposed in the *Regional Action Plan*.
B. Within the transit-supportive overlays and the neighborhood/village center overlays, seek to increase densities, clustering, mixed uses, and other site design features that support enhanced levels of walking, bicycling, and transit usage (including rideshare).

**Objective 4: Increase the level of integration between transportation planning at the regional level (i.e., through the region's Long-Range Transportation Plan and other planning activities) and locality transportation and comprehensive planning.**

A. Encourage regional input with respect to the traffic impacts of major new developments. Assess the longer-term impacts of the new development and their potential cumulative impacts using tools such as the region's computerized transportation network.
B. Support the development of expanded regional databases to support enhanced transportation planning.

## 6.3 Implementation at the Local Level

The Action Plan describes an integrated set of recommendations for better integrating land use and transportation planning, and the study itself initiated a process for implementing these recommendations at the local level through discussions with locality Planning Commissions. Most of the action recommendations require some level of action by localities, whether through the adoption of new ordinances, policies, and procedures, or through resolutions supporting particular actions by other agencies or levels of government. The table in Exhibit 16 summarizes proposed locality actions with respect to each of the action recommendations. It is important to note that implementation details are also recommended to be further developed by the Working Group, which will also seek to educate elected and appointed officials. The information below is provided as general guidance on first steps in implementation. Draft resolutions for adopting/implementing proposed action recommendations are included in Appendix F.

Exhibit 16

**Summary of Recommended Locality Actions**

| Action Recommendation | Local Jurisdiction Action |
|---|---|
| **Initiative #1: More closely integrate regional long-range transportation planning and local comprehensive land use planning.** | |
| 1.A: Regional Transportation Overlays | Adopt regional transportation overlays into Comprehensive Plan; coordinate with Local Government Council to update the regional overlay mapping when Comprehensive Plan amendments are made. |
| 1.B: Establish Regional Policies on Public and Private Roles with Respect to Transportation Infrastructure | Adopt local resolution similar to Resolution II included in Section F.3. |
| 1.C: Enhance the Level of Detail in Transportation Planning Concepts in Order to Better Support Land Use Planning Activities | Locality to identify priority improvement corridors for additional design efforts to support planning. Coordinate with VDOT on developing additional design details. |
| 1.D: Apply Consistent Access Management Standards to All Major Transportation Corridors in the Region | Adopt resolution in support of access management standards described in Appendix D. Coordinate with VDOT in applying these standards. |
| **Initiative #2: Increase the region's policy and regulatory emphasis on the adequacy of transportation facilities with respect to new development.** | |
| 2.A: Implement Regionally Consistent Transportation Impact/Conformity Reviews | Adopt regionally consistent Transportation Impact/Conformity Review (TICR) process as standard County procedure. |
| 2.B: Implement Additional Checklist Review Items for Land Development That Falls Within Regional Transportation Overlays | Same as above. Incorporate checklist review into standard procedures and provide this information to Planning Commissions to support decision-making. |
| **Initiative #3: Adjust the roles and responsibilities of local governments and the state with respect to local/secondary roads and primary roads.** | |
| 3.A: Increase Local Government Responsibility for Local and Secondary Routes | Adopt local resolution similar to Resolution III included in Section F.3. |
| 3.B: Increase State Emphasis on Comprehensively Managing Primary Transportation Corridors | Adopt local resolution similar to Resolution IV included in Section F.3. |
| **Initiative #4: Increase the state's role in comprehensive planning, both through a policy-level statewide comprehensive plan as well as through the provision of services and expertise to localities on land use and transportation planning issues.** | |
| Action Recommendations 4.A, 4.B, 4.C, and 4.D related to the role of the state. | Adopt local resolution similar to Resolution V included in Section F.3. |
| **Initiative #5: Expand the region's roles and responsibilities in transportation.** | |
| 5.A: Regional Review of Transportation Impact and Conformity Reports (TICR) | Consideration, through the Working Group, of the need for and applicability of regional reviews. Localities need to consider providing funding for such functions at the regional level. |
| 5.B: Increased Transportation Planning Support for Local Governments | Locality support for such additional functions, coordination with the Local Government Council on data requirements. |
| 5.C: Advocate and Seek Funding for Implementation of Regional Blueway and Greenway Plan | Support for implementation as needed. |
| 5.D: Establish Regional Transportation Authority | Ongoing consideration through the Working Group and the political process. |

# Chapter 7: Implementation

Implementation of the initiatives and recommendations in the *Regional Action Plan* will take place at several levels, and should include participation of multiple stakeholders. Key participants include local jurisdictions (staff, appointed officials, and elected officials), VDOT and VDRPT, state legislators, and other stakeholders including the general public, business groups, developers, transportation and environmental advocacy groups, and civic and community associations. Each of these various agencies and stakeholders will have key roles in the implementation process. These are described below:

- Local jurisdictions: adoption of changes to comprehensive plans, zoning, and other planning procedures (described in Chapter 6).
- VDOT: participation with localities in developing highly integrated land use and transportation studies for major regional corridors.
- Stakeholder groups: advocating for the implementation of elements of the Action Plan.
- State legislators: advocacy for initiatives such as enhanced statewide comprehensive planning support, better overall integration of land use and transportation planning, and support for local jurisdictions in terms of enabling legislation for additional local planning tools.

One key first step is to coordinate the activities of these various groups through the formation of a regional Working Group, consisting of locality planning staff, as well as regional, VDOT, VDRPT, and GLTC staff. The Working Group will have three primary goals:

1. Continue to promote and highlight the importance of integrating land use and transportation through a process that includes education of regional leadership;
2. Prioritize the proposed action recommendations that should be addressed in the region; and
3. Shepherd the ongoing dialog and adoption of initiatives on transportation and land use within localities, the region, and at the state level.

The study process identified several key needs related to implementation, and the goals of the Working Group reflect these needs. These include an ongoing education process so that officials and various other stakeholders fully understand the potential benefits and implications of the action recommendations. Embedded in this education process is further refinement and addition of details to the broad action recommendations so that they are tailored to local needs but also continue to reflect necessary regional consistency. The following are suggestions relative to the initial charge for the Working Group to begin to implement key action recommendations:

- Work towards the adoption of regional transportation overlays and policy statements to support the overlays within local comprehensive plans.
- Seek the adoption by all localities of a regionally consistent policy statement for public/private roles in transportation.
- Work with localities and VDOT in the identification of priority improvement corridors in the region for additional design efforts to support planning.

- Working closely with both localities and VDOT, aid in the implementation of the VDOT Chapter 527 traffic impact review process and seek to incorporate the additional refinements included in Action Recommendations 2.A and 2.B.
- Continue to work with localities and VDOT, and monitor initiatives at the state level, with respect to opportunities for increased locality roles in managing secondary roads. As described in Chapter 4, increased locality roles in secondary roads have the potential to result in substantially improved coordination between land use and transportation planning, but such benefits must be weighed against the fiscal impacts to localities of such actions.
- Support the development of highly integrated land use and transportation plans along key primaries, and develop regional priorities for corridors.

# Appendix A
# Land Use and Transportation Planning Considerations

The interaction between transportation and land use planning is quite complex, not completely understood, and the subject of ongoing debate. The issues related to the interaction between the two range from different timeframes for implementation, involvement by different implementing agencies and levels of government, the extent to which the public and private sector is involved, and much more. This chapter provides background on some of the issues which are important for understanding the Action Plan's recommendations, as well as some of the issues that are anticipated to come into play as the recommendations are implemented.

## A.1 Timescale Considerations

The development of land and the construction of transportation facilities are usually on very different timeframes. A typical experience occurs when new development, such as a several hundred house subdivision, is built and it takes many years for the needed roadway improvements to be constructed. The time lag for the roadway project can sometimes be decades as it takes time for the effects of the extra traffic to be felt, for the political process to be put in motion to make the road improvement a priority, for funding to be identified, and then for necessary studies, design, and construction. A wide range of planning strategies seek to address this particular type of timing mismatch: improvements or funds that are proffered by developers, ordinances and procedures related to the adequacy of public facilities, and various financing mechanisms that allow future revenue streams to be tapped into so that needed roadways can be built immediately.

A mismatch in timing that runs opposite to the one described above, but is also an issue for integrating land use and transportation, is the lag that occurs as development catches up to new transportation facilities. A new roadway often changes land use patterns as people start making use of a new transportation facility, but the new patterns may only fully emerge after a decade or two. One could argue that much of the debate about how directly transportation affects land use may, in fact, be more related to the issue of timing than to how closely they are correlated. For example, a new highway may only be a small reason why people choose to move in the short term, but over a long enough time frame, the highway will have created a substantial change in settlement patterns. This type of timing mismatch can have a significant effect on investment in highways versus transit. Because of cost structures, it is easier to build a new highway that lies half empty for many years and wait for settlement patterns to "catch up" than it is to construct a half-utilized transit line with its much higher (and more directly quantifiable) ongoing operating costs. Historically, many streetcar companies not only built the streetcar lines but also the houses alongside the route, effectively addressing this timing mismatch issue.

One other timescale issue for consideration relates to the impacts of interim outcomes. This refers to a situation best illustrated by an example: increasing density in an area for purposes of better supporting transit or more walking. Increased density, meaning more

households per acre, increases the number of trips that are made. To simplify, doubling the number of households would add to the total number of trips, perhaps doubling it (although there is some debate about how linear this relationship is, and it is most certainly affected by other variables such as mix of land uses). At the completion or full build-out of a project, the mix of land uses, the ultimate density, and the provision of transit may create the desired mix of trips by driving, walking, and transit, but the interim outcome of higher density is simply more trips and more congestion. Opponents of higher densities can easily cite the increase in congestion as an unacceptable interim outcome.

## A.2 Geographic Considerations

Transportation, by its very nature, crosses jurisdictional boundaries. An effective transportation network serves to unite areas which may have very different land use patterns. This is particularly true for major regional corridors, which consist of the major primary highways in Central Virginia. In areas with regional transit systems, major transit routes also often cross jurisdictional boundaries. While land uses and land use patterns can also vary in how "local" they are (i.e., small village centers or neighborhoods versus large regional shopping centers), individual parcels are located within a single jurisdiction and must conform to the requirements of that jurisdiction. To varying degrees, however, the transportation impacts of the local land use decision are a regional one. The mismatch between geographic coverage, service area, and political jurisdiction creates coordination issues related to funding and tax bases, as well as reviews of transportation impacts and overall approval procedures.

Another issue is that reliance on real estate, property, and sales taxes for local funding creates competition for development between local jurisdictions. As a result, there is little incentive for regional consistency when dealing with land uses or transportation corridors. The impacts of this apply to both land use and transportation, although in different ways. Inter-jurisdictional competition can result in conflicting land uses, inconsistent transportation corridor designs and priorities, and competition between jurisdictions for all forms of development projects that can enhance their tax base and provide funding for operations. Locality revenue sharing has not been enabled by the Virginia General Assembly, so regions often experience competition between jurisdictions for employment generators and premier residential developments. Transportation corridor management plans or other regionally integrated transportation plans have to overcome this disincentive to regional cooperation. As noted at the regional planning forums held as part of this study, there can be major challenges in developing an integrated transportation plan in a region where land use plans are not integrated and vary across jurisdictional lines.

Transportation funding also varies between cities and counties in Virginia. The Byrd Road Law (Secondary Roads Act of 1932) created a highway trust fund that would serve as a fund raising and fund allocation mechanism within the Commonwealth, but the law does not apply to cities like Lynchburg, which are responsible for building and maintaining streets. From a funding perspective, this creates an urban versus rural schism

that is present in many urban areas in Virginia. Transportation funding in Virginia is primarily pay-as-you-go financing and the state has responsibility for funding for nearly all of the primary and most of the secondary roads. The recent shortfalls in transportation funding have resulted in local land use patterns where development is allowed to occur by-right in advance of the transportation investment. The competition for limited transportation funding also increases the involvement of the General Assembly in the transportation planning process. Although much of the transportation funding is allocated according to Federal funding formulas that are pre-determined, the General Assembly retains the authority to fund individual projects. This adds another layer of coordination complexity when trying to ensure that transportation investments match local land use plans.

An additional geographic issue related to locality versus regional geography is the fact that the site development review process is not traditionally coordinated across jurisdiction lines and is not required to be reviewed beyond the local jurisdiction. To some extent, this relegates regional transportation impacts to an area where responsibilities have been a somewhat ill-defined mix of the individual localities and VDOT, and an often ad-hoc coordination effort based on circumstances related to individual developments. VDOT has recently formalized regulations establishing statewide standards for traffic impact studies for projects that could have significant impacts on the state-controlled roadway system. These regulations, known as Chapter 527 (so named because the legislation establishing this process for enhancing coordination between land use and transportation planning was in Chapter 527 of the 2006 Acts of Assembly), specifically instruct VDOT to evaluate both comprehensive plans and development proposals that will affect state controlled highways. The process is being implemented over a two-year period starting in the summer of 2007.

The site plan review process also varies by jurisdiction, including whether it is required at all. Unlike comprehensive planning and subdivision regulation, site plan review by county and municipal governments is optional in Virginia. In jurisdictions that require review, a developer applying for a building permit may be required by local ordinance to submit a site plan showing the proposed development or redevelopment and the existing and proposed roadways that will provide access to the site. The local planning commission may use this review to ensure compliance with regulations contained in the zoning ordinance.

Finally, piece-meal implementation of regional priorities can also affect the ability to implement land use and transportation investments that are consistent across jurisdictional boundaries. Since the site development process is primarily conducted at the local level with primary responsibility for review and implementation at the local review stage, overriding or larger corridor and regional transportation goals may not be incorporated into the review process. This can result in leap-frog development and inconsistent corridor development patterns.

## A.3 Considerations Related to Lines of Authority

One of the key features of how transportation and land use relate to each other in Virginia is related to a mismatch in geographic scale between the two disciplines that ultimately manifests itself as a disconnect in lines of authority. The public power to control the use of land is primarily exercised by city and county officials in Virginia. This is accomplished by means of comprehensive plans, official maps, subdivision ordinances, zoning statutes, site plan reviews, capital improvement plans, and other regulatory and proprietary actions of local governments.

Control over the location and characteristics of transportation facilities, including roads and mass transit, is exercised primarily by the Commonwealth Transportation Board through the Virginia Department of Transportation (VDOT). Unlike most other states, Virginia retains control over and responsibility for almost all roads not within an incorporated city. The legal and institutional structure tends to divide the process by creating competing authority. As a Dillon rule state, localities have very little independent authority not granted specifically by the General Assembly of Virginia and several of the tools designed to integrate land use and transportation have not as of yet been enabled in all parts of the Commonwealth. For example, Adequate Public Facilities Ordinances and the use of proffers are either not allowed or restricted to use in high-growth jurisdictions.

The Byrd Road Law placed under state control all "public roads, causeways, landings, and wharves" that had formerly been under local control. The county feeder-road system, which was the largest part of the state road network in terms of mileage, was included in the roads that were taken over by the state. Thus, the state makes regional transportation decisions that affect local land use goals and objectives.

Under the Code of Virginia, localities control all land use decisions, including the location and approval of developments within their individual jurisdictions. The state retains the authority for the final approval for the location of regional transportation facilities, through the action of the Commonwealth Transportation Board and the location decision process. This can result in the mismatch between land use decisions and transportation investments, due to the decision locations that are not solely under the control of the localities. In essence, there is the potential that the actual regional transportation facility will not be located in the same location as adopted in local land use plans (although this is the preferred methodology that is usually followed).

During the state-controlled transportation decision making process, land use is assessed at the preliminary stage when local comprehensive plans are adopted and as part of the detailed corridor studies in terms of potential direct and indirect impacts to land uses. However, land use is only one component of the overall corridor assessment and not usually highlighted as a key element in the location decision, which can result in inconsistency with local land use plans (although this is rare within the Commonwealth). A lack of coordination between land use and transportation can occur at several steps in

the process and the length of the process can mean that the location decision does not coincide with growth occurring within a locality, especially in high-growth locations where development pressure is creating growth in advance of transportation facilities.

The divide between state responsibility and interest in transportation and local government responsibility for land use is also highlighted by an issue raised at the May 2006 regional planning forum by Delegate Shannon Valentine (Virginia House of Delegates representing the 23rd District). Delegate Valentine stated that presentations that are made to Virginia's legislators rarely include any discussions on the land use considerations related to transportation legislations or decisions.

Part of the state-versus-local mismatch concerning land use and transportation is currently being addressed by Virginia Department of Transportation efforts to assess major development proposals through internal traffic impact analyses. For localities, recent changes to the Code of Virginia are requiring an official transportation plan and map as part of the Comprehensive Planning process that will be developed collaboratively with the Department.

The previous issues focused primarily on the planning and decision-making barriers associated with implementing an integrated transportation and land use plan. In summary, there are barriers to developing an integrated plan not only due to local interactions, competition, etc. but also because of the structure of decision-making and authority in Virginia. In order to develop an integrated plan, a collaborative process that includes all components - land use planners, transportation planners at the local and regional level involved in the development of plans that are then coordinated fully and comprehensively with VDOT and CTB decision-makers, has to be developed.

Another issue related to different lines of authority is the limited role that regional agencies have with respect to land use and transportation. Largely due to the fact that federal transportation regulations have established a role for regions in transportation planning (particularly long-range planning), the role of regional agencies such as the Central Virginia MPO is much greater in transportation than it is in land use planning. Various regulations have expanded the MPO role in land use over the years, but this role is one that is an extension of the transportation role (i.e., requiring consideration of the area's comprehensive long-range land use plan(s), housing goals and strategies in the development of the long-range transportation plan). Under the Code of Virginia, regional agencies can develop long-range regional transportation plans and regional land use plans, but only with the collaboration of their independent local participants. They serve primarily as a collaborative planning organization, unless specifically allowed by the legislature to form a regional transportation authority. As such, regional agencies have a somewhat ill-defined role where they do not implement actual plans and can do nothing to stop land use patterns, development decisions, or transportation and infrastructure investments that may not contribute to regional goals and objectives.

As indicated above, the Central Virginia MPO is responsible for the region's long-range transportation plan. Within this role, the MPO is the primary conduit and point of

coordination for regional transportation decisions that cross jurisdictional boundaries. Regional investments must be a part of the regionally adopted, fiscally-constrained long range transportation plan in order to be implemented with Federal funding (which serves as the primary funding vehicle in the region). So, although the MPO does not have specific implementation control, it does have the responsibility to develop the regional transportation plans within the region's urbanized area.

