

TRANSPORTATION

Introduction

Transportation provides individual mobility, modifies behavior, and shapes activity patterns. It affects the sense of community, the environment, the economic base, and the manner in which visitors perceive the community. The County's transportation facilities include interstate highways, state primary and secondary roads, private neighborhood streets, public transportation services, and intra- and inter-regional facilities such as air, rail, bus, and trucking services, as well as sidewalk, bicycle, and greenway facilities. The County actively manages these facilities and services to maintain their quality and optimize their capacities. These efforts are directed through the County's policies and ordinances, Comprehensive Plan, Six-Year Improvement Plan, sidewalk and bikeway programs, and cooperative efforts with the state and the Hampton Roads Transportation Planning Organization (HRTPO).

Consideration of Transportation Issues

Transportation issues focus largely on roads. While important, a well-functioning transportation system requires incorporation of other elements. The most significant include (1) making other modes viable through supportive land use patterns, increased safety for pedestrians and cyclists, and increased transit options; (2) centralizing rather than spreading out commercial development along roads and managing access thereto; (3) increasing interconnectivity; and (4) increasing affordable housing and job opportunities to reduce in and out commuting.

Policy developed in this plan emphasizes the need to develop and maintain an efficient transportation network that reinforces the overall goals of the Comprehensive Plan, including consideration and development of transportation modes which serve as alternatives to the automobile. Emphasis is placed on coordinating land use development with transportation capacity. Recognition is given to a variety of transportation modes available to the County. Consideration for future roadway improvements are based upon projected traffic volumes and road capacities, anticipated development, and the County's vision for specific roadways. Recommendations seek to preserve roadway mobility, capacity, and the overall ambiance of the County.

Complete Streets

For decades roads have been designed solely for use by motor vehicles with little consideration for the needs of other types of users. To remedy this, the Comprehensive Plan encourages the development of new or retrofitted "complete streets" in conjunction with VDOT's Policy for Integrating Bicycle and Pedestrian Accommodations and new Secondary Street Acceptance Requirements (SSARs). A complete street is a roadway designed to accommodate pedestrians, bicyclists, motorists, and transit. There are a number of techniques used to design complete streets, many of which have the following characteristics:

- Reduced lanes widths,
- Sidewalks and multiuse paths,
- Consolidated driveways,
- Raised medians with pedestrian refuges,
- Enhanced pedestrian crossings with zebra-style crosswalk markings and countdown timers,
- On-street parking,
- Intersections with sharp turning radii (to reduce vehicle speeds), and
- Bike lanes separated from travel lanes by physical barriers or striping.

In addition to increased attractiveness, this type of design encourages pedestrian and bicycle use, increases safety, and can ease congestion. *Figures T-1 and T-2* are examples of complete streets for new developments. *Figure T-3* is an example of a suburban arterial complete street retrofit.

Figure T-1: Urban Complete Street Intersection Design

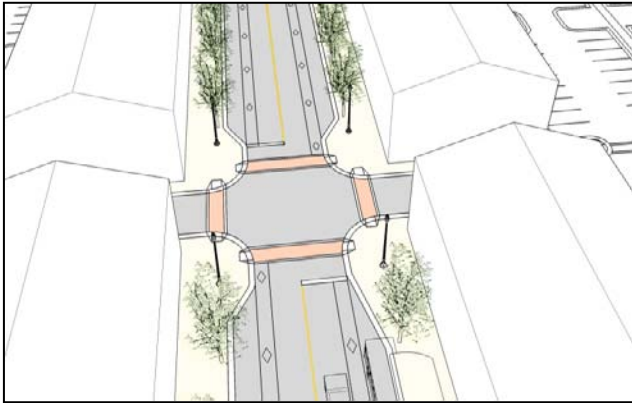


Figure T-2: Subdivision Complete Street Design

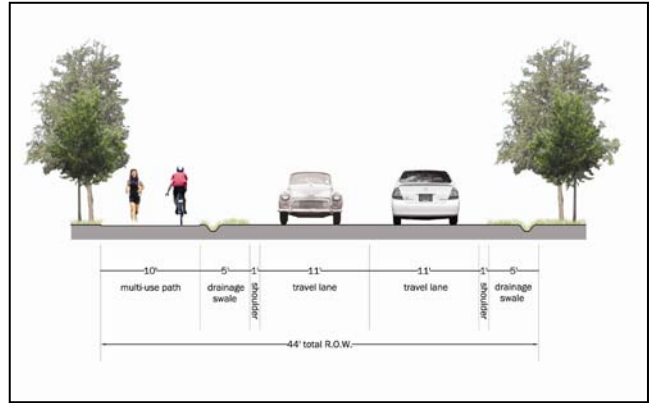


Figure T-3: Suburban-Style Complete Street Retrofit



Figures Courtesy of Renaissance Planning Group

Connectivity

Connectivity is a term used to describe interconnection between developments. This interconnection can refer to the streets within a single development, streets within separate developments, or access for pedestrians and cyclists to neighboring properties. Connectivity is an essential part of comprehensive transportation planning because it provides roadway users with more options to get to a destination and often reduces travel distances.

The state has adopted new SSARs that often require interconnectivity between new developments. The SSARs are the minimum standards for new streets to be accepted by VDOT for public maintenance. For connectivity to be an effective tool to mitigate congestion and shorten trip distances, the County and VDOT must work together to ensure newly developed properties offer a logical connection between neighboring properties. In certain circumstances, SSAR pedestrian requirements may be more stringent than County ordinances.

