

CHAPTER 10: TRANSPORTATION

OVERVIEW

A good county transportation network plays a critical role in the ability to travel in a safe manner, promoting the local economy and minimizing traffic congestion. A good transportation network also offers multiple modes or options for transportation including, but not limited to, walking, bicycling, bus services and automotive travel. Henrico County's transportation system is proactively planned, and improvements typically are timed to occur as land development creates the need for increased access and mobility. System management of the supply and demand for transportation is essential.

This chapter addresses travel by automobile, walking, cycling, bus, train and airplane. The public rights-of-way within the county's road network are shared by motorists, pedestrians, cyclists and bus riders. Henrico County is responsible for the roadways within its jurisdiction with the exception of State routes and interstates. As a result, the county's Department of Public Works oversees that all engineering, construction and maintenance of roads, sidewalks and transit service adheres to the acceptable standards with the efficient use of capital expenditures. This chapter provides general guidance for decisions affecting the county's transportation system and resources and briefly details the county's new regional travel demand model developed as part of the Comprehensive Plan.

TRAVEL MODES

The following section describes the travel modes in Henrico County and provides policy guidance for future decisions.

PEDESTRIANS

Safe pedestrian facilities are an important component to the county's overall transportation network. Within developed areas, residents use existing sidewalks and trails for recreation and travel. The recommendations contained in Chapter 5: Land Use encourage the development of Mixed-Use town centers and other forms of Mixed-Use development which promote pedestrian movement. Pedestrian activity typically is greater in these types of developments because distances between origins and destinations tend to be shorter. The *Zoning and Subdivision Ordinances* will be amended to promote high-quality, diverse land use patterns including Mixed-Use town centers, Traditional Neighborhood Developments (TND), and villages, all of which are pedestrian-friendly. The *2004 Richmond Regional Bicycle and Pedestrian Plan*, a VDOT-funded regional study of potential bicycle and pedestrian routes, demonstrated strong public interest in walking in Henrico County.

Pedestrian Facility Policies

The following policies should guide the provision of pedestrian travel:

1. Encourage new developments to install sidewalks and other pedestrian facilities. Connections to other neighborhoods and key destinations such as schools, libraries, parks, etc., are also encouraged.
2. Require sidewalks and other pedestrian pathways along all new and reconstructed major thoroughfares (see Major Thoroughfare Plan Map) excluding interstate highways and other controlled-access roads.

BICYCLES

The *2004 Richmond Regional Bicycle and Pedestrian Plan* demonstrated strong public interest in bicycling in Henrico County. A variety of facility types to accommodate bicycle traffic were highlighted, ranging from wider lanes on roadways to striped bicycle lanes and off-road trails and bikeways. The location of signed bike routes and the proposed Capital to Capital Trail are shown on the Bicycle Map. It is recognized that the county's four-lane, median-divided roads can be used by advanced bicyclists adept at riding with vehicular traffic; however, less experienced cyclists may find these roadways difficult to travel. The county's extensive recreation and parks areas may be appropriate for less experienced bicyclists including families with children. Serving citizens with intermediate bicycling capabilities and providing routes for alternative modes of travel should be examined by the county.

Bicycle Facility Policies

The following Policies should guide the provision of bicycle facilities in the county.

1. Facilitate bicycle travel along all planned and existing designated, long-distance bicycle routes in the county (Rtes 1, 76 and VA Capital to Capital Trail) through use of signage, shared lanes, bike lanes and shared use paths.
2. Consider the accommodation of bicycles in the planning and design of all major road projects where feasible.
3. Encourage bicycle accommodations in conjunction with new development.
4. Consider the development of a county-wide bicycle plan in order to identify and evaluate potential locations for bicycle facilities.

BICYCLE ROUTES MAP

BUS SERVICE

Public transportation in Henrico County is provided by the Greater Richmond Transit Company (GRTC) which has regularly scheduled stops along major routes. GRTC also provides express service for commuters into and out of Richmond. County services operate Monday through Friday 6:00 a.m. to 7:00 p.m. GRTC's specialized transportation for the disabled provides curb-to-curb service from 6:00 a.m. to 11:30 p.m., seven (7) days a week.