## A.4 Considerations Related to Differing Stakeholder Goals

Land use and transportation planning are most often performed by different agencies and the planning activities for the two disciplines have differing goals. The professionals charged with developing and implementing land use and transportation plans also typically come from different training and backgrounds, with transportation professionals quite often having engineering backgrounds and land use professionals having more of a liberal arts or design background. A number of issues related to better integration of the two disciplines, therefore, revolve around the need for greater coordination in order to meld differing goals. In addition, different departments, even within single jurisdictions, are often not accustomed to working together. These different goals highlight the need for not just more points of coordination (such as monthly meetings, reporting requirements, etc.), but also changes that would be built into the missions and/or approaches of the various agencies.

Efforts to better link land use and transportation will require that several agencies or specializations need to be involved – the planning and zoning specialists, transportation planners and traffic engineering departments (often located in the public works department), and the local economic development departments. One of the benefits of the Lynchburg region is that the counties currently have generally small planning and zoning departments that are used to collaborating with VDOT, the City of Lynchburg and the region. This minimizes potential internal barriers, but only to a certain extent.

Amherst, Bedford, and Campbell Counties all have small planning staffs that consist of traditional land use planners and zoning administrators, but none have specific transportation planners or traffic engineers within the planning department and they rely on VDOT, the Local Government Council, and/or consultants for transportation analyses. Many larger government planning organizations tend to create divisions between land use and transportation planning with specialists in each discipline. Certainly one advantage of the small planning departments in Amherst, Bedford, and Campbell is that this division is not in place within the jurisdiction itself.

To illustrate some of these issues, one of the challenges of integrating land use and transportation along transportation corridors is to balance the need for an increase in traffic mobility with other land use goals such as creating aesthetic corridors, managing access, and creating walkable, transit-supportive corridors. One of the most challenging barriers to implementing coordinated plans comes up when considering typical sections – traditional twelve foot lanes are most often desired by traffic engineers to support mobility and are not considered to be the appropriate scale by planners seeking to

develop pedestrian-friendly, walkable streets. The traditional separation of comprehensive planning of land uses and overall development patterns within the planning department from the traffic engineering function that often has oversight and responsibility for transportation decisions is often a barrier to integration.

An additional institutional challenge can be economic development departments that pursue infrastructure expansions and recruit developers and development projects and may be more willing to negotiate with developers to entice them to locate within a specific locality without ensuring that their projects provide linkages between land use and transportation. The primary challenge from an internal locality coordination perspective is to arrange communication processes so that site development, transportation decisions, and land use planning efforts are linked to each other.

## A.5 Public and Private Sector Considerations

The public and private sectors play different roles with respect to land use and transportation, and these different roles affect how the two disciplines interact. As a public utility, the transportation system is largely constructed and funded by the public sector. Land development, while regulated by the public sector, is implemented by the private sector and is largely influenced by private market forces. The tension between the two sectors is encountered in a number of ways. A couple of examples illustrate some of these potential tensions:

- Assessing responsibilities for transportation improvements: Are improvements a general taxpayer responsibility or should they be paid for by the developer (and ultimately the consumer)?
- Public sector participation in development: Is it appropriate for the public sector to use transportation improvements to affect development and what are appropriate safeguards for this process?

Although localities have authority to plan and direct growth within their jurisdiction, private market forces ultimately dictate land development patterns. The result can be land use patterns that are not linked properly to transportation infrastructure. Although local comprehensive plans can plan for such transportation investments as transit corridors and mixed-use activity nodes, generally the private market has to respond to such plans in order for them to be implemented as envisioned. In some cases, the locality is forced to make tough decisions on the timing and implementation of developments that might not meet all of the planning goals, but are still laudable or allowed by right. For example, a locality may plan for increased density along a transportation corridor in order to support transit investments, but there is no guarantee that the market will respond and developers will propose projects that meet increased densities. This institutional mismatch can result in corridor inefficiencies or a piece-meal implementation of land use and transportation goals.

The second aspect of the public-private dynamic that is encountered is that of regulatory authority. Regulatory authority is guided by the political process, one in which all

aspects of society, including the development community, have a say. Many of the comprehensive plans and zoning ordinances in the Lynchburg region as currently adopted cannot accommodate the kinds of land use controls, transportation initiatives, or design criteria usually incorporated into integrated land use and transportation plans. For example, land use controls such as zoning ordinances and subdivision regulations that separate land uses will need to be re-written to allow for mixed-use developments, and resistance to making changes to existing regulations and procedures (zoning, subdivision regulations, proffer guidelines, etc.) means that planners may not have the tools necessary for integrating land use and transportation.

# Appendix B
# Public/Stakeholder Involvement

## B.1 Schedule of Meetings

The public and stakeholder coordination process included three regional planning forums, monthly meetings with the region's Transportation Technical Committee (TTC) and/or the study committee (consisting of planning staff from each of the five jurisdictions included in the study), individual meetings with jurisdiction planning staff and/or planning commissions, and public meetings. A listing of meetings and dates is included below. The remaining sections in this appendix include summaries of the regional planning forums.

Regional Planning Forums:

- May 17, 2006
- September 28, 2006
- March 29, 2007

Public Meetings:

- June 29, 2006
- October 26, 2006

Central Virginia Metropolitan Planning Organization (MPO)

- April 19, 2007

Locality Planning Staff

- August 25, 2006 – Amherst County
- August 25, 2006 – Town of Amherst
- August 29, 2006 – Campbell County
- August 30, 2006 – City of Lynchburg
- September 21, 2006 – Bedford County
- February 6, 2007 – Bedford County
- February 7, 2007 – Amherst County

Locality Planning Commissions

- October 23, 2006 – Campbell County
- October 30, 2006 – Amherst County
- November 1, 2006 – Town of Amherst
- November 6, 2006 – Bedford County
- December 20, 2006 – Town of Amherst
- February 21, 2007 – Bedford County
- February 26, 2007 – Campbell County
- March 1, 2007 – Amherst County
- March 7, 2007 – Town of Amherst
- March 19, 2007 – Bedford County
- April 4, 2007 – Town of Amherst

- April 11, 2007 – City of Lynchburg
- April 18, 2007 – Bedford County

Study Committee/Transportation Technical Committee

- April 6, 2006
- July 13, 2006
- October 12, 2006
- January 23, 2007
- March 22, 2007
- April 5, 2007

## B.2 Summary of May 2006 Regional Planning Forum

Virginia's Region 2000 Local Government Council is undertaking a regional study to better integrate land use and transportation planning in Central Virginia. As one of the first steps in this study, a regional planning forum was held at the Ramada Inn Conference Center in Lynchburg on May 17, 2006. The forum began at 9:00 a.m. with informal conversations and review of display materials on land use and transportation planning concepts. At 9:30, Bob White from the Local Government Council welcomed the approximately 70 attendees. Lynchburg Vice-Mayor Joan Foster provided opening remarks highlighting the importance of this study to the region and noting that one of the challenges of the study will be to connect two areas that have traditionally been the responsibility of different levels of government. She noted that, in Virginia, land use planning is the responsibility of local governments while most of the transportation system is the responsibility of a state agency, the Virginia Department of Transportation.

Mr. White then introduced the facilitator for the forum, Charlie Zucker. Mr. Zucker reviewed the purpose of the forum and the agenda. The expert panel members also introduced themselves:

- Alex Marshall, published writer on subjects of urban planning and development issues.
- Benjamin dela Pena, Associate Director at the Smart Growth Leadership Institute.
- Kenneth Mobley, AICP, urban land use and transportation planner with the Parsons Corporation

Mr. Zucker then posed a set of questions to the panel. A summary of responses to the questions follows:

**Question #1: What is the role of state vs. the region vs. the local authorities in linking land use and transportation and what challenges or potential conflicts will there be as we start this process?**

<u>Response Notes:</u>

Mr. Marshall:

- Land use is generally the focus of individual jurisdictions at the very local level while transportation has more of a regional focus.

- Mr. Marshall believes that, over the long term at least, land uses will follow transportation improvements. Zoning, planning, and growth management are very difficult when transportation infrastructure is put in places that ultimately work against growth management goals. Transportation decisions are essentially fingers and land uses grow around them.
- Different types of transportation development influence how areas develop: Lynchburg began with the port on the James River, with development growing around the port. Then came the train, which led to another type of development pattern. Finally came the highways, with yet another development pattern.

Mr. dela Pena:

- Land use planning is local, but transportation decisions made at a regional level often effectively circumvent the local plans. For example, in Rapid City, South Dakota, a regional project to build a bypass around the city to provide direct connections to Mount Rushmore has caused the city to lose substantial tourist revenues.
- Corporations and other companies usually make location decisions by looking at regions at a whole, rather than individual localities. Regional planning, therefore, makes sense also in terms of attracting employment and other economic development.
- Local governments need to think on a larger scale, with bigger roles for regional government and/or cooperation.

Mr. Mobley:

- In general, there is a trend towards more regionalism with more decisions being made at the regional level.
- To ensure appropriate levels of consistency across multiple jurisdictions, as well as some level of conformity with transportation plans, many states have put in place mechanisms whereby local and regional plans are approved and/or adopted at the state level. In some areas, the approach is one of "state-down" planning.
- This is not currently the approach in Virginia, although the Kaine administration is pushing for state review of comprehensive plans (to ensure coordination with transportation planning).

Mr. Zucker then asked panelists to comment on where improved coordination between land use and transportation planning has worked. Mr. Mobley cited as an example areas where regional transportation authorities have been created, as well as metropolitan areas that have implemented urban growth boundaries. The specific example of Portland, Oregon was citied – this is a region that has done substantial regional planning to link development with major transit corridors.

Mr. Zucker then noted that in places where there are fewer levels of government (such as Arlington, Virginia which is an urban county that functions as both a city and a county),

tying land use and transportation decisions together is often easier. The issues certainly become more complex when multiple governments need to find common goals and solutions.

**Question #2: What are some of the tools and strategies that have worked elsewhere for managing land use impacts on transportation?**

Response Notes:

Mr. Mobley:

- Density bonuses for various features such as densities, multi-modal features and/or connections
- Zoning that is both sensitive to efficient transportation and provides flexibility to support efficient transportation
- Local and/or regional identification of target land use areas (growth boundaries, major employment areas, etc.)
- Transit Oriented Development (TOD)
- Transfer of development rights
- Travel demand management, transit incentives, measures to support walkability such as mixed uses, appropriate densities, support for dynamic and interesting streetscapes
- Maryland has identified priority funding areas to help rank investments and promote.

Mr. Marshall:

- New Jersey designates centers for growth – localities get extra money when planned growth is located in these areas
- Promoting growth around stations along existing transit lines
- Lynchburg needs to identify existing opportunities and build on them.
- Mr. Marshall highlighted his belief that the question of managing transportation based on land use is somewhat backwards – over the long term, it is transportation that affects land use more significantly

Mr. dela Pena:

- It is important to leverage investments in both transportation and land use so that the benefits and efficiencies of both are maximized
- Mr. dela Pena described the example of Douglas Foy, who has been successful in bringing transportation and housing professionals together to develop effective plans
- Mr. dela Pena also described the importance of citizen groups that can very effectively lobby local governments, agencies, and other stakeholders for regional approaches to integrated transportation and land use planning

**Question #3: What choices will participants, localities, etc. need to make as the process moves forward?**

Response Notes:

Mr. dela Pena:

- Choose what you want to target, make a plan and work to make sure that development is directed where you want it.
- Collaborative review of existing comprehensive plans and don't be afraid to revise if necessary.

Mr. Mobley:

- Look at the urban form described in local plans and how they fit together.
- Make decisions on transportation, including crucial decisions on which travel modes to support, and then develop plans and procedures, which include land use planning, to support these decisions
- It is important for the region to work together in this process

Mr. Marshall:

- It important to ensure that zoning is in place to support your goals

Mr. dela Pena:

- Local governments in the region need to work together to identify what type of place the region should be.

Mr. Marshall:

- Develop priorities and identify how to get there
- Determine what you want to put up with as a locality
- You will also need to decide what issues are better left unsolved as sometimes the "solution" could hurt the character of the neighborhood and/or the region

Mr. Mobley:

- Mr. Mobley described a shift in thinking in the planning profession that he experienced based on his attendance at a recent American Planning Association conference. The idea that roads are multi-modal transportation corridors as well as public space has resulted in thinking about wider rights-of-way combined with narrower roads (allowing more space for non-roadway uses).

Mr. Marshall:

- There are worse things than congestion – Mr. Marshall stated that when a bypass is constructed, businesses in downtown areas lose substantial amounts of business

Mr. Zucker commented that land planning is much more than simply where we place different uses on a map – we often do not consider the myriad of issues that affect land uses such as zoning, housing, businesses, densities, transportation, water/sewer, etc. Mr. Zucker also highlighted that when planning what to do, we should also look at what we

are not going to do. For example, decisions about various land uses are both about where the land uses should go and where they should not go.

Mr. Zucker then took questions from the audience.

**Audience Question: What new values are emerging and what are the driving forces?**

Mr. dela Pena:

- There are currently some major changes in demographics that are going to make big differences in how we need to plan. These changes include overall population increases, as well as increases in average age of the population. Mr. dela Pena cited a Virginia Tech study that indicated that 40 percent of all buildings that will be on the ground in 2050 are not yet built. We need to be plan for where all of these new buildings will go.
- Trends also show major increases in the number of households, particularly single-person households. Even over a short horizon to 2010, we can anticipate close to 20 percent increase in the number of households. Many of these households will consist of older folks.
- With the increase in seniors, demand for walkable and transit oriented communities will increase
- Overall, trends show younger population wanting to move close to the city where things are happening. This can be illustrated by popular TV sitcoms – in the 1950s the top sitcoms were based in the suburbs (Father Knows Best, Leave it to Beaver, etc.), today they are based in cities (i.e., Friends)
- Other key trends include increases in fuel prices – a trend that is likely to continue based on growing global demand for energy
- Increases in national levels of obesity as well as increased health consciousness are other key trends. People are discovering that driving everywhere is not healthy.

Mr. Mobley:

- The green (environmental) movement is a key trend, and new technologies are emerging that are making green solutions increasingly realistic in terms of costs.
- Decreased levels of public funding and fiscal conservatism are also key trends. Today, in many parts of Virginia, many major transportation projects are being built with private funding (through developer proffers) rather than state capital funding.

Mr. Marshall:

- People are re-thinking the benefits of living in the suburbs. It used to be that living in the suburbs meant getting more property for your money – today it often means that you are spending more time in traffic congestion.

Mr. Zucker:

- There seem to be trends for people seeking to be more connected with others, and this extends to young and old alike. There also seem to be increased desires for healthier, more active communities (examples like Boulder, Colorado with community-based and healthy activities such as hiking, biking, kayaking, etc.).
- There also seems to be an overall trend towards green communities, and localities that are looking at revising their existing zoning in order to reduce the total number of vehicle trips.

Mr. dela Pena:

- Noted that in suburban settings, the typical mother takes seven trips a day by car taking children to various activities.

**Audience Question: The existing population of the Central Virginia area is 150,000. Can you relate strategies that can happen in an area of this size?**

Response Notes:

Mr. Mobley:

- Aggressive reinvestment in downtown
- Art movement
- Streetcar system
- Various modal options can be explored
- A similarly sized community is Winston-Salem, North Carolina. This community faced a major challenge when RJ Reynolds moved out, creating a need for major redevelopment.

Mr. dela Pena:

- Highlighted the need for the region to identify an overall model or vision of what the community should look like.

Mr. Mobley:

- Other example communities include Boulder, Colorado (developed plan for preservation of open space and parking management); Chattanooga, Tennessee; and Knoxville, Tennessee.

Mr. Marshall:

- Reiterated that Chattanooga is a good example.
- Salt Lake City, Utah is also an example of a good regional visioning exercise. In Salt Lake City, they identified where they were, explored different options, selected an option, determined how to implement changes, and developed transportation and land use zoning to support it.

Mr. Zucker:

- Also indicated that Chattanooga is a good example and noted that this community had a lot of local foundation (a private entity) to support changes.
- Also indicated that Boulder, Colorado provides a somewhat extreme example through their policy of levying a tax to purchase open space in surrounding counties in order to preserve viewsheds of the mountains.

**Audience Question: If transportation is more of a state responsibility and land use decisions are more of a local responsibility, how can transportation decisions be made that better take into account existing and future land use?**

Response Notes:

Mr. Marshall:

- The state needs to take a greater interest in land use decisions

Mr. dela Pena:

- One potential tool is for the state to have key individuals participate in sessions like the Governor's Institute of Community Design workshop. This workshop explores how community and transportation issues work with land use, housing development, preservation, etc.

Mr. Mobley:

- Another example is the Pennsylvania Governor's Task Force on Land Use and Transit.
- The Florida Department of Transportation doesn't prescribe solutions, but they look at regional land use impacts and work with localities as part of the planning process.

Mr. dela Pena:

- It is important to have a strong local vision. Knoxville has such a strong vision which was able to overcome a very fragmented governing structure (which is complicated further by the powerful quasi-governmental Tennessee Valley Authority).

**Audience Question: There are a number of constraints for implementing actions to better tie transportation and land use (and even for land use decisions alone) based on the separation of cities and counties in Virginia, tax structures, etc. How do we remove, mitigate, or work within these constraints?**

Response Notes:

Mr. Mobley:

- Regionalism is key in terms of marketing a region for economic development, so one approach would be to use this goal as the basis to form stronger regional partnerships that address both land use and transportation issues.

Mr. dela Pena:

- One key aspect of regional planning is the issue of revenue sharing. Without revenue sharing, true regional cooperation on issues like land use and infrastructure investments is difficult.

**Audience Question: Why were soils topography and natural resources of the region left off the land use maps?**

Response Notes:

Mr. Zucker:

- This information is being used as part of the study, but was not presented today to avoid information overload. Overlays showing all of the various issues and potential constraints are being developed.

Mr. dela Pena:

- A key task for planners is to locate and identify all of the various issues and constraints. For example, open space plans are created based on the identification of key areas for preservation.

**Audience Question - *Shannon Valentine, Delegate, House of Delegates, Transportation Committee*: Ms. Valentine indicated that VDOT regularly attends and makes presentations to the House Transportation Committee, but that land use planners are not heard from at these meetings. Governor Kaine has made it a priority to better integrate transportation and land use planning – it seems like simply including discussions of land use and land use implications when making presentations to state legislators would be an important step. Actions like this are an important step in generating changes in thinking about these issues.**

Response Notes:

Mr. dela Pena:

- It is important for the legislature to be informed about the full range of issues. The success of efforts to integrate land use and transportation planning will depend on leadership at all levels of government.

Mr. Mobley:

- VDOT is doing more land use analysis than they used to (and their involvement will expand substantially within the next 6 months) so they should be including land use discussions to a greater extent. It is important, however, that localities are fully involved even with respect to presentations to the General Assembly.

Mr. Zucker:

- Traditionally, one of the difficulties is that transportation service can be quantified so it is easy to present (particularly to those who are trained in engineering), but quality of life is qualitative and is difficult to distill

down to concise presentations. We haven't figured out a way to quantify quality of life in the transportation planning process.