Access Management

Access management is the planning, design, and implementation of land use and transportation strategies to maintain a safe flow of traffic while accommodating the access needs of adjacent development. In particular, good access management accomplishes the following:

- Reduces the number of crashes, injuries, and fatalities;
- Provides greater mobility that enhances the economic vitality of an area;
- Reduces the need for additional road capacity; and
- Increases the traffic carrying capacity of existing roads.

Access management works by regulating the amount and location of intersections, particularly those of commercial development.

Figure T-4: Unregulated access management

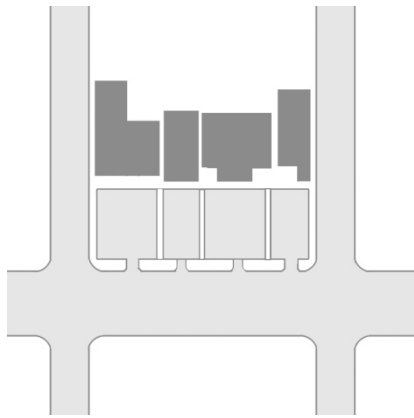
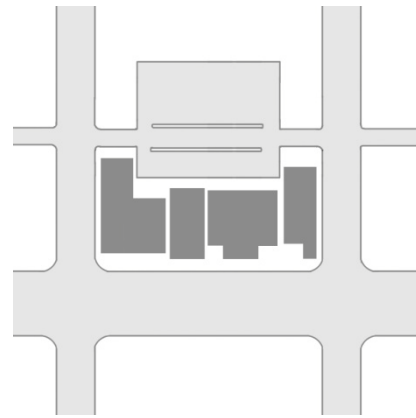


Figure T-5: Regulated access management



Figures courtesy of Renaissance Planning Group

Figure T-4 represents a typical arterial street with four businesses, each with its own parking lot. Note that ingress and egress into the center is done from the principal arterial. This design reduces the capacity of the roadway and increases the likelihood of vehicular collisions. However, *Figure T-5* represents what happens if access to the development is managed. In this case, access would no longer be from the principal arterial and parking is shared with multiple businesses. Also note that the storefronts are closer to the street. This increases store visibility, improves access for pedestrians, and helps promote a sense of place.

Property access from a state maintained road is guaranteed; however, through access management regulations, VDOT has the authority to regulate the number of entrances a new development may have and where they may be placed. VDOT can also require new developments to attempt to gain access through a neighboring development's curb cut. Additionally, the County has the ability to regulate access by proffers and special use permit conditions in cases requiring legislative approval.

If new developments adhere to complete streets, connectivity, and access management principles, traffic congestion on major arterials will decrease and commuting by bicycle or foot will become more realistic alternatives for reaching a destination.

Transportation Funding

In James City County, the state has overall responsibility for the construction, operation, and maintenance of public streets and highways. To facilitate the prioritization of state transportation spending in the County, the Board of Supervisors annually requests that the state fund certain road projects through the Six-Year Improvement Program (SYIP). Due to the enormous cost of many road improvements, it is not uncommon for roadways to remain on the SYIP for multiple years before undergoing construction.

Funding for road improvement projects has been increasingly limited over recent years as state and federal transportation resources continue to decline and VDOT shifts its focus to maintenance of existing roads and emergency response needs. Therefore, it is important for the County to establish clear prioritization of road improvements to ensure that the most important projects receive funding, and to concentrate funding where it is most needed. Emphasis should be placed on roads within the Primary Service Area (PSA), with efforts outside the PSA focused on safety projects rather than on projects that add capacity. The County should aggressively pursue any funding opportunities available for transportation projects. As funds for new roads and widening are limited, less expensive projects, such as bike lanes, multipurpose trails, and sidewalks, could help alleviate congestion on road segments where money for widening is unavailable.

Hampton Roads Transportation Planning Organization

The Hampton Roads Transportation Planning Organization (HRTPO) is a transportation policy-making body comprised of representatives from local governments and transportation agencies in the Hampton Roads region. The HRTPO acts as the metropolitan planning organization (MPO) for the region, ensuring that existing and future expenditures for transportation projects and programs are based on a continuing, cooperative, and comprehensive planning process. All federal funding for transportation projects and programs is channeled through the HRTPO.

Non-Roadway Components of the County's Transportation System: Inventory and Planning

Sidewalks

James City County adopted its *Comprehensive Sidewalk and Trail Plan* in 1989 and last amended it in 1998. This plan helps meet pedestrian needs generated by current and future growth, while limiting the need for post-development remedial sidewalk projects constructed with public funds. A majority of sidewalks have been constructed by the private sector in conjunction with land development; however, many have been constructed through County efforts using state and federal grants.

Sidewalks and multi-use paths in the County mainly have been provided through County initiatives or in agreement with private developers, either voluntarily or as required under development regulations. The Comprehensive Plan strongly encourages continued implementation of the plan. One of the actions in the Comprehensive Plan is to update the *Comprehensive Sidewalk Plan* and amend the Zoning Ordinance to provide developers with more flexibility in addressing the needs of bicyclists and pedestrians and the ability to provide a facility that is compatible with surrounding land uses.

Bikeways

The *Regional Bicycle Facilities Plan*, initially adopted in 1993 and updated in 1998, was developed under the direction of the Regional Issues Committee in cooperation with citizens from James City County, York County, and the City of Williamsburg. Since 2000, the three jurisdictions have received over \$3 million in state and federal funding for the construction of bikeways consistent with this plan. The largest source of funding comes from the federal government through the Enhancement Grant program and the Congestion Mitigation and Air Quality (CMAQ) program.

The *Regional Bicycle Facilities Plan* consists of three different types of bicycle facilities. Descriptions and sample illustrations of these are listed below.