GRTC operates nine (9) local routes in Henrico County, and provides access to the City of Richmond. The bus system includes:

- The two (2) Orange Routes generally follow W. Broad Street west from Richmond City Hall to Pemberton and Staples Mill Roads. One route ends at Westpark Shopping Center and the other near Parham Road at the Henrico Government Center.
- The Black Route, north of Richmond, offers access from central Richmond via Hermitage and Brook Roads and Chamberlayne Avenue to Grammarcy Circle and Azalea Avenue to Pony Farm Drive.
- The four (4) Purple Routes, serving the eastern portion of the county, generally follow Nine Mile Road to the Airport and Williamsburg and Darbytown Roads as well as the Mechanicsville Turnpike/Central Gardens area and Laburnum Avenue.
- The two (2) Blue Routes serve the western areas of the county, generally following Three Chopt Road to Regency Square Mall and Monument Avenue to St. Mary's Hospital.
- Additional Blue and Green Routes serve the central Richmond area and south of the James River.
- Express buses serve four (4) park-and-ride facilities and provide peak hour transit service for commuters to and from downtown Richmond. Curb-to-curb para-transit service is also provided for qualified county residents who are unable to use the fixed-route services. The Bus Service and Park-and-Ride Facilities Map illustrates the current bus routes and park-and-ride facilities.

Bus Service Policies

The following policy should guide the provision of bus service in the county.

1. Continue to monitor citizen satisfaction with GRTC service and ensure a bus system that provides adequate service to the residents of the county.

BUS SERVICE & PARK AND RIDE FACILITIES MAP

PASSENGER TRAIN SERVICE

The Staples Mill Amtrak station is located about a quarter of a mile north of the intersection of Glenside Drive and Staples Mill Road and is one (1) of three (3) stations serving the Richmond metropolitan area, providing access to the national Amtrak network.

A study of alternatives and the environmental consequences of implementing passenger light rail transit service in an exclusive right-of-way in the Richmond region was completed in June 2003 by the Richmond Metropolitan Planning Organization (MPO). Candidate corridors favored by a regional transit study group included two (2) routes, which could be combined into one interlined transit route. These are:

1. **Short Pump Route** – Using either (or both) W. Broad Street or the edge of I-64, passenger rail service would travel about fourteen (14) miles to connect the Short Pump area near the interchange of I-64 and I-295 with downtown Richmond’s Main Street Station and points in between. Envisioned to serve growth around and west of Short Pump, it is possible the true benefit could be realized along the W. Broad Street areas of the City of Richmond and Henrico County. This route would support redevelopment of properties as private property owners compete with newer commercial and Mixed-Use developments in outlying areas. The study forecasted ridership of more than 30,000 people per weekday.
2. **Airport Route** – Using one (1) of four (4) alternate routes, passenger rail service would travel about seven (7) miles to connect Main Street Station in downtown Richmond with Richmond International Airport. The potential exists to serve Henrico neighborhoods that lie between the airport and downtown; however, the primary objective of moving airport passengers to and from downtown rapidly would be diminished with each additional train stop. Alternate alignments studied included the use of the following general corridors: Nine Mile Road, Williamsburg Road and the CSX railroad just south of the airport property.

Passenger Train Service Policies

The following policies should guide the provision of rail services in the county.

1. Participate in regional efforts to monitor and evaluate the potential demand for passenger train and light rail service within the county pursuant to regional studies and encourage service that benefits the general welfare of county residents and businesses.
2. Consider potential station locations in the design of Mixed-Use developments particularly in areas where preferred routes have been identified.

RAIL CARGO SERVICE

Two (2) major railroad companies operate in Henrico County: CSX and Norfolk Southern (NS). CSX maintains Acca Yard as its primary facility with approximately twenty (20) tracks providing such freight services as classification, bulk transfer, rail car maintenance, industrial switching and staging. Many of the rail shipments along the Acca Yard rail lines are coal, which is primarily moving through the region and is not an origin or destination commodity.