**Audience Comment: The fact that the Charlottesville area is not building a bypass on Route 29 is hurting Central Virginia. That is an issue that needs to be addressed.**

**Audience Question: The issue of development in the center city versus sprawl is often one related to revenue for various jurisdictions. How do you equalize revenues to address the imbalances that affect where development is approved?**

Response Notes:

Mr. dela Pena:

- Developers come in and gauge environmental impact, taxes, and other costs in order to make decisions based on what is the most economical. It is important, therefore, to target particular areas and ensure that they are financially more attractive than sprawl. One potential concept is to shift the emphasis of property taxes more to buildings and other improvements and away from the actual property.

Mr. Mobley:

- Regional revenue sharing requires that a separate entity be created to manage the financial and legal logistics.

Mr. Marshall:

- The state should pay an active role in managing relationships within major regions.

**Audience Comment/Question: Virginia currently uses its power to prohibit annexation.**

Response Notes:

Mr. Marshall indicated that this hurts cities in Virginia.

**Audience Comment/Question: Central Virginia is currently exploring regional partnerships with respect to solid waste planning. Please comment on this level of regional cooperation in terms of how it might affect land use and transportation.**

Response Notes:

Mr. Marshall:

- Chicago is a good example – they created a regional government entity many years ago for solid waste planning.

Mr. dela Pena:

- The issue of defining regions is an interesting one. For example, the California regional system is based on the definition of watersheds.

Forum participants were then divided into five break-out groups. Groups were asked to discuss what they heard from the expert panel and to answer several questions. The questions and the summaries of the break-out groups' responses are included below:

**What did you hear in the expert panel discussion that merits additional discussion? Why?**

- The notion of compact communities and/or clustered development is a good one and worth investigating further.
- It is important to identify and protect regional resources, including existing neighborhoods, historic and community resources, recreational resources, and open space.
- It is important to explore and address the mismatch between local and state responsibilities as they relate to transportation and land use.
- Regional cooperation is very important and needs to be emphasized. Regional revenue-sharing needs to be considered as a very important component of regional cooperation.
- The region should establish priority areas for various types of land uses. Development should be targeted to particular areas.
- The region needs to emphasize economic development and attract industry. Transportation at a regional level is very important in attracting new jobs.
- The region may need to consider a paradigm shift in terms of attracting economic development – focus less on building and more on quality of life.
- There needs to be closer cooperation with Roanoke as well. This could address needs for "super-regional" mobility between these two areas; also provide an emphasis for Lynchburg accessibility to Interstate 81.
- Changing national and local demographics will certainly have an effect on both land use and transportation; we need to plan for these changes.
- The region also needs to focus on enhancements to the communication system, including high-speed Internet access.
- Overlay districts to maintain and enhance the transportation functionality of major corridors is important. Because corridors cross jurisdictional boundaries, these overlay districts need to extend across jurisdictional lines.
- There needs to be a regional vision for urban form. Ongoing coordination between jurisdictions to develop and implement actions to support this vision for urban form is needed.
- The region has major mobility and connectivity needs both north-south (north to Charlottesville and beyond to the northeast corridor, south to Danville and North Carolina) and east-west (east to Richmond and Tidewater, west to Roanoke and I-81).
- Over the long-term, transportation does affect the urban form and transportation decisions need to be made recognizing this fact.
- Utilities such as public water and sewer also have a major effect on the urban form (how areas develop).

**What are current trends with respect to land use and/or transportation in the Central Virginia region? What do you like and dislike about these trends?**

Current Positive Characteristics and Trends in Central Virginia

- The region has a rural character without feeling like a "backwater community" (support for current incentives to retain this characteristic).
- Overall approval of the region as it is; there is a strong need to develop actions to maintain the region's positive qualities.
- Traditional, mixed-use neighborhood developments such as Wyndhurst.
- Growth in Downtown Lynchburg; there is a relatively high demand for downtown residential.
- There seems to be an increased emphasis on streets (which are more community oriented, more human scale) rather than highways.
- Rural roadway projects are being developed in a way that is more sensitive to the surrounding areas (context-sensitive).
- There is an increased awareness that the region is inter-connected and that issues cross jurisdictional boundaries.
- Good planning in Bedford County.
- More sharing of revenues from VDOT to localities.
- More infrastructure (roads) built by localities at the local level.
- More overall interest in ridesharing.
- There is an increased level of awareness about preserving open space in the region.

Current Negative Characteristics and Trends in Central Virginia

- Loss of rural areas, productive farmland, forests, and other open space to housing and transportation; fragmentation of forest lands.
- Big box retail being built on land that was previously farmland.
- Does not seem to be an overall plan for concentrating land uses and preserving open space.
- Bedford County's growth is not being supported by new schools and other public services.
- Taxes on residential land uses do not pay the full cost of services for residential areas.
- Concern about aging housing in the region, particularly in the central parts of the region.
- Competition between jurisdictions for jobs.
- Need for increased industry and employment in the region. Concern about the high percentage of service jobs, also a concern about the permanence of jobs (i.e., jobs that can be passed onto the next generation).
- Lack of connections to the global economy. The relative lack of transportation connections in the region (such as a complete bypass, lack of limited access highway, i.e. interstate highway, connections, etc.) prevents additional industry from locating in the region).
- Absentee ownership of major businesses.
- Lack of regional cooperation with respect to leadership and decision-making.

- Suburban sprawl in the region; fragmentation of the region; isolated and disconnected residential and commercial development (leap-frog development).
- Increase in strip development along regional roadway corridors.
- Need to increase the densities of development in the region.
- Increased separation between where people live and work (work here, live there). The trend is for increased separation between where jobs are located and where employees are. A particular concern is lower-wage employees live in the City and new jobs are being created in the counties. We need to have jobs where we live.
- Too oriented to the automobile: not walkable, lack of sidewalks and trails in neighborhoods, commercial areas, and between areas.
- Need for more and better transportation in the region.
- Lack of coordination at regional level.
- There are system and structural components of local jurisdiction governance (and how they are defined at the state level) that prevent regional cooperation.
- Annexation created divisiveness; preference is for revenue sharing and increased regional cooperation.
- Need instruments and incentives for increased regional cooperation. Individual jurisdictions need to think more regionally and accept their roles in the region.
- Lack of a state agency for land use planning.
- Attracting and keeping business in the region will require increased regional cooperation. Models for regional cooperation include the development of community colleges in the 1960's as well as the region's current efforts with jails and solid waste management.

<u>Other Comments or Characteristics and Trends for Which No Opinion Was Expressed</u>

- The size of subdivision developments in the region is getting bigger (more units per development).
- Overall growth in the region appears to be accelerating.
- There is a large amount of development and development pressures in the Smith Mountain Lake area.
- Affordable housing (both the overall affordability of the region as well as the need for additional affordable housing for lower income groups).
- Subdivisions and other development will go where there is water and sewer infrastructure.
- Some problems are best left unsolved because the impacts or consequences of the solutions are worse than the problem; make sure that we are not creating a situation where we have "a solution looking for a problem".
- Look and plan for the long-term (30 to 40 years out).
- Develop a consensus vision for the region.
- Most jobs in the region are from small businesses. Need to identify if this trend will continue and work with it.
- Regionalism is also a factor when it comes to school funding.
- Zoning decisions need to take into account effects on neighborhoods.

- The trend towards expecting government to try and solve everything is a concern. Plans from this study need to counter trends towards always bigger government and more top-down regulation.
- Need to consider regional planning but also recognize the autonomy of individual jurisdictions.
- Need to consider differences in the Comprehensive Plans for each jurisdiction – they present different options for growth in the region. Ideas need to be shared across jurisdictions, plans need to consider the regional perspective.
- The attitude in the region, and across the state, is that land uses are planned and there is then the expectation that transportation will then be provided – transportation planning is reactive.
- The provision of water and sewer infrastructure is not coordinated with Comprehensive Plan goals (this was cited as being the case in Bedford County). The installation of utilities seems to drive growth – shouldn't it be the other way around? Or at least coordinated?
- As an overall state issue, who is driving change with respect to regional issues? Local governing bodies and planning commissions? State and federal agencies seem to be the ones requiring regional issues to be discussed (i.e., MPO requirements with respect to transportation) rather than it coming from the localities up.
- Planning commissions need to work with local utilities boards and commissions to ensure that planning issues are always considered. The expansion of utilities results in conflicting interests at the local government level. Planners, governing bodies, utility commissions, and the private sector are not appropriately coordinated (and directed to established plans and goals) in these infrastructure decisions.

**What are your expectations for the region? What are the implications of your expectations for the region in terms of land use policy and transportation investment and how do we get there (strategies, investments, policies, etc.)?**

<u>Expectations</u>

- Overall high quality of life.
- Preserve rural areas.
- Compact urbanized area; prevention of sprawl.
- Clustered development, suburban development in specific areas with commercial development in specific activity centers along major transportation corridors.
- Increase in the amount of low-impact development in the region.
- Walkable communities. A comprehensive trail system that is integrated into the region's overall transportation system.
- Improved education.
- Better guidance on development from local governments (zoning, etc.).
- Improved regional communication and cooperation.
- Improved transportation mobility. Areas of particular concern include the Route 221 corridor and the Wards Road corridor (both major retail corridors and retail growth areas).

- Balance between improved mobility and the impacts of transportation projects.
- Better geographic balance in region of jobs and housing; people live closer to where they work.
- The region will continue to grow. The Lynchburg region will be the next "cool place" to live in Virginia and more people will move here. A particular focus will be on encouraging younger people to stay in the region.
- The region will continue to have a good environment and a high quality of life.
- Don't see this region as becoming a large metropolitan area (in reference to the TV show Friends TV show example provided earlier by Benjamin dela Pena).
- Preserve positive economic growth.
- Complementary zoning between localities; zoning that works for the region.
- Regional planning for industrial parks.
- There will be substantial development pressures at key interchanges on the roadway system and at some of the new interchanges of the Madison Heights Bypass.
- Wider awareness of the needs of seasonal/college students and a recognition of their importance in the community.
- Education of the public on the impact of planning decisions (i.e., current plans do not mean that the region will have big smoke stack industries).
- A higher awareness of the connection between development, the cost of land, and the cost of services to support development (particularly in more remote areas).
- The population growth of the area should be slowed down.
- We need to preserve the small-town feel of the area.
- A vibrant downtown Lynchburg.
- Reduction in urban blight.
- More non-vehicle connections in the region (bicycle and pedestrian trails).
- Ensure an adequate supply of housing for people of all income levels.
- An expanded public transportation system.
- Increased access management on the region's major corridors to preserve safety, functionality, and esthetics.
- High standards for the natural environment: clean air and water, better management of natural areas.
- Better distribution of state funds across the Commonwealth.
- Demand for public transportation will increase as gas prices continue to increase. Regional cooperation will play a big role in an expanded public transportation system.
- The transportation system provides a sense of place and can provide a sense of continuity. For example, the corridor consisting of Route 29 Business in Amherst County to Route 163 (Fifth Street, Fort Avenue, Wards Road) would be designated as a single "Grand Corridor" and gain an identify from that. Landowners and small businesses should be encouraged to participate in identifying and developing these corridors.
- The region will build on the number of higher education institutions and increase the richness of its educational environment (model on the Research Triangle in North Carolina). This could include both colleges and high schools such as the Governor's School.

Strategies

- Define a regional vision and then follow up with the hard steps to attain the vision.
- Clustered development, nodal development in "rural village centers" and in neighborhood clusters in the more urban areas. Increase use of planned development zoning to support cluster development.
- Need to show the positive economic impact to all localities of good land use and transportation planning. Good planning benefits all communities and there are substantial mutual benefits from working together.
- Reducing congestion should not be the only purpose of transportation planning; preservation of quality of life is equally or more important.
- Preservation of rural areas. Focus on infill development throughout the region to preserve rural areas. Counties should upzone in particular areas to support this.
- Look at redevelopment of older neighborhoods (particularly 30 to 40 year old neighborhoods) and assess the transportation needs to assist in revitalizing these neighborhoods (both the micro-transportation concerns within the neighborhoods as well as multi-modal transportation connections to the region).
- Regional cooperation through designation of regional committee structure. A regional agency of some kind (such as a regional transportation authority) would be needed to take the lead in this. Have quarterly or annual regional meetings, as well as comprehensive plan coordination meetings.
- Revenue sharing should be part of regional cooperation. Revenue sharing leads to better cooperation in land use and transportation planning.
- Consolidate government services throughout the region.
- Identify and quantify infrastructure costs for all areas so that decision-makers have full information on the costs of sprawl-type development.
- Encourage more public-private partnerships.
- Provide increased government guidance (zoning, total costs of different development types, traffic impact studies, transportation options, etc.).
- Increase accessibility to Central Virginia from other parts of Virginia, the US, and the world.
- Need a serious dialog on passenger rail service throughout Virginia (for example, east-west accessibility via road or rail through Central Virginia – to Richmond and Roanoke).
- Match jobs to affordable housing and provide the right type of transportation.
- Construct additional affordable housing outside of the City of Lynchburg to allow for better regional geographic balance between affordable housing and low/moderate income jobs.
- Increase the amount of circumferential transportation in the region.
- Make sure all modes of travel (driving, transit, walking, biking, etc.) are considered. Diversify travel options in this region.
- Manage growth to preserve open space. Tools could include cluster zoning, encouragement for dense development along with incentives to preserve open space. Implement the use of transfer of development rights (TDR) and purchase of development rights (PDR).
- Improved accessibility to Smith Mountain Lake.

- While the local and regional plans should match up in key areas, it is important to recognize the differences between jurisdictions (Bedford County cited in particular).
- Encourage additional community involvement as this is a key to success.
- Funding issues need to be addressed: better coordination with VDOT on expending limited funds, identification of new funding sources, lobbying for additional funds, creative approaches.
- Need to create "places" within the region (towns, activity centers, neighborhoods and neighborhood clusters, etc.).
- Require environmental impact analyses for new development and transportation improvements. Make changes to some of the information that is provided to decision-makers when they decide on land use or transportation issues.
- Have a consistent regional approach to developer proffers for infrastructure improvements.
- Implement incentives for low-impact development.
- Make sure to consider the impacts and needs of colleges in the region and the needs of younger folks.
- Address key transportation corridor issues: 1) preserve existing zoning and setback requirements on Route 460, 2) convert Route 29 into an interstate highway, 3) implement TransDominion passenger rail to connect Lynchburg to other major metropolitan areas (perhaps seek a shorter-term rail connection to Charlottesville.
- Consider using existing rail spurs for transit connections.
- Expand public transportation.
- Increase the level of public participation in local government; make government more truly representative.
- Avoid reliance on too much regulation to create changes. Use measures like tax incentives to promote infill revitalization and discourage sprawl.
- Seek to quantify the costs of the infrastructure investments that support/promote sprawl and quantify the fiscal benefits (based on minimizing water, sewer, transportation infrastructure) of more compact development patterns.
- Encourage more mixed-use development and take this further by incorporating transportation features (walkable, incorporate trails, extension of bus service, etc.).
- Provide incentives for infill development (i.e., reduced taxes).
- Make sure that commercial interests are brought to the table as part of the land use and transportation planning process.
- Look at the roles of various stakeholders: localities, VDOT, other state agencies, the state legislature, as well as the timing of various decisions and how they can relate better.

Between the two break-out sessions, Joe Springer presented a slide show summarizing existing regional land use and transportation characteristics, as well as a summary of current projections to the year 2030 that form the basis for the existing regional transportation plan. There were several questions posed by the audience following the presentation:

**Do future projections reflect reduced availability of gas and/or substantial increases in the cost of gas?**
Response: The travel demand model assumes that the cost of gas will be similar to today (adjusting for inflation). Changes to these assumptions may change travel demand forecasts.

**Why don't the map overlays show hospitals, assisted living senior housing, etc.?**
Response: This data is being used for the study, but in the interests of avoiding data overload at this first study meeting, it is not shown. Later meetings will include this data to assist in developing and refining study recommendations.

At the conclusion of the forum, several individuals made closing comments:

Bob White from the Region 2000 Local Government Council thanked all for attending and highlighted several key items that he was taking away from the session:

- Delegate Valentine's statement about needing to present information about land use issues/impacts when transportation information is presented to the House of Delegates Transportation Committee. The connection between land use and transportation needs to be made at all levels of government and disconnects like the one highlighted by Delegate Valentine are important and need to addressed.
- Quality of life in Central Virginia is clearly a very high value and everyone in the room agreed on the importance of preserving and enhancing it. The Central Virginia community functions well today. Ensuring our high quality of life in the future is a key challenge for the Central Virginia community.

The forum facilitator, Charlie Zucker, made several concluding observations:

- It is very important that the region focus on cooperation both across jurisdictions ("horizontal cooperation") and within jurisdictions ("vertical cooperation") to make the integration between land use and transportation work.
- It is very clear that transportation cannot be looked at in isolation – it is at the very heart of the land use and development process.
- The internal conflicts that this region are and will continue to experience are not unique. Look to other areas for lessons about what works and what doesn't work.
- Central Virginia is going to grow and it is very clear that you want to maintain the region's quality of life. It is important to identify what you want to preserve so that you can work towards that.

Members of the expert panel made the following observations:

<u>Alex Marshall:</u>

- Regional cooperation is truly important because a pattern of fragmentation with respect to land development and the transportation system tends to reflect similar fragmentation of governments.
- The level of dialog and conversation shared today at the forum was very impressive and an excellent start.

Mr. dela Pena

- The forum pointed out that, at the regional level, there is consensus about the obstacles that exist with respect to better integrating land use and transportation planning. The group of stakeholders represented at today's forum should make a commitment to continue getting together as a group and coordinating to achieve the goals of better land use and transportation planning.

The consultant project manager, Joe Springer, also provided some concluding comments:

- There were many discussions relative to the region's quality of life and other assets. It is important that the region seek to manage these resources through good land use and transportation planning rather than simply exploit them with things like strip development, loss of open space, etc.

The forum concluded at approximately 2:30. Participants will be notified about follow-on meetings.

## B.3 Summary of September 2006 Regional Planning Forum

Virginia's Region 2000 Local Government Council is undertaking a regional study to better integrate land use and transportation planning and to develop a list of action items that will serve as tools for local jurisdictions. As a follow-on to the regional planning forum that was held in May 2006, the September 2006 forum focused on reviewing the recommendations from the working draft of the *Regional Action Plan for Integrating Land Use and Transportation* and seeking input from forum participants in refining these recommendations. To assist in informing the discussions, the panel of national experts that attended the May forum was invited to return.