1. Multi-Use Path – Constructed separate from the roadway. Eight to twelve feet wide.

2. Shoulder Bike Lane - Paved and striped shoulders on the side of the roadway. Four to six feet wide.
3. Shared Roadway - Share the existing roadway. No paved markings. Signs only.

Figure T-6: Example of Multi-Use Path

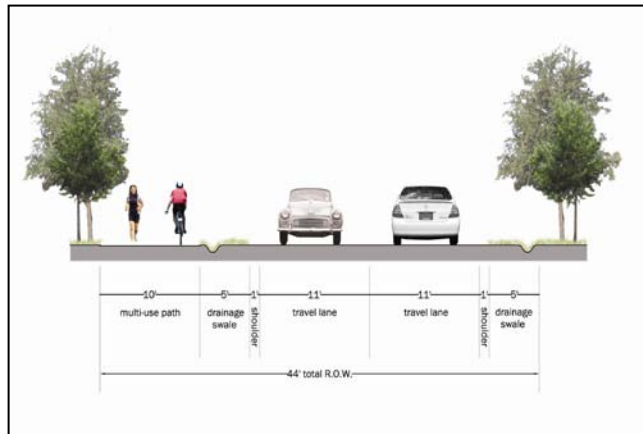


Figure T-7: Example of Shoulder Bike Lane

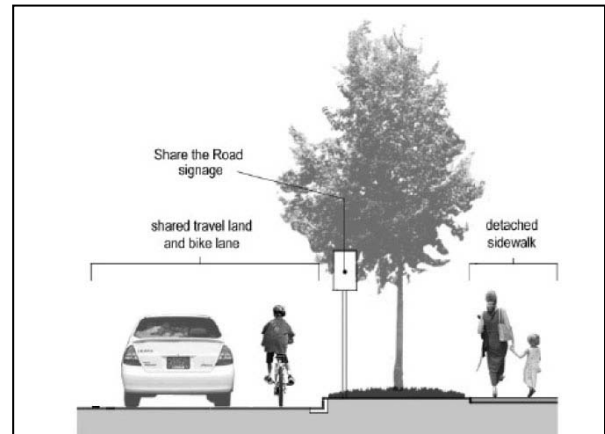
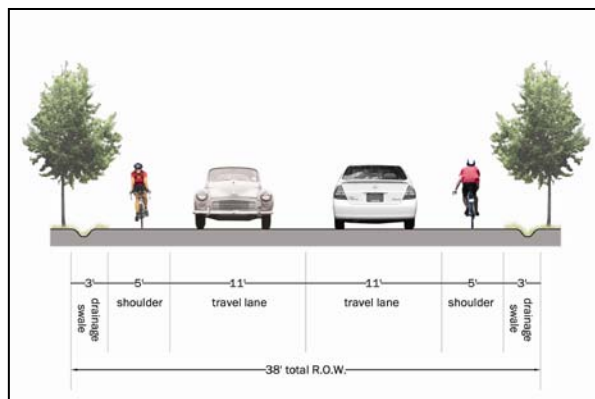


Figure T-8: Example of Shared Roadway



Figures courtesy of Renaissance Planning Group

The Historic Triangle Bikeways Advisory Committee (HTBAC), consisting of citizens and staff from the City of Williamsburg, York County, James City County, and representatives from the National Park Service, the College of William and Mary, Colonial Williamsburg, is responsible for monitoring the construction of bike facilities and ensuring that all new facilities and future plans meet the public's desires and needs.

Most of the funded bikeways are shoulder facilities intended to serve primarily as transportation rather than recreation purposes. HTBAC, in cooperation with the James City County Division of Parks and Recreation, updated the bikeways plan to address a broader range of trip purposes and user groups during the 1998 *Bicycle Facilities Plan* amendment. This cooperative effort is expected to continue with future plan amendments.

Greenways

More specifically discussed in the Parks and Recreation section of the Comprehensive Plan, greenways are defined as linear open spaces that are managed for conservation, recreation, and/or alternative transportation uses. Greenways often follow natural features (ridgelines, stream valleys, and rivers), cultural features (canals, utility corridors, abandoned rail lines, zoning buffers,

roadways), or breaks in the land pattern. Although each greenway is unique, most greenways are networks of natural open space corridors that connect neighborhoods, parks, and schools to areas of natural, cultural, recreational, scenic, and historical significance. Blueways are aquatic greenways that provide water access opportunities for small watercraft such as canoes and kayaks. These passageways link people and places to nature for the enjoyment and enhancement of the community. Greenways and blueways provide corridors that bicyclists, pedestrians, and others can use to get from one place to another, free from motor vehicle conflicts.

Two of James City County's most popular trails are the Greensprings Greenway Interpretive Trail and the Capital Trail. The Greensprings Trail is a three-mile, soft-surface trail that loops through a landscape of ponds, wetlands, and forests. The trail is on wetlands adjacent to Mainland Farm, the oldest continuously cultivated farm in America. The trailhead at Jamestown High School provides convenient parking and access to the Virginia Capital Trail. The multi-use path for the Capital Trail will link Jamestown and Richmond upon its completion. Through both trails are maintained by VDOT, the County will work in cooperation with the state and other local agencies to ensure its continued adequacy for its users.

Multi-Use Paths

Paved multi-use paths complement the range of non-vehicular facilities by providing an option that can serve a wide range of users in one facility. Multi-use paths are typically paved and eight to ten feet wide, and are typically found in rural and suburban settings. When designing or retrofitting a road to accommodate cyclists and pedestrians, it is important to consider the context before deciding on the type of facility. In historic or more urban and compact settings, dedicated bike lanes and sidewalks may be a more appropriate and functional choice.