Acca Yard is physically constrained and expansion would be costly. A regional need has been identified for an intermodal (rail-truck) transfer facility in the Richmond Area Metropolitan Planning Organization's *2026 Long-Range Transportation Plan* (LRTP). Acca Yard was one (1) of seven (7) sites considered for an intermodal transfer facility, but the cost to obtain the necessary land for expansion was prohibitively high. In addition, Acca Yard is one of the most congested facilities on the east coast and Norfolk Southern does not operate at the yard.

CSX also has rail sidings and spurs at the Richmond International Airport. Generally, CSX operations are intended to serve north-south corridors while Norfolk Southern services east-west corridors.

Rail Cargo Service Policies

The following policy should guide the provision of cargo rail service in the county.

1. Continue to participate in regional efforts to evaluate potential investments of State and Federal funds to improve rail cargo facilities in the region and encourage service that benefits the general welfare of county residents and businesses.

AIR TRAVEL SERVICE

Richmond International Airport (RIC) is located in eastern Henrico County and serves Central Virginia's air transportation needs by providing passenger and air cargo service. The airport's location is easily accessible via I-64, I-295 and Route 60 with future plans to provide more direct access to Route 895.

The airport is owned and operated by the Capital Region Airport Commission, a political subdivision of the Commonwealth of Virginia, whose governing board consists of fourteen (14) members appointed by the City of Richmond and the Counties of Henrico, Chesterfield and Hanover. The airport master plan was amended in 1999, and is currently in the process of being updated. This facility can accommodate additional commercial airline operations with available gates, ticketing areas and airfield capacity.

The airport has recently completed a major capital improvement program which included: a concourse expansion; the addition of ten (10) new airline gates; the construction of a two-level terminal curbside and the renovation of the terminal building to provide for separate arrival and departure levels; the construction of a new Federal Aviation Administration (FAA) air traffic control tower; and the construction of additional parking facilities, including garages. Construction is currently underway to improve Airport Drive to a four (4) lane divided roadway on airport property from Clarkson Road

to Charles City Road in addition to providing improved access to the terminal building from Airport Drive.

RIC is the gateway for Virginia's Capital Region, with annual passenger traffic volume exceeding 3.6 million in 2007. Nine (9) airlines offer approximately two-hundred (200) daily non-stop flights between Richmond and twenty-two (22) domestic destinations.

Air Travel Service Policies

The following policies should guide the provision of air travel service in the county.

1. Continue to have representation on the Capital Region Airport Commission.
2. Monitor and regulate land use and zoning in areas near the airport for compatibility in order to support current and future operations.

ROAD FACILITIES

The Department of Public Works currently maintains eighty percent (80%) of the county's roadway lane-miles, while the Virginia Department of Transportation (VDOT) maintains the other twenty percent (20%). With such a high percentage of roads under its management, the county recognizes its responsibility to efficiently move large volumes of traffic and provide integrated inter-county and intra-county mobility. This responsibility provides opportunities to create a well-designed road network contributing to the county's identity and high quality of life. The county also seeks to protect valuable historic, natural and cultural resources from incompatible transportation improvements through sensitive project design that respects or incorporates the resources responsibly.

Henrico County uses a variety of techniques to successfully manage both safety and efficiency along high-volume, multi-lane roads. These techniques include: the strategic review of driveway locations; frequent use of raised-curb medians; and a traffic monitoring approach that measures congestion, referred to as level of service. The county also intends to improve traffic flow along select arterials through the implementation of coordinated signal timings.

The careful placement of raised-curb medians is the most common method used in the county to support optimal signal timing and reduce unnecessary traffic flow interruptions from left turn queues or driveways sited at less than ideal locations. Medians may limit direct access to some properties along a corridor, so median placement should be carefully considered. The county will continue to include raised-curb medians and other alternatives in arterial street design and construction, because of safety and road capacity advantages. However, consideration will be given to allowing right-in/right-out only driveways at strategic locations in order to lessen the side-street traffic demand at nearby major intersections. In addition, the county will continue to place an emphasis on the use of shared driveways and inter-parcel connections for developments in order to manage access along its thoroughfares and promote internal capture of trips in Mixed-Use developments.