The forum was held on September 27, 2006 from 9:00 a.m. to 12:00 noon at the Ramada Inn Conference Center on Odd Fellows Road. As stated above, the overall goal of the forum was to review and refine the working draft of the *Regional Action Plan for Integrating Land Use and Transportation*. The forum began with a welcome by Mr. Bob White of Virginia's Local Government Council, followed by introductions by the expert panel, study team, and forum participants. Mr. White also provided a brief discussion on the purpose of the forum. The forum facilitator, Mr. Charlie Zucker, then presented an overview of the agenda.

Joe Springer, the consultant team project manager, then provided a presentation that included the following:

- Study purpose
- Study objectives
- Process used to develop initial recommendations
- Description of the action items being considered for inclusion in the *Regional Action Plan*

The proposed action items were organized into eight broad categories, and are described in the discussion below.

**Regional-Scale Urban Form and Transportation:** includes the development of regional overlays that identify and include recommendations for:

- transit-supportive areas (based on existing and future densities)
- key inter-modal connections
- neighborhood and village center locations
- rural preservation areas
- re-development areas.

Other features for consideration included implementing new communications and tracking technologies on transit service within the region, enhanced tailoring and flexibility of transit services, enhancement of regional ride-share and park-and-ride, consideration of car-sharing services, expansion of the regional trail system, continued support for the TransDominion Rail Service, and increased management of the impacts of transportation (such as traffic calming).

**Regionally Consistent Development Review:** includes the implementation of standardized traffic impact study requirements across the region, as well as qualitative assessments of new development that is tied to the overlays described in the previous paragraph.

**Corridor Management and Design:** includes a regional emphasis and consistent approach to access management; regionally consistent signage and treatment of major transportation corridors; support for transit service on major corridors; bicycle, pedestrian, and public space amenities; as well as overlay zoning along corridors.

**Site Design Guidelines:** including site features to support walking and bicycling, support for transit-oriented design features, as well as connections to projects in the region's Blueway and Greenway Plan.

**Regional Cooperation/Coordination:** incorporates regional support for localities on traffic impact studies; expansion of regional committee structure to include land use issues; enhanced intra-regional cooperation with Charlottesville, Roanoke, Danville; and ensuring that land use issues are incorporated into transportation presentations that are made to the General Assembly. Longer-term recommendations in this category include a regional transportation authority and regional revenue-sharing.

**Public/Private Coordination:** includes the development of mapping that can highlight for the development community areas where development is most appropriate based on transportation and other infrastructure; encouragement of public/private partnerships and flexibility in transportation financing that can be used to leverage appropriate private investment; development of private transportation management associations; and encouragement of land use and transportation advocacy groups within the community.

**Local and State Policy Changes:** includes the development of transportation concept plans to higher levels of detail to support land use planning; increased flexibility in how transportation funds are allocated and expended; identification of improved communication mechanisms at the policy level between land use decision makers and state-level transportation decision-makers; enhanced consideration of transportation (particularly transit) when locating government buildings; improved coordination within jurisdictions between land use and infrastructure planning and decision-making; identification and mitigation of existing barriers to higher-density and transportation-efficient development; and changes to the process used to develop the region's Long-Range Transportation Plan in order to explicitly address land use, quality of life, and demographic issues.

**Planning "Toolkit":** includes the implementation of additional planning tools for local governments (some of which would require enabling legislation at the state level). Some of these tools could include: transfer/purchase of development rights, transfer/purchase of access rights, split-rate taxation, adequate public facilities ordinances, concurrency statutes, concurrent rezoning, form-based codes, impact fees, level of service standards, regional natural preservation standards, incentives for transportation-efficient development, incentives for development in targeted areas, and incentives/bonuses for higher-density, low-impact development.

The general discussion was preceded by commentary from the expert panel. Panel members included:

- Tom Wright, Executive Vice President of the Regional Plan Association (a not-for-profit regional planning organization that improves the quality of life and the economic competitiveness of the New York-New Jersey-Connecticut region through research, planning, and advocacy)
- Benjamin dela Pena, Associate Director at the Smart Growth Leadership Institute.
- Kenneth Mobley, AICP, urban land use and transportation planner with the Parsons Corporation

Mr. Mobley:

- The draft recommendations include substantial emphasis on regional overlays, but the effectiveness of these layers for planning purposes depends to some extent on the detail and quality of the information upon which the layers are based. As the process moves forward, there will be a need to effectively match land uses and densities to appropriate transportation features.
- The Florida Development Review process for large-scale projects is similar to what is being suggested in the draft recommendations (the TICR process).
- There is a question with respect to how the transportation overlay zones would be enforced (sticks vs. carrots)? What happens to individuals developing in the area who fail to meet the criteria?
- Regional coordination with corridor design – In order to develop an effective corridor plan, it is important that transportation and land use (including open space components) be developed in a collaborative process.

- Increased levels of coordination between agencies and between local and state governments are within the reach of what can be achieved on a short-term basis.

Mr. Wright:

- The draft recommendations are quite comprehensive in nature and well organized.
- It is very important to coordinate land use and transportation early in the planning process – if not coordinated early, it is very difficult to bring them together later (i.e., when transportation projects are advanced and/or land use plans or development site plans are already prepared).
- The process of actually implementing the regional overlays needs to be looked at closely – a step back to look at the implementation process is needed at some point.
- Public input and dialog throughout the process of implementing the action items is critical.
- Mixed use zoning and other items in the planning "toolkit" are good tools, and it is appropriate to move forward in enabling and establishing these tools early in the implementation process.

Mr. dela Pena:

- Emphasized that the pathway to success is go get community consensus first and then work out the technical aspects. Experience has shown that most processes attack the technical side first and then the process stalls or falls apart when it is brought back to the community.
- Highlighted that the first step is to create a regional vision, where to put things where not put things. This requires a community visioning process.
- Highlighted the need for civic participation as the Action Plan is implemented – if the public isn't involved you will find that you might well run up against a wall.
- In Virginia, it is a positive sign that Governor Kaine was a mayor so he is in tune with local government issues. The downside, however, is that the governor in Virginia has a very limited time to accomplish his vision (in this case, his vision for better integration of land use and transportation).

Mr. Zucker:

- Highlighted as an example a recent weeklong day visioning charrette done in Prince George's County, Maryland where the community came in for presentations and open working studios to give their input on the planning process. Results included rezoning the area.

Audience Question/Statement

- VDOT is well represented at this forum, but the Department of Rail Public Transit should also be stakeholders in this process.
- Please give some examples from other states on land use coordination at the regional level and this might work local tax structures.

Mr. Wright:

- There is property tax sharing in Minneapolis and St. Paul. New development in either of the twin cities provides tax benefits to both communities. This has been one way the region has addressed issues related to the construction of big box retail at jurisdiction borders.

Mr. Mobley:

- In Pennsylvania, an MPO looked at the counties, boroughs, townships within its boundaries in terms of urban form and transportation in order to better inform the regulatory and planning process. A two-year effort result in the development of a land development allocation approach for the jurisdictions in the region.

Follow-Up Audience Question: What drove that allocation process?

Mr. Mobley:

- The need to meet regulatory requirements.
- Acknowledgement that the process needed to work for everyone.
- Clear benefits to the localities.
- Constant challenges to keep momentum going.

Follow-Up Audience Question: Was there a push for this from the state level?

Mr. Wright:

- State participation is critical.
- Two other examples include New Jersey where the key issue was traffic and Cape Cod where the key issue was drinking water supply. Four key factors are needed to get high-level regional cooperation. They are: 1) a strong regional identify, 2) emergence of some kind of threat (such as a fiscal crisis), 3) emergence of regional leadership, and 4) creation of public and private regional institutions upon which to build.

Question: Virginia is a Dillon Rule state. What is needed at the state level to carry out these recommendations? What do you do when you have conflicting visions in the region – for example, plans to develop higher-density housing areas might be accepted in one jurisdiction but not another?

Mr. dela Pena:

- The visioning process can't be a one-time effort, it has to be continuous. It can be a difficult process, but it is important to get conflicting visions out in the open.

Mr. Mobley:

- There needs to be the ability to do land use and transportation planning at the regional level so that measures such as revenue sharing can be fully explored.
- If planning and administrative tools are not allowed by the state, then lobbying efforts need to focus on gaining the necessary enabling legislation.

Mr. dela Pena:

- Some of the key planning tools that need to be enabled at the state level include transfer of development rights (TDR) and purchase of development rights (PDR).
- States can often also participate financially by using discretionary funds to support good land use planning.
- Coordination at the state level (between agencies) is also important. An example is the Massachusetts Office of the Commonwealth which brings different agencies together to support the conservation of lands.

Audience Comment: Some of the jurisdictions along the Route 460 corridor have adopted corridor plans for things like access management and land use controls (i.e., corridor overlay zoning). The challenge that VDOT faces is that they can help localities achieve the visions when they have been developed, but when such visions have not been developed, VDOT implements based on current minimum roadway and access design standards. Local jurisdictions need to tell state what they want and if the guidelines should be more restrictive.

**Break Out Session**

During the break out session, the eight categories of proposed actions were assigned to six tables and the group was directed to split up and sit at the table they were interested in discussing. A list of action items was given to each table, and the groups were asked to first respond to a list of general questions, and second, to prioritize their action items. The session was followed up with a short presentation from each group.

Group #1 - Regional Land Use/Transportation

- The group supported the idea of regional overlays, which would then also be identified in the comprehensive plans for each jurisdiction.
- Neighborhood village overlays are important and a good idea.
- Support a regional ride share program.
- Car-sharing, however, is not likely to work in an area such as Central Virginia based on the population, density, and size of the market.
- Bicycle and pedestrian trails serve recreational travel, not trips with specific purposes and destinations.
- Ways to steer development to areas where transportation is adequate are important, as is continued discussion of traffic management systems

Group #7 – Changes in Local and State Policies

- A major hurdle in integrating land use and transportation is the lack of a statewide transportation/land use policy – this should be a top priority.
- Another priority is the need to identify ways to create incentives for the region to work together.
- The concept of developing transportation plans to a higher level to better support land use planning is also a good one, would rank it as second in terms of priorities.

- A third priority would be to identify and mitigate existing barriers to higher density development (i.e., existing zoning, public involvement process, etc.). Also, an analysis of current settlement patterns (and current trends) as compared to long-term infrastructure costs would be useful.
- Other important items in the draft recommendations include: increased flexibility in spending transportation funds (i.e., between different modes, different roadway types, to support multiple goals, to leverage private funds, etc.), and enhanced communication between state and local government agencies.
- The group believed that the issue of locating government offices in transportation-efficient locations was a low priority.

Group #5 – Regional Cooperation and Coordination and #6-Public/Private Coordination

- This group believed that regional revenue sharing is a key regional issue with respect to land use and transportation planning, and that pursuing the concept was worthwhile.
- The group also noted that legislation does not currently allow for a regional transportation coordinator position (the position could not be funded through current state/federal planning funds).
- Supported the inclusion of land use discussions in all transportation presentations to the General Assembly.

Group #3 – Public/Private Coordination

- The group noted that there must be adequate incentives for public-private coordination efforts to work. The state can also play a role in facilitating more public-private coordination (through such mechanisms as PPTA – the Public/Private Transportation Act of 1995).
- The group noted that efforts to provide developers with information on where development should be located (based on transportation and other infrastructure considerations) would not work well without regional revenue-sharing in place.
- Private organizations such as Lynch's Landing (downtown Lynchburg) should continue to be supported. They can get more involved in transportation through such activities as parking management and ride sharing.

Group #3 – Corridor Management and Design

- The region should consider using a consistent road name for the region's major corridors such as Route 29 as they pass through multiple jurisdictions.
- Increased use of modern roundabouts as opposed to traffic lights is recommended.

Group #2 – Development Review

- It is very important to have regionally consistent development reviews.
- There is a need for input on new development from all parties, agencies, locals and the public. Consideration could be given to weekly advertisements in the local newspaper containing information on new development in the region.
- The group also noted the importance of ensuring that increased requirements for development review don't unnecessarily bog down the process and hurt economic development in the region.

Group #8 – Planning "Toolkit"

- Adding more items to the land use planning and regulatory toolkit for local governments needs to be done in the context of an extensive and open public involvement process so that the public understands the potential of these additional tools. State and local governments need to work more closely than they have in both implementing these tools and in encouraging broad public input.
- The toolkit should probably vary by type of jurisdiction. For example, the tools that Lynchburg needs are different from what would be needed in the surrounding counties.
- The group believed development impact fees should be considered, as well as the transfer of development rights (TDR).

Wrap up – the Panel was asked to comment on what they heard.

Mr. dela Pena:

- Suggested that the community involvement process include regional visioning.
- Noting the multiple comments on increased public input, Mr. dela Pena stated that public involvement requires substantial outreach – newspaper advertisements are rarely enough to bring out a sufficient number of people. It is also important to involve younger members of the community – if not, this population segment is more likely to move away later on.
- Consistent participation throughout the process by multiple stakeholders is critical for implementation. Planners and other technical staff provide information on the technical process, while leadership is crucial for getting things done. Involvement from the outside community (business, activists, general public) is critical for identifying conflicts and concerns and coming up with resolutions.

Mr. Wright:

- Noted that there seemed to be a consensus in the group as a whole about the elements that are needed, but follow-up with a comprehensive approach is critical.
- Involvement by the state in the process is also very important.
- Suggested that the region decide on some quick hits of those actions that seem to be consensus priorities and work to start the process of implementation.

Mr. Mobley:

- Mr. Mobley noted that he heard consensus from the group with respect to the need for increased regional cooperation. Making this happen will require the development of an overall philosophy for regionalism, agreement on the need for regional consistency (i.e., in traffic impact studies), and also a focus on fiscal considerations (i.e., regional revenue sharing).

The forum ended with some general discussion about next steps in the process. Mr. Springer noted that some jurisdictions in the region seem ready to start implementing some of the ideas in their comprehensive plans, and that the study team would be meeting with the individual jurisdiction planning staff and planning commissions over

the course of the next few months to discuss some of the specifics. The study team will also be looking at some of the specifics of the recommendations as they apply to the test corridors of Route 29 and Route 460. Finally, the study team will be looking at commonality in what the jurisdictions are looking for in terms of final action items and priorities. A follow-on regional forum is slated for the March/April 2007 timeframe.

The forum concluded at approximately 12:00 noon.

### B.4 Summary of March 2007 Regional Planning Forum

The third and final regional planning forum was held on March 29, 2007 at Lynchburg City Hall. The purpose of the forum was to review the final draft of Action Plan recommendations and to solicit input on these recommendations. The forum convened at 3:00 p.m.

Mr. Bob White from Virginia's Local Government Council opened the forum by welcoming everyone. He briefly described the study's purpose and the overall study process and asked everyone to introduce themselves. He then turned the presentation over the Mr. Joe Springer from Parsons. Mr. Springer then reviewed the recommendations of the Regional Action Plan. His presentation included the following:

Purpose of the study, which is to coordinate land use and transportation planning in order to:

- Increase efficiency of the transportation system
- Promote/preserve high quality of life
- Continued economic development
- Safe and effective transportation system for all modes

Overall objectives of the study, which were to:

- Make the best use of existing transportation system, minimize overall travel, and support transit
- Develop land uses and transportation that serve the entire region over the long-term, promote efficient land use patterns (i.e., jobs-housing balance)
- Increase mobility options
- Preserve open space
- Provide better and more complete information for decision-makers and stakeholders
- Promote transportation-efficient economic development in the region
- Reduce/mitigate negative impacts of transportation
- Improve/preserve operations, safety, and multi-modal functionality of major transportation corridors
- Develop and implement tools that support better coordination between land use and transportation

The process used to develop and analyze/assess various recommendations:

- Development of an initial listing of possible action items, based on:

    - Input from Long-Range Transportation Plan
    - Research on what is being done elsewhere
    - May Regional Planning Forum
    - Input from the Transportation Technical Committee and local jurisdiction meetings
- There were over 90 individual action items in initial listing
- The recommended final actions seek to:
    - Focus on items directly related to the inter-relationship between land use and transportation
    - Emphasize immediate- and short-term actions

Review of the recommended action items, including (note that these are all described fully in Chapter 4 of this report):

- Regional overlays for transportation-related land use features
- Regionally consistent transportation impact and conformity reviews
- An increased role for the region
- Enhanced and regionally consistent transportation corridor management and design
- Enhanced transportation-related site design features
- Procedures for increased levels of transportation design to support planning
- Regional cooperation/coordination

Mr. Springer then opened up the forum to discussion, asking participants specifically if they could support the recommendations. Major discussion items included:

- questions and comments related to specifics of the recommendations;
- comments that the study team needed to consider differences between the jurisdictions within the study area;
- questions about where some of the recommendations had been implemented and the levels of success that had been experienced in these other locations.

In general, forum participants supported the recommendations and no specific comments were received indicating that any of the recommendations should be removed from consideration.

Following the presentations and open discussion, participants were invited to review mapping of the Route 29 and Route 460 corridor which highlighted the recommendations as they are applied to these major regional corridors. Participants were provided with markers and asked to include comments and suggestions directly on the mapping. These comments were incorporated into the final mapping included in Appendix F of this report.

The forum was adjourned at 5:00 p.m.

# Appendix C
# Cash Proffer Guidelines

One of the tools available to local jurisdictions to assist in providing sufficient resources for transportation improvements is the cash proffer. Cash proffers offset the infrastructure demands of increased development that occurs as a result of a rezoning or zoning map amendment. As with all proffers, cash proffers are voluntary and are guided by strict guidelines that are set by the state's enabling legislation. The need for the cash proffers, and the amount of such proffers, must be based on the impacts of the rezoning, and it must have a reasonable relationship to the rezoning. Cash proffers are guided by Virginia Code §15.2-2297. Based either on current levels of decennial population growth of 5 percent or more or the fact that they are contiguous to areas with such levels of growth, each of the jurisdictions in the study area currently qualifies for implementing cash proffers based on existing state law.

Cash proffers can be used to offset the costs of schools, libraries, community centers, water and sewer extensions, fire and rescue, transportation, and other public facilities. Cash proffers can apply only to improvements that are included in an officially adopted capital improvement program. Jurisdictions that have implemented cash proffers have developed regulations and guidelines on the amount of cash proffers based on detailed calculations that estimate, on a per-unit basis, the funds required to offset the impact of the rezoning or zoning map amendments. The guidelines provided in this appendix include (1) requirements and restrictions for cash proffers based on the Virginia state code, (2) a discussion of the methodology for estimating guideline amounts for cash proffers, and (3) implementation considerations. While proffers can apply to a range of public facilities, the emphasis of the discussion here is on transportation.