The *Comprehensive Sidewalk Plan*, the *Regional Bikeways System* and the *Greenway Master Plan* all promote a shared goal of emphasizing alternative modes of transportation. As such, shared facilities that combine the benefits of each plan should be developed whenever possible in an effort to unify the effort of providing these types of facilities.

Williamsburg Area Transit Authority

Williamsburg Area Transit Authority (WATA), formerly known as Williamsburg Area Transit, began operation in 1977 to provide a public transportation system to the citizens of James City County, the City of Williamsburg, and the Bruton District of York County. WATA's mission is to provide a public transit option for the Greater Williamsburg region through a safe, efficient, and accessible transit system that is user friendly, environmentally sensitive, and supports the needs of the community.

Improvements over the last five years include new routes, increased hours, Sunday service, and regional connections to Surry County and Newport News. WATA has also established three transportation centers--downtown Williamsburg (serving as a regional hub where taxi, intercity, public transit, and rail connect), the intersection of Richmond and Centerville Road (serving the Stonehouse District), and the Colonial Williamsburg Visitor Center--allowing seamless connections to Jamestown and Yorktown. These improvements have resulted in unprecedented use of services. From FY 2002 to FY 2008, ridership increased from 137,000 annual trips to 771,000 annual trips, an increase of over 400%. As a new association, WATA does not have an adopted long-range plan. In addition to passenger fares, WATA is heavily funded by federal monies and by contributions made by the City of Williamsburg, James City County, and York County.

WATA has ten routes meeting various community needs such as commuter, recreational, and tourism travel by providing a coordinated system through fixed routes and transportation for the disabled. Other transit-related services, such as those provided by Williamsburg/James City County Community Action Agency, Colonial Williamsburg, the Historic Triangle Senior Center, and private taxi services offer additional specialized services to area residents.

TRAFFIX

TRAFFIX is a cooperative public service that promotes transportation alternatives by working with employers in the region to provide substitutes to driving to work. TRAFFIX programs include Commuter Checks (tax-free vouchers for transit passes, tickets, or vanpool fares), the Guaranteed Ride Program, NuRide Reward Program (a reward-based ridesharing system), vanpooling, van leasing, park and ride locations, and assistance with telecommuting or variable work schedules. It reports to an advisory board comprised of representatives from each of the transportation planning groups: HRPDC, Hampton Roads Transit (HRT), VDOT, and the Virginia Department of Rail and Public Transportation (VDRPT). WATA has applied for state and federal funding through the VDRPT grant application process to bring TRAFFIX services to Williamsburg.

Rail Travel

A main line of the CSX Railroad runs north to south through James City County. This line connects in Richmond with the broader network of the CSX transportation system and connects with the ports of Hampton Roads in Newport News and to the Southside ports in Portsmouth. Rail plays an important role in moving freight and passengers to and from James City County.

Conventional passenger rail service is available in James City County from the National Railroad Passenger Corporation (AMTRAK). There are two trains that operate between Newport News and the cities of Boston, New York, and Washington, D.C. Amtrak is currently examining the possibility of increasing service to the Hampton Roads region and examining the possibility of new alignments to avoid delays from CSX freight trains. In the future, James City County has the potential to be served by express bus, commuter rail service, or high speed rail as part of the Southeast High Speed Rail Corridor. The County is supporting the HRPDC and Virginia Department of Rail and Public Transit in their studies for this corridor. Successful implementation of expanded rail travel will require an effort to cultivate transit-oriented developments by locating new medium and high-density development along and in proximity to station locations as well as the development of effective feeder bus, vanpool services, and park-and-ride lots to provide better access to rail transit for those persons not living within proximity of the rail corridor.

Important to the transportation system as well as the economy of the area is freight movement along the CSX lines. Major users of the line are the Anheuser-Busch InBev Brewery, Ball Metal, Jack L. Massie Contractors, Henry S. Branscome, Inc. and several other aggregate companies. The line has a medium-high density classification, which means it carries ten to twenty million gross tons annually. Industrial rail traffic is important because it ensures the line against abandonment. James City County can increase the viability of the railroad by encouraging new industries to locate along or near the line.

The Comprehensive Plan recognizes the importance of rail service as a viable transportation mode and supports the continued maintenance of existing and potential industrial rail access to the County's designated industrial sites. Rail activities should be monitored in an effort to determine the impact of potential service or design changes in the County and region. Finally, consideration

should be given to improvements which would increase safety at the seven railroad crossings that exist in the County.

Air Travel

The James City County area is served by three major commercial airports within one hour's driving distance: Newport News-Williamsburg International Airport in Newport News (20 minutes), Richmond International Airport (1 hour), and Norfolk International Airport (1 hour). These three airports offer daily commercial passenger flights serving both domestic and international travel. The Williamsburg-Jamestown Airport is a small general aviation facility located within the County. It is a base for a flight school and small private planes. There is no scheduled commercial passenger service at this airport and the population served is confined to tourists and business clientele who travel by private plane. The 3,200 feet of runway can handle most turbo-prop aircraft as well as light corporate jets. Currently, the County is contemplating its next steps after reviewing the results of the draft James City County Airport Feasibility Study regarding the demand for aviation services and the alternatives available to serve this demand in the James City County area.

Water Travel

Another important part of the transportation system in James City County is the Jamestown-Scotland Ferry service on the James River. This is a heavily used mode of travel that links Surry County with the James City County/Williamsburg area. Surry County has a large pool of workers who desire employment in the James City County area. The four ferry boats that carry commuters and tourists alike are part of the only 24-hour state-run ferry in operation in Virginia. The Comprehensive Plan supports continued 24-hour operation of this critical service.

The former BASF site in James City County was served by barge on the Wood Creek side until the 1980s. Both Wood Creek and Skiffe's Creek offer opportunity for barge access. The James River provides direct access to the Port of Virginia, the busiest ice-free harbor (by tonnage) in the world.

Roadway Components of the County's Transportation System: Inventory and Planning

Roads

James City County has 189.8 lane miles of primary roads and 593.4 lane miles of secondary roads, all of which as public roads are maintained by VDOT. These roads serve various purposes and are classified according to their function, from local roads and collectors to arterials and freeways. **Map T-1**, James City County Roadway Inventory Map, depicts all roads in the Federal Aid System. New roads are constructed by either VDOT or private developers. Roads are added to the state system only if a developer constructs them to VDOT standards and the County petitions the state for their acceptance in the maintenance system. Private roads exist in a number of areas throughout the County where permitted by ordinances and private agreements are in place to ensure their continued maintenance. The appendix contains additional information regarding James City County's roadway classification system.

Road Capacity and Level of Service

Two terms which are often used to describe the performance of roads and intersections are capacity and Level of Service. Road capacity is the rate at which vehicles can reasonably be expected to traverse a section of roadway under ideal conditions. Ideal conditions include adequate roadway geometric design and the free flow of traffic. For arterial roadways, the ideal capacity is usually set at 1,900 vehicles per lane per hour. It is adjusted downward at intersections,

where conflicts occur, and where roadway geometry reduces the speed at which vehicles can move safely. While capacity is a static metric independent of volumes, Level of Service (LOS) indicates the deterioration of the vehicle flow rates as increasing volumes approach the capacity of the roadway. With increasing volumes and decreasing maneuvering space, the ability of motorists to maintain free flow speeds is compromised, average vehicle speeds decline, and the flow rate along the arterial roadway decreases.

As an operational measurement, Level of Service is determined by the amount of delay at an intersection or by the density of vehicles on a road segment. A level of service can be determined at both a micro and macro level from individual turning movements to intersections and roadways. For example, a car attempting a left turn may have to wait 60 seconds to execute the movement, while the traffic in an adjacent thru lane passes by in free flow conditions. In this example, the LOS of the left turn would be "E" or "F" while the LOS of the thru lane would be "A." Depending on the volumes for each movement, the intersection as a whole may operate at a LOS "A," masking the failure of the left turning movement. LOS can also be affected by traffic conditions at different times of day.

James City County uses both measurements during transportation planning and development review. For instance, per ordinance requirements, if a development proposal is projected to generate 100 or more peak hour vehicular trips as determined by the Institute of Transportation Engineers standards, the applicant must submit a traffic impact study (TIS) demonstrating the effect of development proposal on the road network. During consideration of a rezoning or special use permit application, the Board of Supervisors uses the results of the TIS as one factor in its decision-making process. Among other issues weighed in previous development proposals, the County is generally supportive of projects that do not degrade surrounding streets and intersections below a LOS "C." In practical terms, this means that the signalized intersection providing access to the development can not cause more than 35 seconds of delay and development generated traffic does not destabilize the traffic flow on the surrounding streets.

The County does not have policy requiring a specific LOS be met; the expectations are often nuanced in terms of other factors at play such as the character of the road, the desire for high density development, or a focus on pedestrian and transit oriented development for example. Therefore, traffic impact has been used as one factor in the overall development review process. New Town is an example where the Board has accepted a LOS of less than "C" for lane groups to allow a more urban, pedestrian-friendly environment.

Transportation Planning

To monitor the ability of state maintained roads to continue meeting the needs of residents, businesses, and visitors, VDOT and the County regularly count traffic on most arterial and collector streets. As VDOT conducts counts every other year, the County conducts the counts on off years to avoid duplication. These counts are closely monitored to evaluate growth trends and to see if and where capacity improvements such as additional travel lanes may be needed in the future.

Beyond the immediate timeframe, HRPDC produces long-range transportation planning information for James City County. Using a computerized modeling tool, the HRPDC assigns projected future traffic to the regional transportation network and determines what transportation infrastructure will be needed to handle the future traffic. Currently HRPDC has published traffic predictions for James City County for 2030, which have been adopted by the HRTPO in the 2030

Long Range Transportation Plan. The County uses the HRPDC results to plan for large scale improvements that may take many years to finance and construct. Preparations are now underway for the 2034 traffic projections.

In 2008, James City County contracted with URS Corporation to assist with analysis of future traffic conditions as part of the update to the transportation element of the Comprehensive Plan. URS utilized HRPDC's travel demand model as the basis to examine build-out conditions under various land use scenarios and to determine traffic forecasts for 2035. Attached table *T-1* depicts 2035 transportation projections with cost estimates associated with recommended road improvements.

Roadway improvements such as added through and turn lanes, improved intersections, and traffic signals are potential solutions to managing future congestion. Alternatively, managing the amount of traffic growth is another means of reducing future congestion. This can be accomplished by carefully monitoring growth and development in the area of the roadway segment. This study does not presume any particular solution for any specific roadway segments. It merely points out those roadway segments that are likely to incur congested conditions in 2035 under the given assumptions and employment growth.

Corridor Visions

The following is a summary of major roadways in the County and improvement recommendations that will help ensure these roads remain functional and attractive in future years.