## C.1 Cash Proffer Requirements

As indicated above, cash proffers are guided by Virginia Code §15.2-2297 (which is included at the end of this appendix). The following summarizes key requirements:

- Cash proffers are voluntary and are a one-time occurrence (at the time of rezoning).
- Rezonings or zoning map amendments must give rise to the need for cash proffers.
- The amount of the cast proffers must have a reasonable relationship to the rezoning. They should represent the new development's fair share of capital needs. Proffers cannot be used to pay for existing facilities.
- Cash proffers apply to off-site public facilities – these public facilities must conform to the locality's Comprehensive Plan and must be included in the Capital Improvement Program. Cash proffers are <u>not</u> a cash contribution to the locality.
- Locality ordinances with respect to cash proffers should include specific procedures for applying funds to the construction, site work, engineering, right-of-way acquisition, survey, or utility work on the work for which the

cash payments were proffered. Funds must be applied to such work within seven years of receiving the cash payment. If such work does not begin within a reasonable amount of time, the funds should be forwarded to the Virginia Department of Transportation for direct allocation to the secondary or urban construction programs.

- Cash payments may be used for alternative capital improvements to the one(s) for which the proffer was made provided they are in the same locality, of the same type, and in the vicinity of the improvements for which the cash payment was made. When using the cash payments for alternative improvements, the entity that made the cash payment must be notified and a public hearing must be held.
- Cash proffers may apply to rezonings of any kind. They are, however, most typically applied to residential rezonings as this type of development increases population which forms the basis for additional needs with respect to schools, parks, etc., as well as the ultimate basis for most new trips (home-based trips represent the largest share of new trips).

## C.2 Guidelines for Estimating Cash Proffers -- Transportation

In order to ensure that the amount of the cash proffers have a reasonable relationship to the rezoning, it is important to have a careful and well-documented process for estimating guidelines for the cash proffers. The process should include quantification of the demands on infrastructure, as well as the cost of the infrastructure. A general process is described below. It is important to note that the process described below is generalized – each jurisdiction is likely to have specific characteristics and issues that need to be considered.

1. Estimate total annual roadway capital costs. This should include the VDOT secondary road budget and/or urban system budget as well as projects within the locality's capital improvement program.
2. Estimate vehicle-miles traveled (VMT) on roadways that are covered in the VDOT secondary/urban road budget and the locality's capital improvement program (this excludes primary roads) based on VDOT count data and roadway inventory information. Relate these estimates to trips generated by residential units in the locality (single family and other) by using the most recent estimates from the Institute of Transportation Engineers Trip General Manual of the average weekday vehicle trip ends for single-family and other residential (these rates are approximately 9.6 and 6.6, for single-family and other residential, respectively). Adjustments should be made to both trip end factors and average trip length factors in order to relate VMT on locality roads (based on VDOT count data) to the number of single-family and other residential units within the locality.
3. Calculate the average trip length for single-family and other residential in terms of VMT.
4. Calculate the roadway capital costs per VMT by dividing total annual roadway capital costs (step 1 above) by the estimated VMT.

5. Calculate the capital cost per trip by multiplying the roadway capital costs per VMT by the average trip length (as adjusted in step 2 above).
6. Calculate the gross cost per residential unit by multiplying the average number of trips per residential unit by the capital cost per trip.
7. Calculate the credit per household by estimating the funds from property taxes that would pay for transportation (based on the percent of locality transportation capital improvements that are paid by jurisdiction-wide property taxes).
8. Calculate the net cost for transportation per residential unit by subtracting the credit per household (step 7) from the gross cost per residential unit (step 6).

## C.3 Implementation Considerations

While more and more localities in Virginia are implementing cash proffer guidelines, less than 30 percent of those eligible have actually done so. The November 2006 *Report on Proffered Cash Payments and Expenditures by Virginia's Counties Cities, and Towns 2006-2006* indicates that only 42 of 141 eligible localities in Virginia reported any cash proffer activity during fiscal year 2006. Of the amount collected across the state, over 35 percent went to roads and other transportation improvements, with school improvements as the next highest category (at 31 percent).

While cash proffers provide local jurisdictions with one method of paying for needed infrastructure improvements, the establishment of a cash proffer system by local governments can be controversial, and this controversy may partially explain its use by only 30 percent of eligible jurisdictions. The real estate and construction industry are frequently opposed to cash proffers, citing increased costs on already expensive housing, and unfair burdens on new housing that can stifle economic development and growth. It is important therefore, that the process of considering cash proffers be an inclusive activity that involves the real estate and building industries and that the process of developing guidelines include substantial public involvement and education.

One other concern with cash proffers is that the burden of the cost of proffers (which are passed on to home buyers) is unfairly borne by only those developments that require rezoning (by-right development does not trigger the rezoning process). Current legislation does not provide for localities to impose overall impact fees or apply the proffer guidelines to conditional zoning. Note that if one of the intents of implementing cash proffer guidelines is to encourage more development that follows existing zoning by discouraging rezoning, then this disadvantage can actually be viewed as an advantage and a tool to encourage increased adherence to existing zoning.

One other impact of cash proffers is the fact that jurisdictions can feel that they are at a competitive disadvantage if neighboring jurisdictions do not implement similar systems. This suggests that adoption by all jurisdictions in the region, and a regionally consistent approach, of proffer guidelines would be beneficial (although it is important to note that individual proffer guidelines must be based on the unique features, including capital costs, transportation requirements, etc. of each jurisdiction).

## C.4 State Enabling Legislation (Virginia Code Annotated §15.2-2297)

*A. A zoning ordinance may include and provide for the voluntary proffering in writing, by the owner, of reasonable conditions, prior to a public hearing before the governing body, in addition to the regulations provided for the zoning district or zone by the ordinance, as a part of a rezoning or amendment to a zoning map; provided that (i) the rezoning itself must give rise for the need for the conditions; (ii) the conditions shall have a reasonable relation to the rezoning; (iii) the conditions shall not include a cash contribution to the locality; (iv) the conditions shall not include mandatory dedication of real or personal property for open space, parks, schools, fire departments or other public facilities not otherwise provided for in § 15.2-2241; (v) the conditions shall not include a requirement that the applicant create a property owners' association under Chapter 26 (§ 55-508 et seq.) of Title 55 which includes an express further condition that members of a property owners' association pay an assessment for the maintenance of public facilities owned in fee by a public entity, including open space, parks, schools, fire departments and other public facilities not otherwise provided for in § 15.2-2241; however, such facilities shall not include sidewalks, special street signs or markers, or special street lighting in public rights-of-way not maintained by the Department of Transportation; (vi) the conditions shall not include payment for or construction of off-site improvements except those provided for in § 15.2-2241; (vii) no condition shall be proffered that is not related to the physical development or physical operation of the property; and (viii) all such conditions shall be in conformity with the comprehensive plan as defined in § 15.2-2223. The governing body may also accept amended proffers once the public hearing has begun if the amended proffers do not materially affect the overall proposal. Once proffered and accepted as part of an amendment to the zoning ordinance, the conditions shall continue in effect until a subsequent amendment changes the zoning on the property covered by the conditions. However, the conditions shall continue if the subsequent amendment is part of a comprehensive implementation of a new or substantially revised zoning ordinance.*

*B. In the event proffered conditions include a requirement for the dedication of real property of substantial value or construction of substantial public improvements, the need for which is not generated solely by the rezoning itself, then no amendments to the zoning map for the property subject to such conditions, nor the conditions themselves, nor any amendments to the text of the zoning ordinance with respect to the zoning district applicable thereto initiated by the governing body, which eliminate, or materially restrict, reduce, or modify the uses, the floor area ratio, or the density of use permitted in the zoning district applicable to such property, shall be effective with respect to such property unless there has been mistake, fraud, or a change in circumstances substantially affecting the public health, safety, or welfare.*

*C. Any landowner who has prior to July 1, 1990, proffered the dedication of real property of substantial value or construction of substantial public improvements, the need for which is not generated solely by the rezoning itself, but who has not substantially implemented such proffers prior to July 1, 1990, shall advise the local governing body by certified mail prior to July 1, 1991, that he intends to proceed with the implementation of such proffers. The notice shall identify the property to be developed,*

*the zoning district, and the proffers applicable thereto. Thereafter, any landowner giving such notice shall have until July 1, 1995, substantially to implement the proffers, or such later time as the governing body may allow. Thereafter, the landowner in good faith shall diligently pursue the completion of the development of the property.*

*Any landowner who complies with the requirements of this subsection shall be entitled to the protection against action initiated by the governing body affecting use, floor area ratio, and density set out in subsection B, unless there has been mistake, fraud, or a change in circumstances substantially affecting the public health, safety, or welfare, but any landowner failing to comply with the requirements of this subsection shall acquire no rights pursuant to this section.*

*D. The provisions of subsections B and C of this section shall be effective prospectively only, and not retroactively, and shall not apply to any zoning ordinance text amendments which may have been enacted prior to March 10, 1990. Nothing contained herein shall be construed to affect any litigation pending prior to July 1, 1990, or any such litigation nonsuited and thereafter refiled.*

*Nothing in this section shall be construed to affect or impair the authority of a governing body to:*

*1. Accept proffered conditions which include provisions for timing or phasing of dedications, payments, or improvements; or*

*2. Accept or impose valid conditions pursuant to provision 3 of § 15.2-2286 or other provision of law.*

*(1978, c. 320, § 15.1-491.2; 1982, c. 293; 1990, c. 868; 1997, c. 587; 2001, c. 703; 2006, c. 450.)*

## C.5 Sample Ordinance Wording (previously considered by Campbell County)

**Sec AAA: Additional conditions and cash proffers as part of rezoning or zoning map amendment.**

(a) Notwithstanding any contrary provisions of §YY of this Code or of VA. CODE ANN.§15.2-2297, a zoning ordinance may include and provide for the voluntary proffering in writing, by the owner, of reasonable conditions, prior to a public hearing before the Board of Supervisors, in addition to the regulations provided for the zoning district or zone by the ordinance, as a part of a rezoning or amendment to a zoning map, provided that (i) the rezoning itself gives rise to the need for the conditions; (ii) the conditions have a reasonable relation to the rezoning; and (iii) all conditions are in conformity with the comprehensive plan as defined in VA. CODE ANN.§15.2-2223. Reasonable conditions shall not include, however, conditions that impose upon the

applicant the requirement to create a property owners' association under VA. CODE ANN.§55-508 et seq. which includes an express further condition that members of a property association pay an assessment for the maintenance of public facilities owned in fee by a public entity, including open space, parks, schools, fire departments, and other public facilities not otherwise provided for in VA. CODE ANN.§15.2-2241; however, such facilities shall not include sidewalks, special street signs or markers, or special street lighting in public rights-of-way not maintained by the Virginia Department of Transportation. The Board of Supervisors *may* also accept amended proffers once the public hearing has begun if the amended proffers do not materially affect the overall proposal. Once proffered and accepted as part of an amendment to the zoning ordinance, the conditions shall continue in effect until a subsequent amendment changes the zoning on the property covered by the conditions; however, the conditions shall continue if the subsequent amendment is part of a comprehensive implementation of a new or substantially revised zoning ordinance.

Reasonable conditions may include the payment of cash for any off-site road improvement or any off-site transportation improvement that is adopted as an amendment to the required comprehensive plan and incorporated into the capital improvements program, provided that nothing herein shall prevent the **{{jurisdiction}}** from accepting proffered conditions which are not normally included in a capital improvement program. For purposes of this section, "road improvement" includes construction of new roads or improvement or expansion of existing roads as required by applicable construction standards of the Virginia Department of Transportation to meet increased demand attributable to new development. For purposes of this section, "transportation improvement" means any real or personal property acquired, constructed, improved, or used for constructing, improving, or operating any (i) public mass transit system or (ii) highway, or portion or interchange thereof, including parking facilities located within a district created pursuant to Title 15.2 of the Code of Virginia. Such improvements shall include, without limitation, public mass transit systems, public highways, and all buildings, structures, approaches, and facilities thereof and appurtenances thereto, rights-of-way, bridges, tunnels, stations, terminals, and all related equipment and fixtures.

No proffer shall be accepted by **{{jurisdiction}}** unless it has adopted a capital improvement program pursuant to VA. CODE ANN.§15.2-2239. In the event proffered conditions include the dedication of real property or payment of cash, the property shall not transfer and the payment of cash shall not be made until the facilities for which the property is dedicated or cash is tendered are included in the capital improvement program, provided that nothing herein shall prevent **{{jurisdiction}}** from accepting proffered conditions which are not normally included in a capital improvement program. If proffered conditions include the dedication of real property or the payment of cash, the proffered conditions shall provide for the disposition of the property or cash payment in the event the property or cash payment is not used for the purpose for which proffered.

(b) In the event proffered conditions include a requirement for the dedication of real property of substantial value, or substantial cash payments for or construction of substantial public improvements, the need for which is not generated solely by the

rezoning itself, then no amendment to the zoning map for the property subject to such conditions, nor the conditions themselves, nor any amendments to the text of the zoning ordinance with respect to the zoning district applicable thereto initiated by the Board of Supervisors, which eliminate, or materially restrict, reduce, or modify the uses, the floor area ratio, or the density of use permitted in the zoning district applicable to the property, shall be effective with respect to the property unless there has been mistake, fraud, or a change in circumstances substantially affecting the public health, safety, or welfare.

(c) The provisions of subsection (b) of this section shall be effective prospectively only, and not retroactively, and shall not apply to any zoning ordinance text amendments which may have been previously adopted. Nothing contained herein shall be construed to affect any litigation pending prior to July 1, 1990, or any such litigation nonsuited and thereafter refiled.

Nothing in this section shall be construed to affect or impair the authority of a Board of Supervisors to:

1. Accept proffered conditions which include provisions for timing or phasing of dedications, payments, or improvements; or

2. Accept or impose valid conditions pursuant to provision 3 of VA. CODE ANN.§15.2-2286 or other provision of law.

A Capital Improvement Program has been adopted by the **{{jurisdiction}}** pursuant to the authority of VA. CODE ANN.§15.2-2239.

[THE _____, 2006 ACT adopted this section.]

**Sec. BBB. Proffered cash payments and expenditures.**

(a) **{{Jurisdiction}}**, when accepting cash payments voluntarily proffered on or after the effective date of §22-20.1 et seq. of this Code, shall, within seven (7) years of receiving full payment of all cash proffered pursuant to an approved rezoning application, begin, or cause to begin (i) construction, (ii) site work, (iii) engineering, (iv) right-of-way acquisition, (v) surveying, or (vi) utility relocation on the improvements for which the cash payments were proffered. If **{{jurisdiction}}** does not comply with the above requirement, or does not begin alternative improvements as provided for in subsection (c), it shall forward the amount of the proffered cash payments to the Commonwealth Transportation Board no later than December 31 following the fiscal year in which such forfeiture occurred for direct allocation to the secondary system construction program or the urban system construction program for **{{jurisdiction}}**. The funds to which the County may be entitled under the provisions of Title 33.1 of the Code of Virginia for construction, improvement, or maintenance of primary, secondary, or urban roads shall not be diminished by reason of any funds remitted pursuant to this subsection by the County, regardless of whether such contributions are matched by state or federal funds.

(b) The governing body of any locality eligible to accept any proffered cash payments pursuant to VA. CODE ANN.§15.2-2298 shall, for each fiscal year beginning with the fiscal year 2007, (i) include in its capital improvement program created pursuant to VA. CODE ANN.§15.2-2239, or as an appendix thereto, the amount of all proffered cash payments received during the most recent fiscal year for which a report has been filed pursuant to subsection (d) of this section, and (ii) include in its annual capital budget the amount of proffered cash payments projected to be used for expenditures or appropriated for capital improvements in the ensuing year.

(c) Regardless of the date of rezoning approval, unless prohibited by the proffer agreement accepted by **{{jurisdiction}}** pursuant to VA. CODE ANN.§15.2-2298, **{{jurisdiction}}** may utilize any cash payments proffered for any road improvement or any transportation improvement that is incorporated into the capital improvements program as its matching contribution under VA. CODE ANN.§33.1-23.05. For purposes of this section, "road improvement" includes construction of new roads or improvement or expansion of existing roads as required by applicable construction standards of the Virginia Department of Transportation to meet increased demand attributable to new development. For purposes of this section, "transportation improvement" means any real or personal property acquired, constructed, improved, or used for constructing, improving, or operating any (i) public mass transit system or (ii) highway, or portion or interchange thereof, including parking facilities located within a district created pursuant to this title. Such improvements shall include, without limitation, public mass transit systems, public highways, and all buildings, structures, approaches, and facilities thereof and appurtenances thereto, rights-of-way, bridges, tunnels, stations, terminals, and all related equipment and fixtures.

Regardless of the date of rezoning approval, unless prohibited by the proffer agreement accepted by **{{jurisdiction}}** pursuant to VA. CODE ANN.§15.2-2298, **{{jurisdiction}}** may utilize any cash payments proffered for capital improvements for alternative improvements of the same category within **{{jurisdiction}}** in the vicinity of the improvements for which the cash payments were originally made. Prior to utilization of such cash payments for the alternative improvements, the Board of Supervisors shall give at least thirty (30) days' written notice of the proposed alternative improvements to the entity who paid such cash payment mailed to the last known address of such entity, or if proffer payment records no longer exist, then to the original zoning applicant, and conduct a public hearing on such proposal advertised as provided in subsection F of VA. CODE ANN.§15.2-1427. The Board of Supervisors prior to the use of such cash payments for alternative improvements shall, following such public hearing, find: (i) the improvements for which the cash payments were proffered cannot occur in a timely manner; (ii) the alternative improvements are within the vicinity of the proposed improvements for which the cash payments were proffered; and (iii) the alternative improvements are in the public interest. Notwithstanding the provisions of the Virginia Public Procurement Act, the Board of Supervisors may negotiate and award a contract without competition to an entity that is constructing road improvements pursuant to a proffered zoning condition in order to expand the scope of the road improvements by utilizing cash proffers of others or other available locally generated funds. The Board of

Supervisors shall adopt a resolution stating the basis for awarding the construction contract to extend the scope of the road improvements. All road improvements to be included in the state primary or secondary system of highways must conform to the adopted standards of the Virginia Department of Transportation.

(d) The Board of Supervisors accepting a cash payment voluntarily proffered pursuant to VA. CODE ANN.§15.2-2298 shall within three (3) months of the close of each fiscal year, beginning in fiscal year 2006 and for each fiscal year thereafter, report to the Commission on Local Government the following information for the preceding fiscal year:

1. The aggregate dollar amount of proffered cash payments collected by the County;

2. The estimated aggregate dollar amount of proffered cash payments that have been pledged to the County and which pledges are not conditioned on any event other than time; and

3. The total dollar amount of proffered cash payments expended by the County, and the aggregate dollar amount expended in each of the following categories:

| | |
|---|---|
| Schools | $_____ |
| Road and other Transportation Improvements | $_____ |
| Fire and Rescue/Public Safety | $_____ |
| Libraries | $_____ |
| Parks, Recreation, and Open Space | $_____ |
| Water and Sewer Service Extension | $_____ |
| Community Centers | $_____ |
| Stormwater Management | $_____ |
| Special Needs Housing | $_____ |
| Affordable Housing | $_____ |
| Miscellaneous | $_____ |
| Total dollar amount expended | $_____ |

(e) The governing body of any locality eligible to accept any proffered cash payments pursuant to VA. CODE ANN.§15.2-2298, but that did not accept any proffered cash payments during the preceding fiscal year shall within three months of the close of each fiscal year, beginning in 2006 and for each fiscal year thereafter, so notify the Commission on Local Government.