Interstate 64

Current traffic volumes warrant the expansion of the interstate from Newport News to Richmond. As the interstate serves as the primary gateway to the Historic Triangle, the State needs to take great care to ensure the design of any expansion guarantees the highway will maintain its aesthetic character. The expansion should be built around the idea of corridor preservation and landscaping as the core design issue. It is recommended that in weighing various design proposals, VDOT explore the tradeoffs between widening the roadway within the median versus widening along the edge of the right-of-way in terms of preserving the natural topography and trees before any final plans are adopted.

Route 199

Route 199 will remain a very heavily traveled roadway. Currently, there are no scheduled road improvements; however, the addition of another travel lane in each direction from Jamestown Road to John Tyler Highway will likely be needed due to population growth. Given the projected traffic volumes, the County should avoid the addition of any curb cuts or intersections. Additionally, the County should pay particular attention to development along Jamestown Road, as the west bound left-turn lane is often near capacity and cannot be addressed cost effectively. As one of the gateways to the Historic Triangle, the road should continue to be well maintained and landscaped. Road widening projects should be engineered to minimize the reliance on the landscaped median. As bicycles and pedestrians are prohibited from the roadway, consideration needs to be given to parallel multi-use facilities. Within the past five years Route 199 has been widened to four lanes from Pocahontas Trail to Jamestown Road.

Jamestown Road

Projected traffic volumes would normally justify the widening of this road to a four-lane facility between Route 199/City of Williamsburg and Ironbound Road. Noting that construction of such a facility would be disruptive to adjacent land uses and homeowners, as well as to the visual character of the road, the Comprehensive Plan recommends that it be maintained as a two-lane facility with additional turn lanes and access controls. Residential or commercial development that adds significant traffic along this corridor is strongly discouraged. Recently, a shoulder improvement project was constructed in 2007 which benefits cyclists between Lake Powell and Greensprings Road.

Route 60 East Relocation/Pocahontas Trail

A relocation and upgrading project, this realignment will divert traffic from Pocahontas Trail, which experiences traffic congestion from industrial and tourist traffic. This proposed route parallels existing Pocahontas Trail adjacent to the CSX Railroad and then extends across the GreenMount property and Skiffe's Creek and into Newport News, where it will connect the Route 60 East/Fort Eustis Boulevard interchange. This four-lane facility is necessary to promote future industrial development in the Skiffe's Creek industrial area and to meet local traffic needs. The traffic modeling suggests that Pocahontas Trail needs to be a four-lane facility in both the section extending from the York County line to BASF Road and the section extending from BASF Road to the Newport News line. The project has been split into two phases, with the intent to widen or relocate the section from BASF Road to the Newport News city line first, and then assess the need for widening or relocating the upper section. If possible, the County would like to avoid widening the upper section. The projected cost of the two phases of relocating Route 60 is \$68 million. Careful coordination of transportation and development is extremely important along this road as, in the near term, funding for any improvements is unlikely. Also, the County should investigate connections between Pocahontas Trail, Merrimac Trail, and Interstate 64. The projected cost for the Skiffe's Creek Connector is \$35 million. The addition of left-turn lanes along Pocahontas Trail from the fire station to Newport News would be a cost-effective temporary solution until the new alignment is in place. Due to the high traffic volumes, pedestrian accommodation should be provided by an adjacent multi-use trail rather than sidewalks abutting the road. The projected cost for the total project is \$103 million.

Richmond Road

Although future volumes indicate the potential need for widening Richmond Road between Centerville Road and the City of Williamsburg/Rochambeau Road to Croaker Road, it is recommended that Richmond Road remain four lanes. Widening in these sections, which includes Norge, should be avoided or limited due to the physical limitations and the negative impacts on existing uses and the character of this historic community.

Future commercial and residential development proposals along Richmond Road should concentrate in planned areas and will require careful analysis to determine the impacts such development would have on the surrounding road network. Minimizing the number of new signals and entrances and ensuring efficient signal placement and coordination is crucial. The HRPDC developed guidelines for signal placement on Richmond Road as part of its *Hampton Roads Access Management Model*. These guidelines should be followed by new developments. New developments should be permitted only if it is determined that the project can be served by the existing road while maintaining an acceptable level of service or if the impacts can be adequately addressed through road and signalization improvements. If public funds are not included in approved state road plans for such improvements, private funding is expected prior to

development approval. Through the villages of Toano and Norge, sidewalks should be encouraged for new development to preserve a traditional small village feel; however, outside these areas, multi-use paths are recommended to separate pedestrians from heavy traffic flow.

John Tyler Highway (Route 5)

Monticello Avenue has supplemented capacity in the John Tyler Highway (Route 5) corridor. John Tyler Highway is projected to need improvements between Greensprings Road and Route 199; however, four-laning is strongly discouraged. Turn lanes and minor intersection and pavement improvements will still be needed for this roadway. Such improvements should be consistent with the Community Character Corridor and Scenic Byway designations. Additional residential or commercial development along this corridor beyond that currently planned is strongly discouraged. Multi-use paths are encouraged for new development along the highway.

Monticello Avenue

Currently, access is strictly limited onto this roadway. Given very limited funding, strong efforts should be taken to avoid widening Monticello Avenue to four lanes in any additional locations through coordinated development and continued access management. For the segment from Route 199 to News Road, efforts should be made to maximize capacity through geometric improvements and signal coordination. The addition of new traffic signals is discouraged.

Longhill Road

Based on current and projected volumes for Longhill Road from Route 199 to Olde Towne Road an additional travel lane northbound is recommended. Projected 2030 volumes indicate the need to widen Longhill Road from Olde Towne Road to Centerville Road. The County's preference is to not widen Longhill Road in this segment until more detailed study demonstrates the need and provides an acceptable context-sensitive transportation solution. A location study for widening Longhill Road was planned to be conducted by VDOT to determine what options can realistically be implemented to increase capacity and improve safety for all users; however, this study has been put on hold due to state budget cuts. It is encouraged that future development accommodate a multi-use path along the corridor for pedestrian and bicycle accommodation.