**Sec. CCC. Cash proffers requested or accepted by a locality.**

(a) No locality may require payment of a cash proffer prior to payment of any fees for the issuance of a building permit for construction on property that is the

subject of a rezoning. However, a landowner petitioning for a zoning change may voluntarily agree to an earlier payment, pursuant to VA. CODE ANN. §15.2-2298. If the petitioner voluntarily agrees to an earlier payment, the proffered condition may be enforced as to the petitioner and any successor in interest according to its terms as part of an approved rezoning.

(b) No locality shall either request or accept a cash proffer whose amount is scheduled to increase annually, from the time of proffer until tender of payment, by a percentage greater than the annual rate of inflation, as calculated by referring to the Consumer Price Index for all urban consumers (CPI-U), 1982-1984=100 (not seasonally adjusted) as reported by the United States Department of Labor, Bureau of Labor Statistics or the Marshall and Swift Building Cost Index.

**Sec. DDD. Records.**

The zoning map shall show by an appropriate symbol on the map the existence of conditions attaching to the zoning on the map. The Zoning Administrator shall keep in his office and make available for public inspection a Conditional Zoning Index. The Index shall provide ready access to the ordinance creating conditions in addition to the regulations provided for in a particular zoning district or zone. The Index shall also provide ready access to all proffered cash payments and expenditures disclosure reports prepared by the Board of Supervisors pursuant to VA. CODE ANN.§15.2-2303.2 and to §22-20.2 of this Code. The Zoning Administrator shall update the Index annually and no later than November 30 of each year.

# Appendix D
# Access Management Guidelines

Access management seeks to reduce the total number of access points on a roadway, identify the best location for access points in order to enhance traffic flow and safety while providing for good access to adjacent properties, and ensure that existing and proposed access points are designed to support safety and corridor functionality. Key features of access management involve actions to limit and/or separate the number of conflict points along a roadway. Beyond the benefits of increased safety and travel efficiency, access management also provides opportunities for enhanced visual quality of roadways (fewer access points allow for more landscaping), safer pedestrian and bicycle travel (because the number of driveways where conflicts can occur is reduced), and decreased vehicular emissions.

While access management provides substantial benefits to the community at large, there is often resistance to implementing access management measures from land-owners and businesses within a transportation corridor. Access management measures frequently result in changes in the way that customers get to and from businesses along a roadway, and business owners often have significant concerns about the impact of access changes to the viability of their businesses. While studies have shown that access management measures have minimal overall negative impacts on businesses over the long-term (particularly if you compare the impacts of access management to the impacts of the increased congestion and decreased safety that would occur if nothing were done), individual businesses or businesses of a certain type (such as convenience stores) can experience negative impacts over the short term and such concerns are very real to those whose livelihoods can be adversely affected.

This appendix provides general guidelines for implementing access management along major transportation corridors in Central Virginia. One of the goals identified as part of the study's stakeholder involvement process was to develop consistency across the region for access management, and to provide guidance with respect to implementing access management.

The recommended standardized access management program for the region incorporates three basic elements. These are: (1) a corridor-level identification of key access points and corresponding activity nodes, (2) recommendations related to the physical aspects of the roadway and its access features, and (3) a planning and regulatory framework that incorporates overlay zoning requirements.

## D.1 Overall Corridor Plan and Access Hierarchy

Access management seeks to avoid traditional strip types of commercial development where individual businesses on relatively small parcels typically each have two or more driveways with full access provided for both directions of travel on the major road. Strip development is typically focused entirely along the frontage of the roadway with little or no access via other roadways or even through inter-parcel access connections. Both

transportation and land use can be more efficient with nodal development patterns that are concentrated at locations where full access can be safely provided and that are relatively evenly spaced at intervals of one mile or more. To the extent possible, the designation of activity nodes should also be based on existing settlement patterns as well as other features, including:

- availability of other infrastructure such as water and sewer;
- existing zoning and proposed future land use; and
- locality economic development plans, including the location of proposed industrial parks

## D.2 Physical Features Related to Roadway and Access Points

Key physical features related to access management include driveway spacing and design, signalized intersection spacing, corner clearances at intersections, crossover spacing and location, adequate and safe turn lanes, local circulation roads including frontage and reverse frontage roads, and provision of inter-parcel connections. Exhibit D-1 provides standardized guidelines for each of these physical features.

Exhibit D-1
**Guidelines – Access Management Physical Features**

| Feature | Guidelines |
|---|---|
| Driveway spacing – first tier four-lane primary highways (i.e. Route 29, Route 460) | Based on minimum frontage requirements of 850 feet for property's first access point and additional 1,250 feet for additional access points |
| Driveway spacing – second-tier primary highways (i.e. Route 24, Route 120, Route 122, Route 501) | Based on minimum frontage requirements of 500 feet for property's first access point and additional 800 feet for additional access points |
| Driveway location | Promote the design of driveways that come in directly across, rather than offset, from existing driveways on the opposite side of the roadway |
| Corner clearances on mainline roadway | 400 feet upstream of side street<br>250 feet downstream of side street |
| Corner clearances on side roads | 250 feet upstream of mainline roadway<br>100 feet downstream of mainline roadway |
| Left turn lane | Construct at all full-access median crossovers |
| Right turn lane | Construct/require at all commercial entrances and intersecting roadways |
| Crossover spacing (full access crossovers) | Desired: 0.5 miles<br>Minimum: 0.25 miles |
| Side streets | Wherever possible, seek to remove minor road intersection offsets (where a minor road intersects the major roadway at two locations that are physically separated) |

Exhibit D-1

**Guidelines – Access Management Physical Features**

| Feature | Guidelines |
|---|---|
| Traffic signal spacing | 2.0 miles in rural areas<br>0.5 miles in developing areas<br>0.25 miles in developed areas |
| Local circulation and inter-parcel access | Develop conceptual plans for local circulation roadways that serve as reverse frontage roads, and seek to preserve rights-of-way and/or clear areas (without buildings) for the ultimate construction of these roadways. Such roadways should, in general, be located between 300 and 700 feet of the centerline of the existing major roadway. |

## D.3 Planning and Regulatory Features

The planning and regulatory features of access management include adoption of wording in locality comprehensive plans to provide policy foundations for corridor preservation, adoption of overlay zoning within the corridors, and changes in procedures related to subdivision and site plan requirements, and negotiation with property owners. These are summarized in Exhibit D-2 below.

Exhibit D-2

**Guidelines – Access Management Planning Aspects**

| Feature | Guidelines |
|---|---|
| Comprehensive Plan | Adopt changes to the locality Comprehensive Plan to provide the foundation for corridor preservation, corridor overlay zoning, and access management in key corridors. |
| Implement corridor overlay zoning in key corridors | Corridor Overlay Districts should extend 1,000 feet on each side of the centerline of major roadway. Key features of the overlay zoning include:<br>1. Minimum frontage requirements as shown in Exhibit D-1.<br>2. Establishment of setback requirements to ensure that sufficient property is available for needed widening, construction of turn lanes, and other improvements.<br>Sample wording for overlay zoning is included in Exhibit D-3. |
| Shared entrances, inter-parcel access, secondary road access | Provide incentives for shared entrances, inter-parcel access, and/or access via existing or proposed secondary roads, as well as new parallel roads (see sample wording for overlay |

Exhibit D-2

**Guidelines – Access Management Planning Aspects**

| Feature | Guidelines |
|---|---|
| | zoning is included in Exhibit D-3). |
| Access agreements with adjacent property owners | New agreements for access onto the main roadway should incorporate language stating that such access is temporary until such time that alternative access via localized internal or parallel roads, or a secondary road, is developed. Local staff and VDOT should coordinate to apply these guidelines. |
| Subdivision and site plan review process | The goals of the updated Comprehensive Plan, access management, and localized circulation should be integrated into the subdivision, site plan, and negotiation process with landowners and developers. |
| Median policies | 1. Establish and implement goal of no net increase in crossovers within the corridor.<br>2. Establish and implement policy that any crossover not identified as a full-access crossover in the corridor access management plan be closed at such time as it is identified as a safety concern. Public funds should not be expended to improve crossovers that are not included in the corridor access management plan. |

## D.4 Implementation

As indicated previously, access management can be controversial because of both real and perceived impacts on property owners, particularly business owners, within a corridor. Studies have shown that many of the potential impacts are more the result of perception rather than reality, so it is important, therefore, to have the participation of property owners in the development of access management plans. Such participation should include both input from property owners as well as education on the need for access management and the potential impacts. The study process should include input from the following key stakeholders:

- Corridor businesses and business associations (including chambers of commerce)
- Major land owners
- Adjacent neighborhood associations
- City/county planners and engineers
- Locality planning commissioners
- Elected officials
- Locality economic development staff
- VDOT representatives

- School board or school transportation staff (for corridors with school bus concerns)
- Emergency services staff
- Developers

A key element of implementing access management is the adoption of overlay zoning. A sample overly zoning ordinance is included below in Exhibit D-3.

Exhibit D-3

**Model Overlay District Zoning Ordinance**

**Section XX – Highway Corridor Overlay District**

**XX.1 Purpose and Intent**

The purpose of this district is to protect and promote the public health, safety and general welfare by preventing or reducing traffic congestion and/or changes in the public streets; and maintaining the function of arterial highways, primary highways, and secondary collector roads to encourage the most desirable development and use of land in accordance with the Comprehensive Plan.

**XX.2 District Boundaries**

1. The Highway Corridor District Boundaries shall be as follows: Route AAA from Route BBB to Route CCC.
2. In lieu of a metes and bounds description, the District boundaries shall be described by fixing the point of beginning to the centerline of the highway and the point of ending shall be one-thousand (1000) feet from the centerline of the nearest two lanes.

**XX.3 Establishment of Districts**

The Highway Corridor Overlay District shall be in addition to and shall overlay all other zoning districts where it is applied so that any parcel of land lying in whole or part in the Highway Corridor Overlay District shall also lie within one of more of the other zoning districts provided by this ordinance. The effect shall be the creation of new zoning districts consisting of the regulations and requirements of both the underlying district(s) and the Highway Corridor Overlay District.

**XX.4 Administration**

The administration of the section shall be through site plan requirements and through sections of the Subdivision Ordinance.

**XX.5 Permitted Uses**

All uses permitted by right or by special exception/use in the underlying zoning district(s).

**XX.6 Lot Area and Other Dimensional Requirements**

The lot dimensions and other dimensional requirements shall be the same as those requirements set forth in the underlying zoning district(s) except that the minimum front

setback shall be sixty-five (65) feet from the centerline of the nearest two lanes unless a greater setback is required by the underlying zoning district.

**XX.7 Design Requirements**

All uses shall be subject to the limitations and development standards set forth in the underlying zoning district(s) and shall be subject to the following limitations:

1. Such uses shall have access designed so as not to impede traffic on Route AAA, which is intended to carry through traffic. To such end, access via the following means may be given favorable consideration:
    a. By the provision of shared entrances, inter-parcel travel-ways or on-site service drives connecting adjacent properties or through access points and existing and future transportation improvements as shown in Route AAA Corridor Management Plan, as incorporated into the Comprehensive Plan;
    b. By access from a public highway other than that on which the property is fronted;
    c. By the internal streets of a commercial, office, or industrial complex.
2. One point of access shall be permitted for each lot with a minimum of 850 feet of frontage. One additional entrance or road may be permitted for each additional 1,250 feet if approved by the Planning Commission. The form of this access will be determined by the Planning Commission; this access shall be as defined in the Route AAA Corridor Management Plan, as incorporated into the Comprehensive Plan. The Planning Commission may modify this requirement if it finds that it best accomplishes the purposes of Section XX.1.
   Existing parcels of land shall not be denied access to a public highway if no reasonable joint or cooperative access is possible, at the time of development.
3. A bonus shall be given for combining access points when two adjacent property owners agree. The total lot size and road frontage normally required will be reduced by 15 percent for both landowners. In addition, the required number of parking spaces will be reduced by 15 percent for each development. Site circulation and safety standards will still be enforced.

# Appendix E
# VDOT Traffic Impact Statement Guidelines

The following pages are an excerpt from the VDOT publication "Traffic Impact Analysis Regulations, Administrative Guidelines 24 VAC 30-155" (May 24, 2007). The excerpted pages related to the preparation of Traffic Impact Statements (TIS's). The *Regional Action Plan* recommends that the VDOT standard be used by all jurisdictions in the study area for regional consistency and to meet the requirement for VDOT review included in current state regulations.

# 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 assumption*s 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.

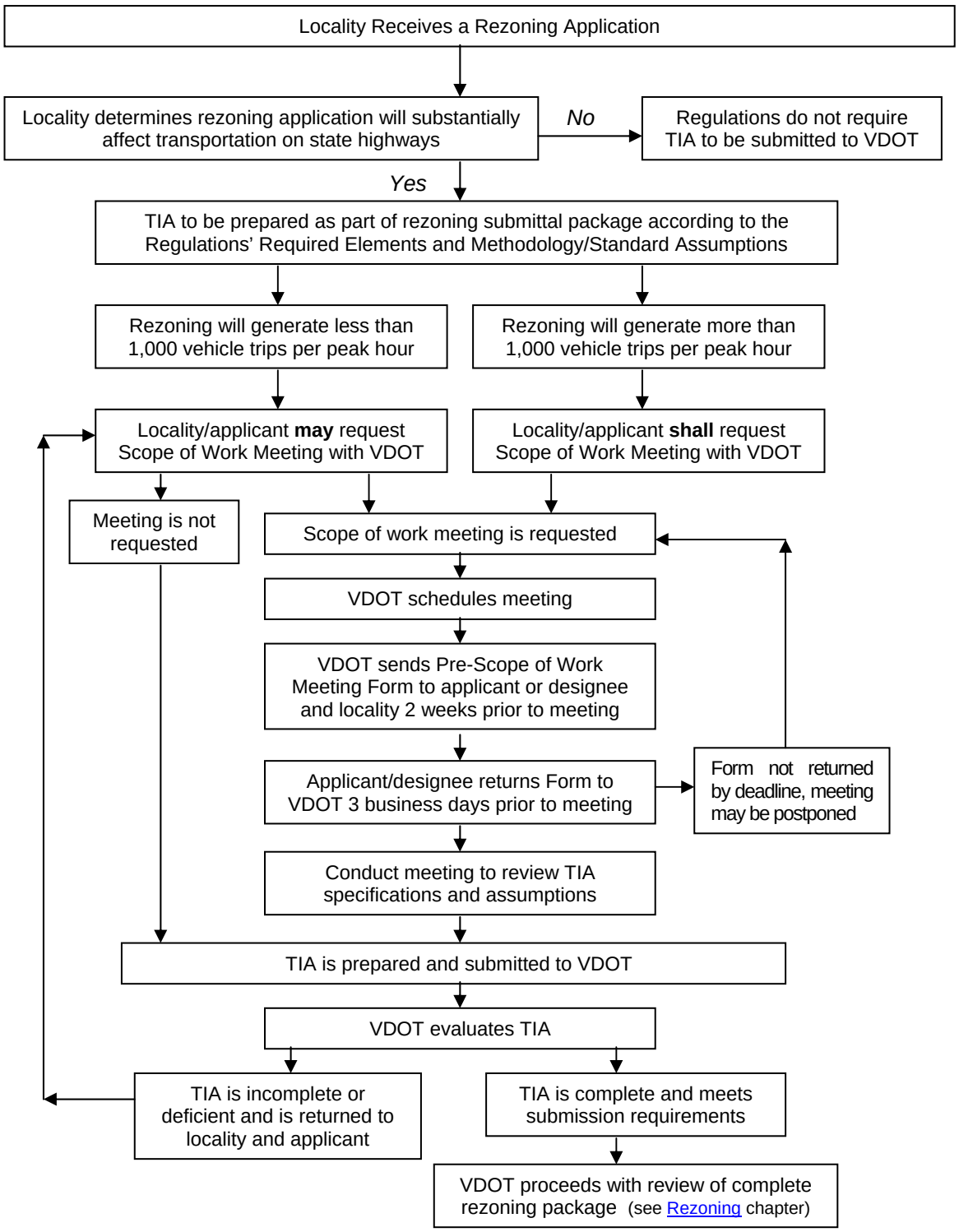
PRE-SCOPE OF WORK MEETING FORM. This form collects background information on the applicant's project and the initial traffic impact analysis assumptions proposed by the applicant or their designee. The form will be provided to the applicant or their designee at least two (2) weeks prior to the scheduled 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 W*ITH 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.

## FLOWCHART: VDOT REVIEW OF A TRAFFIC IMPACT ANALYSIS (TIA)



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 |
| ***Background Information*** | | | | |
| List of all non-existent transportation improvements assumed in the analysis | Required | Required | Required | Required |
| Map of site location, description of the parcel, general terrain features, and location within the jurisdiction and region. | Required | Required | Required | Required |
| Description of geographic scope / limits of study area. | Within 1,000 ft of site | Within 2,000 feet of site and any roadway on which 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 |
| ***Analysis of Existing Conditions*** | | | | |
| Collected daily and peak hour of the generator traffic volumes, tabulated and presented on diagrams with counts provided in an appendix. | Only diagrams required | Required | Required | Required |

| Item | Site Generated Peak Hour Trips | | | |
|---|---|---|---|---|
| | Less than 100 | 100 to 499 | 500 to 999 | 1,000 or more |
| Analyses for intersections and roadways identified by VDOT. Delay and Level of Service (LOS) are tabulated and LOS is presented on diagrams for each lane group. | Only diagrams required | Required | Required | Required |
| When the type of development proposed would indicate significant potential for walking, bike or transit trips either on- or off-site, analyses of pedestrian and bicycle facilities, and bus route or 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 ① |
| Speed Study ② | If requested by VDOT | If requested by VDOT | If requested by VDOT | If requested by VDOT |
| Crash history near site ③ | If requested by VDOT | If requested by VDOT | If requested by VDOT | If requested by VDOT |
| Sight distance ④ | If requested by VDOT | If requested by VDOT | If requested by VDOT | If requested by VDOT |
| ***Analysis of Future Conditions Without Development*** ⑤ | | | | |
| Description of and 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 ① |

| Item | Site Generated Peak Hour Trips | | | |
|---|---|---|---|---|
| | Less than 100 | 100 to 499 | 500 to 999 | 1,000 or more |
| ***Trip Generation*** | | | | |
| Site trip generation, with tabulated data, broken out by analysis year for multi-phase developments, and including justification for deviations from ITE rates, if appropriate. | Required | Required | Required | Required |
| Description and justification of internal capture reductions for mixed use developments and pass-by trip reductions, if appropriate, including table of calculations used. | Required | Required | Required | Required |
| ***Site Traffic Distribution & Assignment*** | | | | |
| Description of methodology used to distribute trips, with supporting data. | Required | Required | Required | Required |
| Description of the direction of approach for site generated traffic and diagrams showing the traffic assignment to the road network serving the site for the appropriate time periods. | Required | Required | Required | Required |
| ***Analysis of Future Conditions With Development*** | | | | |
| 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 ① |
| ***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 ① |
| ***Conclusions*** | | | | |
| Clear, concise description of the study findings. | Required | Required | Required | Required |

## Footnotes

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

② Speed studies may be necessary when there is reason to believe that operational or geometric conditions on a roadway result in speeds that vary considerably from the posted speed limits. In those situations, they should be requested when entrance construction is expected to occur in the short term (within a few years) and without a complete rebuilding of the roadway at the location of concern, as changes in local conditions can be expected to have an impact on the road's operating speed. If a speed study is not requested under the TIA regulations, it may still be required at the land use (entrance) permit stage in order to address specific concerns.