Centerville Road

Presently a two-lane road, future traffic conditions predict the need to widen the section from Longhill Road to Richmond Road to four lanes. The County should continue to exploit current capacity of the road by adding turn lanes and discouraging suburban style residential development on the western side of the road. To preserve the rural character of the road, multi-use trails are recommended rather than sidewalks.

Croaker Road

The section of Croaker Road extending from Richmond Road to Rose Lane is projected to warrant road widening based on future traffic projections; however, due to the topography and the CSX Railroad bridge along this corridor, road widening would be very expensive. It is recommended, therefore, that careful land use planning, traffic coordination, and the addition of turn lanes be utilized.

News Road

News Road from Centerville Road to Monticello Avenue is a winding road with poor sight distance and sharp curves. As development pressure continues along the corridor, coordination with VDOT and future developers is essential to increase sight distances. Recommended road

improvements include shoulder strengthening and the addition of reflectors along the side of the road. Rezoning and special use permit applications should take these recommendations and other needed improvements into account to minimize the impacts of additional development. Any shoulder strengthening project should include the addition of a shoulder bike lane.

Olde Towne Road

Current conditions and future traffic modeling warrant widening Olde Towne Road from two lanes to four from Richmond Road to Longhill Road. Should Olde Towne Road be widened, the project phases should include widening Longhill Road from Olde Towne Road to Route 199 in order to avoid bottlenecks at the Longhill Road/Olde Towne Road intersection. A multi-use path along the corridor is recommended.

Mooretown Road Extension Consideration

It has been recommended to extend Mooretown Road from its current terminus in York County to Rochambeau Drive. Development within the vicinity of the proposed Mooretown Road extended should be discouraged until master plans are approved and infrastructure is planned to handle intensive development that does not solely rely on Richmond Road. Private funding is expected, although public and private efforts may be beneficial to fund infrastructure improvements.

Ironbound Road

Ironbound Road between Monticello Avenue and John Tyler Highway is projected to require additional travel lanes in each direction. Recently, the Five Forks intersection was improved and a shoulder bike lane is anticipated in the near future. Any future improvements should occur in a context-sensitive manner, considering the Community Character Area of Five Forks. A multi-use trail along the side of the road is encouraged.

Community Sustainability Spotlight

Having a viable multi-modal transportation network is fundamental to maintaining a sustainable community as it allows visitors, citizens and businesses means to interact on a personal level. This interaction spurs commerce, development, and facilitates social networking--the basis of a livable community. A sustainable transportation system provides for the efficient movement of goods and people and does not favor one type of user to the detriment of others. James City County, by providing a well-connected roadway system, sidewalks, bikeways, multi-use paths, and transit would not only be working toward a sustainable infrastructure, but would also be reducing emissions and protecting the health, safety, and welfare of its citizens. James City County should continue to implement its comprehensive transportation vision to ensure the needs of current and future generations of citizens are met.

Citizen Commentary

In the Virginia Tech Citizen Survey, nearly 60% of respondents rated the roads and ease of car travel in James City County as good or excellent; however, concerns were raised about increasing congestion. Congestion was one of the most frequently mentioned words during Community Conversations. Many people felt that congestion is a problem on the County's major roads and thoroughfares, specifically along Route 199, Route 60, and Interstate 64.

Residents provided both positive and negative comments regarding the construction of additional roads to relieve congestion. Some respondents felt that certain roads need to be widened and that stoplights should be coordinated. The majority of respondents see controlled development in high

traffic areas as an immediate solution. Residents expressed desire to see cumulative impact studies for traffic for new development. They have noticed that mixed-use areas can reduce the need for auto use and considered this an important concept for future development.

Seventy-eight percent of respondents thought bike paths and walking trails are important. Participants cited the need for more user-friendly bike paths and walkways. Completion of greenways trails and a sidewalk master plan were seen as favorable methods to accomplish this.

Goal: Provide citizens, businesses, and visitors of James City County with an efficient, safe, and attractive multimodal transportation system that reinforces or is consistent with the goals and land use patterns of the Comprehensive Plan.

Strategies and Actions:

1.1. Foster a safe, effective, and efficient transportation system that supports the County's land use, community character, and high quality of life.

- 1.1.1. Ensure that new development follows recommended densities, intensities, and development patterns that will serve to preserve the road capacities and support the Community Character Corridor designations of existing and proposed roads.
- 1.1.2. Expect new developments to maintain an acceptable Level of Service on the surrounding roads and intersections consistent with the land use context (rural, suburban, urban) and the functional classification of the roadway. Ensure that new developments do not compromise planned transportation enhancements. New development should minimize the impact on the roadway system by:
 - a. Limiting driveway access points and providing shared entrances, side street access, and frontage roads;
 - b. Providing a high degree of interconnectivity within new developments, adjoining new developments, and existing developments using streets, trails, sidewalks, bikeways, and multipurpose trails;
 - c. Concentrating commercial development in compact nodes or in mixed use areas with internal road systems and interconnected parcel access rather than extending development with multiple access points along existing primary and secondary roads;
 - d. Pursuing active outreach for travel demand management (TDM) such as flexible work schedules, off-site work arrangements, bike racks, and telecommuting;
 - e. Implementing strategies that encourage shorter automobile trips and accommodate walking, bicycling, and use of public transit;

- f. Facilitating the efficient flow of vehicles and minimizing delay through means such as the use of advanced traffic management technology.
- 1.1.3. Identify road segments with future moderate to severe road capacity deficiencies and develop a plan to mitigate congestion that may include one or more of the following actions:
 - a. Adding the road segment to the Six Year Improvement Program and considering public-private partnerships among other mechanisms to fund proposed improvements;
 - b. Precluding high traffic generating uses in or near the affected road segment;
 - c. Developing a distributed grid of routes to provide better traffic distribution in developed areas;
 - d. Maximizing current road capacity by adding turn lanes or travel lanes, where appropriate, in a context sensitive manner;
 - e. Designing and implementing transit, pedestrian, and/or cycling alternatives along the corridor, including multi-use paths and paved shoulders.
- 1.1.4. Create a local ranking system for prioritization of road improvement projects, with emphasis on directing a majority of capacity investments to areas within the Primary Service Area (PSA), while still providing for the maintenance and safety of the facilities for the entire transportation network.
- 1.1.4. Coordinate with the Virginia Department of Transportation (VDOT), adjoining jurisdictions, and prospective developers to implement the most contextually appropriate improvements for the roadway system. (See Land Use.)

1.2 Plan and coordinate transportation improvements at the regional and local levels for all modes of travel to ensure efficient transitions from other jurisdictions without congestion or hazard.

- 1.2.1. Continue to participate in the Hampton Roads Transportation Planning Organization (HRTPO), which serves as the transportation planning body for the region.
- 1.2.2. Continue the efforts of James City County, the City of Williamsburg, York County, and the Historic Triangle Bicycle Advisory Committee to coordinate and implement a regional bicycle network, including further joint planning and development of regional funding proposals.

- 1.2.3. Recognize the importance of rail service as a viable transportation mode for the movement of people and goods. Continue to participate in regional planning efforts to improve and expand rail service.
- 1.2.4. Continue to research the feasibility and impacts of developing rail and bus rapid transit, which would link employers, residents, and tourists.
- 1.2.5. Coordinate with Williamsburg Area Transit Authority (WATA) and/or Hampton Roads Transit Authority (HRT) during review of development applications to ensure that proposals are conducive to incorporating the use of transit.

1.3 Continue to develop and maintain a transportation system that facilitates a variety of transportation modes in order to reduce congestion, pollution, and energy consumption, and to increase accessibility, modal choice, and quality of life.

- 1.3.1. Maintain a regularly updated list of proposed pedestrian and cycling projects on the Six Year Improvement Plan;
- 1.3.2. Actively pursue additional local, state, federal, and private funding to accelerate the construction for all needed modes of transportation facilities.
- 1.3.3. Promote increased utilization of public transit by:
 - a. Continuing to provide public transit to areas of greatest demand and for populations with special needs;
 - b. Pursuing greater interconnection between the local and regional transit systems;
 - c. Encouraging land use development patterns which promote public transit;
 - d. Encouraging transit-dependent uses to locate in areas currently served by transit or in areas to be served by transit in the near future;
 - e. Requiring new developments to support bus and transit services at or near the center of mixed use areas, high density multi-family housing communities, and large scale commercial development, and amending the Zoning Ordinance to support this requirement;
 - f. Reviewing the Long-Range Public Transportation Plan annually and implementing its recommendations as appropriate.
- 1.3.4. Encourage pedestrian circulation by providing safe, well-lit, and clearly marked crosswalks and unobstructed sidewalks. Encourage the use of accessible design and provision of shade benches, attractive landscaping, and scenic vistas along pedestrian routes.

- 1.3.5. Work with VDOT to design new or enhanced complete streets that allow for the safe accommodation of automobiles, public transit, pedestrians, cyclists, and other users.
- 1.3.6. Continue to identify and implement changes to the transportation system that improve air quality.
- 1.3.7. Develop greenways in a manner that supports their use as one element of an integrated transportation system.
- 1.3.8. Balance land use and economic development needs with the need to retain a high degree of mobility for short and long intra-County trips by encouraging road and access designs that are consistent with the intended functions of the road and adjoining land use patterns.
- 1.3.9. Include bikeways, pedestrian facilities, and/or multiuse trails within major developments and elsewhere in the County, especially connecting residential and non-residential areas and County facilities.
- 1.3.10. Update the James City County Sidewalk Master Plan and amend the Zoning Ordinance to increase accessibility, provide for more design and construction flexibility, and incorporate multi-use paths as an option.
- 1.3.11. Implement the adopted James City County Sidewalk and Trail Plan and Regional Bicycle Facilities Plan by planning for bikeways and pedestrian facilities in primary and secondary road plans and projects. Amend the Zoning Ordinance to require by-right developments to participate in the development of the facilities.
- 1.3.12. Explore and develop new transportation opportunities for senior citizens through agencies such as Williamsburg Area Transit Authority.
- 1.3.13. Pursue with Williamsburg-James City County Schools a Safe Routes to School program that identifies primary walking and biking routes to schools and prioritizes improvements to make those routes safe for children.

1.4 Maintain well-landscaped and attractive transportation facilities.

- 1.4.1. Guide new developments in designing roadway and parking areas that reduce the visual impact of auto-related infrastructure, specifically in Community Character Areas.
- 1.4.2. Utilize planning and design standards for road projects and related improvements which will allow innovation, promote an efficient transportation system, increase public safety, improve visual quality, and expand modal choice for transportation in the County. Require implementation of standards for development proposals and encourage VDOT to incorporate these standards. When improving roads designated as Community Character Corridors, Virginia Byways, or roads outside the

PSA, encourage VDOT to be sensitive to the context, including viewsheds, historic sites and structures, and landscaped medians.