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

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

⑤ Analysis of Future Conditions without Development (For Sites with Less Than 100 VPH). Sites with relatively low peak hour traffic generation that may still need to be submitted under the Traffic Impact Analysis Regulations—for instance, rural developments on very low volume roadways that 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 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.

**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, 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, pedestrian or bicycle accommodations 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.

**aaSIDRA** 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. aaSIDRA 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).

# Appendix F
# Proposed Wording for Local Resolutions to Initiate Implementation of the Regional Action Plan

## I. Resolution in Support of Regional Action Plan

**WHEREAS,** Virginia's Region 2000 Local Government Council, in a cooperative effort with **{{jurisdiction name}}**, other jurisdictions within Central Virginia, and the Virginia Department of Transportation, has developed the *Central Virginia Regional Action Plan for Coordinated Land Use and Transportation Planning*;

**WHEREAS,** the Regional Action Plan includes a comprehensive set of recommendations that are intended to be implemented at the local, regional, and state levels in order to provide for more effective planning for both transportation and land use;

**WHEREAS, {{jurisdiction name}}** supports the goal of improving the coordination between land use and transportation planning in Central Virginia in order to promote a high quality of life, continued economic development, and an efficient and safe transportation system;

**NOW THEREFORE BE IT RESOLVED** that {{jurisdiction name}} fully supports the goals, strategies, and initiatives incorporated in the Regional Action Plan and will work diligently with Virginia's Region 2000 Local Government Council, other jurisdictions in the region, and the Virginia Department of Transportation in duly considering and implementing the recommendations of the Regional Action Plan.

## II. Resolution in Support of Regional Policy Statement on Public/Private Roles

**WHEREAS,** it is the responsibility of state and local governments in Virginia to provide for safe and effective transportation for the general public and for the conduct of commerce;

**WHEREAS,** in particular areas within **{{jurisdiction name}}**, traffic generated by new development is putting a disproportionate share of traffic on already strained roadway facilities;

**WHEREAS,** improved coordination between land use and transportation planning has been identified as a regional priority in order to promote a high quality of life in with continued economic development in Central Virginia;

**WHEREAS,** the Commonwealth of Virginia has, through various legislative efforts, recognized that the private sector plays an important role in the provision of transportation improvements to serve traffic generated by new development; and

**WHEREAS,** various moderate and fast-growing communities across the Commonwealth have recognized the important role of the private sector in developing transportation improvements and implemented regulations and procedures to define and regulate this role;

**NOW THEREFORE BE IT RESOLVED** that it is the policy of {{jurisdiction name}} that:

- Both the public and private sectors have important roles to play in providing the general public with a safe and effective transportation system, and it is in the interest of **{{jurisdiction name}}** to work closely and on an ongoing basis with the private sector to identify and develop transportation improvements; and
- An equitable share of the roadway capacity needs generated by new development is the responsibility of the property developers and residents of new development within **{{jurisdiction name}}.**

**III. Policy Statement Resolution on Locality Role with Respect to Secondary Roads**

**WHEREAS,** the Virginia Department of Transportation (VDOT) is currently responsible for planning, designing, constructing, and maintaining secondary roads within **{{jurisdiction name}};**

**WHEREAS, {{jurisdiction name}}** has been charged by the Commonwealth of Virginia with the responsibility for controlling land uses that feed onto and make of secondary roads;

**WHEREAS,** the Commonwealth of Virginia is relatively unique in its current policies of designating responsibility for most secondary and local roads to the Virginia Department of Transportation;

**WHEREAS,** the *Central Virginia Regional Action Plan for Coordinated Land Use and Transportation Planning*; a study developed by Virginia's Region 2000 Local Government Council, in a cooperative effort with **{{jurisdiction name}}**, other jurisdictions within Central Virginia, and the Virginia Department of Transportation, has identified the division of responsibilities (VDOT control of secondary roads and county control of land use) as a potential hindrance to truly effective and fully coordinated land use and transportation planning;

**NOW THEREFORE BE IT RESOLVED** that **{{jurisdiction name}}** supports further consideration of the recommendations to increase local participation and/or control of the planning, design, and construction of secondary roads within **{{jurisdiction name}}** subject to the following:

- Funding levels for the planning, designing, constructing, and maintaining secondary roads within **{{jurisdiction name}}** continue to be provided by the state at existing levels or greater;

- Detailed implementation studies be performed to ascertain the full costs and benefits of such a transition to the citizens of **{{jurisdiction name}},** and to identify the most efficient ways for such responsibilities to be assumed by **{{jurisdiction name}}** including the potential benefits of cooperative efforts at the regional level.

**IV. Policy Statement Resolution on Locality Role with Respect to Primary Roads**

**WHEREAS,** the Virginia Department of Transportation (VDOT) is currently responsible for planning, designing, constructing, and maintaining primary roads within **{{jurisdiction name}};**

**WHEREAS, {{jurisdiction name}}** has been charged by the Commonwealth of Virginia with the responsibility for controlling all land uses within **{{jurisdiction name}}**, including land uses that abut and feed onto major primary roads;

**WHEREAS,** primary roads are of major importance in serving the mobility, safety, and economic development needs of **{{jurisdiction name}}** and of Central Virginia as a whole;

**WHEREAS,** the *Central Virginia Regional Action Plan for Coordinated Land Use and Transportation Planning*; a study developed by Virginia's Region 2000 Local Government Council, in a cooperative effort with **{{jurisdiction name}}**, other jurisdictions within Central Virginia, and the Virginia Department of Transportation, has identified the importance of a unified approach towards managing both the transportation features and adjacent land uses along these roadways in order to maintain and enhance their safety and long-term functionality;

**NOW THEREFORE BE IT RESOLVED** that **{{jurisdiction name}}** supports the development of highly integrated land use and transportation plans for major primary roadway corridors within **{{jurisdiction name}}**, and will work closely with the Virginia Department of Transportation in developing these plans including efforts to identify the best mix of underlying zoning, access regulations, site plan regulations, overlay zoning, and other local rules, regulations, and procedures that will support the long-term safety and functionality of these important transportation corridors.

**V. Policy Statement Resolution Supporting State Comprehensive Planning Support Function**

**WHEREAS, {{jurisdiction name}}** has been charged by the Commonwealth of Virginia with the responsibility for controlling all land uses within **{{jurisdiction name}}**;

**WHEREAS,** the *Central Virginia Regional Action Plan for Coordinated Land Use and Transportation Planning*; a study developed by Virginia's Region 2000 Local Government Council, in a cooperative effort with **{{jurisdiction name}}**, other jurisdictions within Central Virginia, and the Virginia Department of Transportation, has

identified procedures that have been effectively used in other states whereby a State Planning Office provides importance support and expertise to local governments with respect to land use planning, coordination with transportation planning, economic development, and acts as an advocate at the state level for improved local planning tools and practices;

**WHEREAS,** the *Central Virginia Regional Action Plan for Coordinated Land Use and Transportation Planning* recommends that Virginia consider the establishment of a state planning office to provide support to local governments;

**NOW THEREFORE BE IT RESOLVED** that **{{jurisdiction name}}** supports the development of a state planning office that will support local government planning functions by providing expertise, coordination with transportation planning, economic development, and to act as an advocate at the state level for improved local planning tools and practices.

# Appendix G
# Lessons Learned

As with any study, a detailed work plan for developing the *Central Virginia Regional Action Plan for Coordinated Land Use and Transportation Planning* was prepared prior to commencing work. This work plan reflected the best estimates of the study team (consisting of consultant, regional, VDOT, and local jurisdiction staff) of what would be required to prepare an action plan to meet the needs of the Central Virginia region. From the outset, however, it was recognized that the study process would need to be sufficiently flexible to accommodate changing and unforeseen requirements and events. This appendix describes lessons that were learned as this study progressed and that could be applied to other studies of this type. Many of the lessons learned resulted in changes to the way this study itself was performed – modifications to the study work plan, its emphasis, as well as changing requirements and how they were addressed, are also described in this appendix.

## G.1 Overview of Lessons Learned

The key lessons learned from performing this study fall into five broad categories, including the process used to identify and develop recommendations, the process used to analysis the recommendations, stakeholder coordination and education, study timing and schedule, and the establishment of study follow-on activities.

Study Recommendations

One of the key lessons learned is that the development of recommendations to better integrate land use and transportation planning is best accomplished (and quite possibly must be accomplished) as a two-step process. This is primarily due to the fact that the subject matter is quite complex and wide-ranging. The study team established very early on that the study needed to focus on where land use and transportation planning can and/or should overlap. The study team also focused on objectives that relate to this overlap (for example, compact development supports the objective of reducing overall travel), and no judgments were made as to whether such development represents, for example, "smart growth." Even with this narrowing of focus, however, the subject of better integrating land use and transportation planning remains quite broad.

The first consideration related to the broadness of potential action recommendations is that the potential actions tend to be at either a policy level or at a more detailed implementation level (i.e., establishing procedures or regulations). In the majority of cases, buy-in is needed on the policy side prior to even considering many of the details related to implementation. This study sought to develop broad action recommendations along with sufficient details to allow decision-makers to understand some of the implications, but it became clear that follow-on activity to this study would be needed. This follow-on activity represents the second step in the process, which incorporates ongoing education for the general public, decision-makers and other stakeholders;

enhancing the level of detail and specificity in the recommendations; and tailoring the recommendations for each jurisdiction.

The importance and need for a two-step process was highlighted by experience on this study. As the study progressed, some jurisdictions sought additional implementation details while others preferred to avoid too many details and requested that draft action recommendations be made more general. The study team was sensitive to the fact that some details are more integral to the recommended concept while others simply serve to illustrate how the concept might work. The concern was that stakeholders sometimes become overly concerned about illustrative details (those that could be changed without affecting the objective of the proposed action) and end up not supporting the overall concept as a result.

The second reason for the two-step process is that the action recommendations ultimately need to work together as a package. As the Action Plan illustrates, the various recommendations all affect each other, and describing a comprehensive, interconnected package of improvements at the policy level is the logical first step. This full package provides, in effect, the big picture, and one cannot get to the specifics without first looking at the big picture. Once the overall package of action recommendations has been adopted, additional details can then be added to the individual action recommendations as part of the second step. One of the lessons of the study is that simultaneously working both "horizontally" (creating an integrated set of action recommendations) and "vertically" (adding depth of detail) proved to be infeasible.

The lesson that can be applied to other studies is that the process should be more explicitly designed as a two-step process. Step 1, which was largely accomplished by this study, is the development of a package of broad and policy-level action recommendations supported by sufficient detail to support decision-making and to guide Step 2, which is the process of adding detail, prioritizing initiatives, shepherding their implementation, and continuing an education process for the general public, appointed and elected officials, and other key stakeholders. This study recommends that Step 2 be accomplished by a Working Group, comprised of regional planning staff that will work with appointed and elected officials. Chapter 6 of this report provides additional information on the Working Group.

Analysis of Recommendations

The analysis of recommendations sought to provide decision-makers with information as to the potential effectiveness of various action recommendations. One of the lessons learned with respect to the analysis of recommendations relates very closely to the discussion above. Because many of the recommendations were developed at more of a broad-based policy-level approach than initially envisioned, stakeholders in the study process sought information about where such actions had been applied, their track record of success, and how the various actions would work together and how they might work across jurisdictions. There was less interest in quantitative details on the individual action recommendations. The lesson learned with respect to analysis is that the depth and

characteristics of supporting analysis should match not only the level of detail in the proposed actions, but also match the information needs of study stakeholders.

Stakeholder Coordination

This study included participation of planning and engineering staff from five jurisdictions, as well as the Local Government Council, VDOT, VDRPT, Greater Lynchburg Transit, Company, and a wide range of other stakeholders. Several lessons were learned from the study's coordination process:

1. While study team meetings that included participation from all jurisdictions were important, one-on-one meetings with local jurisdiction staff was critical to ensure that local concerns were being taken into consideration. Similarly, multiple meetings with Planning Commissions were also important.
2. Maintaining an ongoing dialog that includes elected officials is important, but also quite difficult. This study benefited from the participation of many elected officials at the first regional planning forum but, despite substantial efforts (and changes to the study work plan) to tap into this initial momentum, participation by elected officials did drop off. Additional focused efforts to include elected officials in the process would have been beneficial to the study. Such efforts could include attendance by the study team in more Board of Supervisors/Council work sessions, regional meetings of shorter duration that are focused on elected officials, and distribution of briefing materials on the study at Board of Supervisors/Council monthly meetings.

## G.2 Work Plan Modifications

The original work plan for this study (included at the end of this appendix) consisted of eight phases to be completed over the course of approximately 13 months. For many of the study phases, the emphasis and/or work activities were adjusted based on study requirements. The discussion below summarizes these changes.

**Phase:** 1 – Start-Up
**General Description:** Collection of data, GIS mapping, initial publicity efforts (including Web site development)
**Original Emphasis:** Collection of technical data and mapping; generation of public interest
**Revised Emphasis:** None
**Reason for Change:** Not applicable
**Lessons Learned:** Establish contacts with local jurisdictions on GIS issues very early in the study process.

**Phase:** 2 – Brainstorming
**General Description:** Regional planning forum, public workshop, and assessment of institutional issues
**Original Emphasis:** Stakeholder and public involvement; identification of issues that would affect implementation of potential action items

**Revised Emphasis:** Substantial emphasis was placed on the stakeholder process (i.e., regional planning forum) to excellent effect. Feedback on the first regional planning forum was almost uniformly positive and it served as an excellent way to begin the regional dialog on land use and transportation. Somewhat less emphasis was placed on the meeting for the general public.
**Reason for Change:** Integrating land use and transportation planning is a subject that is simultaneously very broad, quite complex, and encompasses both general policy considerations as well as very specific action items. The complexity of the subject matter and the overview nature of the study (i.e., it covered a wide range of possible actions) made it important to focus additional efforts on making the information more accessible and relevant to the general public.
**Lessons Learned:** Effective study of better integrating land use and transportation planning needs to be a two-step process whereby broader policy considerations, as well as an effective education program, comprise the first step and detailed implementation considerations comprise the second step.

**Phase:** 3 – Analysis
**General Description:** Organize, assess, and rank potential action items; review these with the public and stakeholders
**Original Emphasis:** Technical and quantitative analyses, including use of the regional transportation model to test discrete land use and transportation scenarios.
**Revised Emphasis:** Being able to answer questions about what has been tried elsewhere, how well it has/has not worked, the existing conditions of the Central Virginia region in terms of land use and transportation, and the opportunities and challenges that these existing conditions pose.
**Reason for Change:** Interest at the study committee level, study management level, as well as feedback from the initial regional planning forum. Key issues that were identified were more related to broader concerns than to items such as the specific costs and impacts of various land use scenarios. Two other issues: 1) the data sets, including the regional model, incorporated only the MPO area and not the entire study area, 2) quantitative analysis would be more appropriate at a stage in the study/implementation process when more specific recommendations have been developed and reviewed with individual localities.
**Lessons Learned:** Tailor the work plan to allow for flexibility to respond to questions and the need for decision-supporting information from stakeholders. In many cases, qualitative information proved to be more appropriate than detailed quantitative information.

**Phase:** 4 – Regional Action Plan
**General Description:** Development of draft regional action plan, testing and ranking of concepts, public and stakeholder review.
**Original Emphasis:** Structured testing and ranking of concepts including quantitative analysis where appropriate, review of the proposed concepts by the study committee, and review of draft plan by the general public.
**Revised Emphasis:** While a structured approach was developed to rank proposed action items, the complexity and inter-relationship between potential actions items made such a

structured approach difficult for users to understand and ultimately of limited benefit. Review of concepts at the study committee level was also proving to have limited benefit, so the study team adjusted to hold individual meetings with each of the five jurisdictions included in the study. As indicated previously, interest in this complex subject from the general public was proving difficult to generate, so the study team structured the second meeting as a follow-on to the successful May regional planning forum (a separate public meeting was also held, but was sparsely attended). Communicating the complexity of the full package of proposed action items, and the inter-relationship between the individual actions, proved to be a challenge for the study as well. Considerable effort went into organizing the proposed actions into a complete package that was as concise and readily understandable as possible.
**Reason for Change:** Respond to the nature of the proposed action items, seeking to maximize input from the widest range of stakeholders, and develop the most effective method for conveying the overall proposed action plan.
**Lessons Learned:** Study experience reinforced the idea that a two-step approach (broader policy considerations in the first step and more detailed implementation considerations in the second step) is most effective. Continued participation from elected officials proved difficult despite the success of the first regional planning forum; additional efforts to encourage and perhaps tailor specific outreach activities to elected officials would be appropriate.

**Phase:** 5 – Local Plans
**General Description:** Apply the proposed regional action recommendations to local plans, specifically to the development of the Transportation Component of locality Comprehensive Plans.
**Original Emphasis:** Tailoring action recommendations to individual jurisdictions.
**Revised Emphasis:** Development of broader objectives for inclusion in locality Comprehensive Plans.
**Reason for Change:** Two of the five jurisdictions in the study area were in the process of updating their Comprehensive Plans and were somewhat hesitant to complicate (and perhaps add additional controversy) into the process. Jurisdictions were also hesitant to include specifics from action recommendations that had not been fully reviewed at the political level. Additional efforts beyond the completion of this study by the proposed Working Group will be necessary in order for localities to incorporate additional specifics into their Comprehensive Plans.

**Phase:** 6 – Test Cases
**General Description:** Organize data from previous corridor studies done on these roadways, develop and test discrete land use and transportation scenarios, document the results.
**Original Emphasis:** Quantitative analysis of the transportation impacts of specific action plan recommendations, limited to those areas of Routes 29 and 460 where traffic and land use data was collected as part of previous studies.
**Revised Emphasis:** Illustration of the application of the general recommendation concepts to the entirety of Routes 29 and 460 through the study area.

**Reason for Change:** Action plan recommendations were not developed to a level of specificity that would allow for the detailed quantitative analysis originally proposed. Study management requested that the illustration of the broader-level recommendations be shown on all of Route 29 and Route 460 within the study area. Focus was shifted to provide guidance on follow-on activities within the study corridors.

**Phase:** 7 – Regional Consistency
**General Description:** Documentation of similarities and differences between jurisdiction plans, high level regional meeting to review these similarities/differences, updates to the regional plan based on this analysis.
**Original Emphasis:** Reconcile differences between the local jurisdiction plans.
**Revised Emphasis:** Increase in the number of meetings with local jurisdictions and with the study committee to review the regional action plan recommendations and to address local concerns, meetings with locality planning commissions to review the regional action plan and to discuss local implications of these regional action recommendations, final regional planning forum to discuss the regional action plan and to review local considerations with respect to the regional plan.
**Reason for Change:** Local concerns with respect to implementation of action plan recommendations without additional review, specifics, and an education process for appointed and elected officials. The study team focused efforts on meeting with local planning staff, planning commissions, and the final regional planning forum to identify and address regional consistency issues. Changes were made to the regional action plan recommendations based on this review process.

**Phase:** 8 – Documentation
**General Description:** Final report documents in draft and final form, ongoing Web site updates including providing all draft and final documents on the Web site, final public/stakeholder meeting.
**Original Emphasis:** Document and publicize final recommendations.
**Revised Emphasis:** None.
**Reason for Change:** Not applicable.

## G.3 Original Work Plan

For reference, the original work plan for the study consultant is included below.

> The Consultant will develop a regional action plan for coordinated land use and transportation planning for Region 2000 based on a work program that is divided into eight phases. Coordination throughout the study will be with Region 2000, local governments, and state and federal agencies including, but not limited to, the Virginia Department of Transportation, the Virginia Department of Rail and Public Transportation, the Federal Highway Administration, and the Federal Transit Administration. It is anticipated that ongoing coordination efforts will take place with the Consultant's attendance at the regular monthly meetings of the region's Transportation Technical Committee. References in this Scope of Work

to a “study committee” are to the Transportation Technical Committee or to a subset of this committee as identified by Region 2000.

**Phase I: Start-Up**

Task 1 – Collect GIS Data
The Consultant will collect all available data on transportation and land use in the region, including data from the US Census, the Virginia Employment Commission (VEC), the Weldon-Cooper Center, the Virginia Department of Transportation, as well as other federal and state sources. The Consultant will also obtain transportation and land use databases from local and regional government sources, including parcel data, land use, zoning, infrastructure, and other applicable databases. The Consultant will also obtain the latest regional transportation model data from the Virginia Department of Transportation. With the exception of minor field visits when deemed necessary by the Consultant, the Consultant will not be collecting new data in the field such as traffic counts, transportation system inventory, etc.

Task 2 – Organize GIS Data
In order to obtain a complete picture of the existing environment, the Consultant will refine the existing transportation, land use, and demographic databases obtained in Task 1 and tie these databases together using GIS. The Consultant will also utilize the existing regional transportation model, along with the GIS databases described above, to assist in identifying regional constraints and opportunities with respect to transportation and land use. Some of the measures that would be identified and tabulated include travel time, accessibility indices, and the location of existing and projected population and employment and the relationship between these demographic data. The Consultant would develop the databases to allow for analysis of multiple transportation and land use scenarios (these scenarios would be tested as part of the process of identifying and analyzing study recommendations). A particular emphasis will be on enhancing the data sets to support better decision-making for transit, walking, and bicycling.

Task 3 – Stage 1 Publicity
As Region 2000 has developed transportation plans, greenway/blueway plans, as well as roadway corridor, transit, and land use studies, it has become clear that the public is demanding improved choices to the automobile, healthier transportation choices, and overall better coordination between land use and transportation. One goal of this study is to fully understand these demands and to energize public support for changes that can enhance the coordination between land use and transportation. In order to energize public dialogue and support, the Consultant will establish communication with local media through media information packets, press releases and will arrange to meet with local media to publicize the study through newspaper articles, editorials, as well as television and radio coverage. Local media will be personally invited to attend forums and given an opportunity to review the materials in an advance “showing” conducted

immediately in advance of opening workshops to the public. The Consultant will provide all written materials to Region 2000, but all actual mailings and mailing list maintenance will be performed by Region 2000.

Task 4 – Develop Web Site
The Consultant will establish a project website to provide information to the general public throughout the study and to provide a forum for public comments to be received throughout the study. This website will be linked to the Region 2000 website and local government websites as requested. The website will be maintained throughout the study to provide the latest information on the study to the general public.

**Phase II: Brainstorming**

Task 5 – Regional Planning Forum
The Consultant will prepare for and execute a high-level regional planning forum in order to bring regional transportation and land use officials, members of local planning commissions, elected officials, and other key stakeholders together with nationally recognized experts on land use and transportation issues. The Consultant proposes the following three experts, one of which will be _____ of the Consultant. The other two panel members will be identified in cooperation with Region 2000. The Consultant staff will also facilitate the forum.

It is anticipated that the forum will cover approximately 5-6 hours and will be planned to include lunch for forum participants. The cost of the lunch will be borne by Region 2000. The forum will include an introductory presentation as well as discussion groups and break-out sessions in order to facilitate brainstorming of potential measures that could be implemented in Central Virginia as well as implementation issues related to these measures. The Consultant will prepare meeting advertisements, press releases, meeting materials, and will prepare written summaries of the forum. The Consultant will provide all written materials (such as invitation letters, agendas, preliminary information packets, etc.) to Region 2000, but all actual mailings and mailing list maintenance will be performed by Region 2000. Region 2000 will also place and cover the cost of any newspaper advertisements.

The Consultant will develop summaries of the existing land use and transportation environment, including maps and tables, for use at the planning forum. At the regional planning forum, The Consultant will begin to identify a vision for linking land use and transportation within the region and brainstorm with the group about desired outcomes, strategies, policies, and others tools that could be assessed to provide better linkages.

Task 6 – Public Workshop
The Consultant will prepare materials summarizing the discussions from the Regional Planning Forum described in Task 5 for presentation at a publicly advertised workshop. The Consultant will prepare a media release, meeting advertisements, meeting agendas and invitation letters, and other workshop materials for a public workshop to be held approximately 2-3 weeks following the Regional Planning Forum. The Consultant will facilitate the public workshop and prepare summaries of the discussions. The Consultant will also summarize the vision elements and strategies, tools, and policies identified in Task 5 for public review. All mailings and the placement of meeting advertisements will be performed by Region 2000.

Task 7 – Identify and Assess Institutional Issues
The Consultant will conduct a regional scan to identify institutional issues that could either help in the implementation of various concepts or hinder their implementation. Improved coordination between land use and transportation includes public agencies and private interests; community, special interest, and advocacy groups; agencies at the state and local levels; and elected officials at various levels of government. In order to develop potential win-win solutions, The Consultant will identify the differing missions, goals, and constituencies of all of these stakeholders and their potential impacts on concept implementation. As part of this task, The Consultant will develop an information flow diagram to illustrate the process by which land use and transportation decisions are made and to identify opportunities for better coordination and communication.

**Phase III: Analysis of Concepts**

Task 8 – Organize, Assess and Rank Concepts
The Consultant will prepare summary materials of all of the concepts, strategies, and policies identified in Tasks 5 and 6, including discussions of relative applicability to the Central Virginia region, implementation concerns, and relative support from forum and workshop participants. These summaries will also include input gained from the project website as well as input from other sources (telephone calls, letters, etc.). The Consultant will make use of the regional model and other databases to assess the potential effectiveness of various concepts at broad level. The Consultant will develop up to four discrete land use and transportation scenarios to test concepts that were identified at a more general level and that would be an end result of implementing policies and/or strategies that better link land use and transportation.

Task 9 – Summary of Implementation Issues
The Consultant will summarize the full range of implementation issues as related to the concepts developed in Phase II. These include applicability to the region, conformance to regional goals and objectives for transportation, land use, and economic development, potential effectiveness based on the existing environment, timeliness of implementation and potential local and state barriers, support by

various stakeholders, etc. The Consultant will also provide examples of where and how the concepts have been implemented in other locations, discuss implementation process used, and identify appropriate lead agencies for implementing the concepts.

Task 10 – Stage 2 Publicity
The Consultant will prepare a media release and a media information packet summarizing the study findings to date, and will arrange to meet with local media to continue to publicize the study. This task will seek to maintain a high-profile regional dialogue on this important issue.

Task 11 – Public/Stakeholder Review
The Consultant will prepare materials summarizing the efforts in Tasks 7 through 9 for presentation at the study's second public workshop. The Consultant will prepare media releases, meeting advertisements, meeting agendas and invitation letters, and other workshop materials for this public workshop. The Consultant will facilitate the public workshop and prepare summaries of the discussions. All mailings and the placement of meeting advertisements will be performed by Region 2000.

**Phase IV: Regional Action Plan**

Task 12 – Initial Regional Action Plan
The Consultant will organize concepts into an initial draft of the regional action plan. This working document will serve as a discussion point for the study committee, and will identify existing and future transportation and land uses in the region, the concepts identified in Phases II and III, as well as implementation issues.

Task 13 – Test and Rank Potential Concepts
In coordination with the study committee, the Consultant will explore the viability of the various concepts, refine these concepts, and sort and rank the concepts. Over the course of 4-6 weeks, the Consultant will work with the committee in developing the most promising concepts and testing these concepts using available databases and the regional transportation model, as appropriate. The analysis in this task is intended to take the analysis of concepts performed in Task 8 to a more detailed level based on input from the study committee. A draft final listing of the most promising concepts will be developed.

Task 14 – Draft Regional Action Plan
The Consultant will develop a draft of the Regional Action Plan that will provide information on both existing and future transportation and land uses in the region, the identification of key issues and issue areas within the region, the development of broad concepts/strategies, and the refinement of these concepts into detailed action items such as capital projects or changes in local ordinances. The draft Regional Action Plan will incorporate information as shown in the outline below:

1. Regional transportation and land use inventory
    a. Roadway network
    b. Transit network
    c. Bicycle/pedestrian network
    d. Air, intercity bus, and rail terminals
    e. Existing land uses and demographic data (from local GIS databases and US Census)
    f. Future land uses (refinement of data developed for the regional transportation model) – this would also involve the assessment of a limited number of different scenarios for land use and/or transportation in the region
2. Identification of geographic areas of opportunity and conflict with respect to land use and transportation (existing and future)
    a. Key transportation corridors
    b. Major activity nodes
    c. Consideration of appropriate land uses to match the various geographic scales that support different travel modes (i.e., walking scale within activity nodes, biking and transit between activity nodes, etc.)
3. Land Use and Transportation Strategies
    a. Hierarchy of transportation facilities (all modes), including the development of conceptual cross-sections or plans
    b. Broad land use strategies (including overall policies, approach, etc. – a preliminary listing of potential strategies for consideration is shown in Attachment A1)
    c. Strategies to address institutional coordination issues such as local agency and state agency coordination, cross-jurisdiction coordination, etc.
4. Action Plan
    a. Conceptual plans for capital projects for specific corridors/locations, including potential cross-sections, access guidelines, etc.
    b. Recommendations for changes in transportation service tied to existing and/or proposed land uses (i.e., transit line extensions)
    c. Transportation corridor management techniques
    d. Applicable local ordinances, policies, and procedures, including developer requirements (see table of initial listing of possible actions within this category)
    e. Implementation issues (cost estimates, overview of impacts, project timelines for implementation, potential funding, identification of potential implementation obstacles).
5. Appendix: Lessons Learned (useful for applying the approach used to other areas in Virginia)

Task 15 – Public/Stakeholder Review
The Consultant will prepare materials summarizing the efforts in Tasks 12 through 14 for presentation at the study's third public workshop. This workshop will allow for the public and stakeholders to review the draft Regional Action Plan and provide feedback to the study team. The Consultant will prepare media releases, meeting advertisements, meeting agendas and invitation letters, and other workshop materials for this public workshop. The Consultant will facilitate the public workshop and prepare summaries of the discussions. All mailings and the placement of meeting advertisements will be performed by Region 2000.

**Phase V: Local Plans**

Task 16: Organize Local Data and Other Information
The Consultant will collect additional data from local jurisdictions to support the development of local plans. The Consultant will meet individually with each individual jurisdiction to obtain this data and to identify key issues for each jurisdiction. With the exception of minor field visits when deemed necessary by the Consultant, the Consultant will not be collecting new data in the field such as traffic counts, transportation system inventory, etc.

Task 17: Develop Listing of Potential Local Actions
The Consultant will develop listings of potential actions for each jurisdiction using the draft Regional Action Plan as the starting point. It is anticipated that these actions would be refined and tailored to individual jurisdictions through a cooperative effort with the local jurisdictions. Transportation projects would be highlighted on GIS mapping to be included in each jurisdiction's Action Plan, with particular emphasis on areas that were identified as having potential conflicts between transportation and land use. The Consultant will propose refinements at the local level of the recommendations for ordinances that were developed at the regional level based on such factors as local goals and objectives, staff availability to guide/enforce particular requirements, etc. Particular attention will be paid to issues related to land uses and transportation at boundaries between jurisdictions.

Task 18 – Analysis of Local Actions
The Consultant will develop planning-level analyses to assist in determining the effectiveness of various actions. Based on this analysis, as well as implementation, timing issues, regional coordination issues, local actions will be ranked for each jurisdiction. The Consultant will work with local planning officials to further develop and refine those actions deemed to be most promising.

Task 19 – Local Government Coordination
The Consultant will prepare presentations summarizing the proposed actions for each jurisdiction. These presentations will include a PowerPoint slide show with additional large-scale mapping as deemed necessary. The Consultant will be available to make presentations for up to two sessions in each jurisdiction (total maximum of 10 presentations). At the discretion of local governments, these

sessions could be stand-along public meetings or public hearings in conjunction with planning commissions and/or Board/Council meetings.

Task 20 – Finalize Local Plans
The Consultant will work with local jurisdictions to finalize local plans based on input from local planning staff, planning commission members, as well as elected officials.

**Phase VI: Test Cases**

Task 21 – Organize Data
The Consultant will organize all available data (traffic counts, inventory data, available safety data, land use data, other infrastructure data, etc.) for the Route 29 and 460 Corridors. This data will include reports and back-up data from the following studies:

- Route 29 Corridor Management Study – Campbell County: July 2001. Performed by Region 2000 and Campbell County.
- Route 29 Corridor Management Study – Amherst County: June 2002. Performed by Region 2000 and Amherst County.
- US 460 Corridor Access Management Plan – Bedford/Campbell Counties: July 2003. Performed by VDOT.
- Route 460 Corridor Study (Bedford County from the City of Bedford to Route 811): May 2004. Performed by Region 2000 and Bedford County.
- Route 460 Corridor Study (Bedford County from the Botetourt County line to the City of Bedford): May 2005. Performed by Region 2000 and Bedford County.

The Consultant will not be collecting new data in the field such as traffic counts, transportation system inventory, etc.

Task 22 – Develop and Test Discrete Land Use/Transportation Scenarios
The Consultant will identify, in cooperation with the study committee, up to three scenarios to assess for each corridor (total of six scenarios in all). These scenarios will be developed based on the draft Regional Action Plan and the local jurisdiction, with the intent of assessing the effects/impacts of various actions in these draft documents. The trip generation and distribution assumptions as developed for previous studies will be modified as part of the scenario testing process. It is anticipated that the process of testing some scenarios may be less quantitative and will require strategic scenario-planning techniques.

Task 23 – Document Results
The Consultant will prepare a technical report for each corridor (Route 29 and Route 460) describing the methodologies and findings of the case study analysis.

The Consultant will produce up to 20 copies of each of these technical reports as well as up to 20 additional copies of each report on CD in Adobe PDF format.

**Phase VII: Regional Consistency**

Task 24 – Document Similarities and Differences in Local Plans
The Consultant will review the draft Regional Action Plan, local jurisdiction plans, and the findings of the test case studies and document similarities and differences. The Consultant will prepare written recommendations for modifications to address issues such as regional consistency, timing in implementation, and the extent to which jurisdictional boundary issues are addressed in a consistent and/or harmonious manner. The Consultant will review these differences, as well as proposed recommendations, with the study committee.

Task 25 – High Level Regional Meeting(s)
The Consultant will prepare for and execute a high-level regional meeting to review the final documents and to address any concerns with respect to consistency, implementation issues, etc. It is intended that the attendance at this meeting mirror that of the initial regional planning forum described in Task 5. The Consultant will prepare meeting advertisements, press releases, meeting materials, and will prepare written summaries of the meeting. All mailings and the placement of meeting advertisements will be performed by Region 2000.

Task 26 – Update Regional Action Plan
The Consultant will update the draft Regional Action Plan in response to concerns from the study committee as well as areas identified in the regional meeting described in Task 25.

**Phase VIII: Documentation**

Task 27 – Final Draft Documents
The Consultant will prepare final drafts of the regional action plan as well as the local jurisdiction plans. The Consultant will produce up to 25 copies of each document, as well as PDF versions which will be available for download from the project website.

Task 28 – Stage 3 Publicity
The Consultant will prepare a media release and a media information packet summarizing the study process and findings, and will arrange to meet with local media to continue to publicize this information.

Task 29 – Public/Stakeholder Meeting
The Consultant will prepare materials summarizing the draft reports for presentation at the study's fourth and final public workshop. The Consultant will prepare media releases, meeting advertisements, meeting agendas and invitation

letters, and other workshop materials for this public workshop. The Consultant will facilitate the public workshop and prepare summaries of the discussions. All mailings and the placement of meeting advertisements will be performed by Region 2000.

Task 30 – Produce Documents

The Consultant will produce final reports as follows:

- Regional Action Plan: 75 copies, plus 75 CDs which will include the full report in Adobe PDF format
- Local jurisdiction plans: 15 copies of each, plus 15 CDs (for each jurisdiction) which will include the report in Adobe PDF format
- Test Case Technical Reports: 20 copies of each report, plus 20 CDs (for each test case) which will include the report in Adobe PDF format