Road Facility Policies

The following policies should guide the provision of road facilities:

1. Monitor levels of service to identify changes in traffic congestion and evaluate alternative counter-measures to maintain or improve traffic conditions in the county.
2. Consider right-in/right-out only driveways at strategic locations for their potential to lessen traffic volumes and improve levels of service at nearby critical intersections.
3. Continue to coordinate traffic signal timing plans along strategic corridors. State and Federal transportation funds are available for signal coordination upgrades because of demonstrated benefits to motorists and the general public through air quality improvements. The corridors should continue to be evaluated as dictated by changes in background traffic volumes and traffic generated by new development.

Additional policies associated with the roadway network are included as part of this chapter under Land Use and Transportation Coordination.

EXISTING ROAD CONDITIONS

Existing base year (2004) and future year (2026) roadway network link levels of service were evaluated using the Richmond/Tri-Cities MPO Travel Demand Model. Under the existing scenario, the major thoroughfares within the county’s network generally operate at acceptable levels of service across a majority of the network. Even in the western portion of the county, where development is more intense, deficient levels of service along roadway links are rare, although congestion at signalized intersections is more prevalent.

Table T-1: Base Year Deficiencies contains a list of county roadway segments which were found to be operating at deficient levels of service (D or worse) in the 2004 base year.

TABLE T-1: BASE YEAR DEFICIENCIES

Facility	From	To
E. Williamsburg Road *	Elko Road	New Kent County Line
Darbytown Road	Oakland Road	East of S. Laburnum Avenue
New Market Road *	Osborne Turnpike	I-295
River Road	Sleepy Hollow Road	East of Chippenham Parkway
Derbyshire Road	Gaskins Road	Sleepy Hollow Road
Pouncey Tract Road *	Shady Grove Road	W. Broad Street
Nuckols Road	I-295	West of Shady Grove Road

* Indicates roads maintained by VDOT.

The Department of Public Works has identified various locations throughout the county for spot improvements at intersection or interchange locations and at locations where opportunities exist to improve a roadway’s alignment. This information can be found in **Table T-2: Alignment Improvements**.

The improvement locations are shown on the Henrico County 2026 Major Thoroughfare Plan Map included later in this chapter. Improvements to the locations listed below may be made as development occurs, through public-private partnerships, or through funding provided by the county or State/Federal agencies. County staff also has identified the following signalized intersections which currently rank among the most congested in the county:

- W. Broad Street and Pouncey Tract Road/Pump Road *
- W. Broad Street and Glenside Drive *
- E. Parham Road and Brook Road *
- Parham Road and Patterson Avenue *
- S. Laburnum Avenue and Williamsburg Road *
- S. Laburnum Avenue and Gay Avenue
- E. Parham Road and Staples Mill Road *
- Laburnum Avenue and Mechanicsville Turnpike *
- W. Broad Street and Parham Road *

* Indicates intersections maintained by VDOT.

TABLE T-2: ALIGNMENT IMPROVEMENTS

Location	Opportunity
N. Gayton Road and I-64	New Interchange
N. Parham Road and Patterson Avenue	New Interchange
Route 895 and Wilton Road	New Interchange
I-295 and Portugee Road	New Interchange
E. Williamsburg Road and Technology Boulevard	Intersection Improvement
E. Williamsburg Road and Memorial Drive	Intersection Improvement
New Market Road and Concept Road 192-1	Intersection Improvement
New Market Road and Doran Road	Intersection Improvement
New Market Road and Turner Road	Intersection Improvement
New Market Road and Kingsland Road	Intersection Improvement
New Market Road and Long Bridge Road	Intersection Improvement
New Market Road and Concept Road 2026-24	Intersection Improvement
New Market Road and Concept Road 2026-21	Intersection Improvement
New Market Road and Concept Road 2026-26	Intersection Improvement
New Market Road and Concept Road 2026-22	Intersection Improvement
New Market Road and Concept Road 2026-19	Intersection Improvement
Carters Mill Road and Long Bridge Drive	Intersection Improvement
Charles City Road and Darbytown Road	Intersection Improvement
Carters Mill Road – North of Charles City County Line	Alignment Improvement
Charles City Road – West of Hines Road	Alignment Improvement

2026 FUTURE DEVELOPMENT SCENARIO

As part of the development of the Plan, a travel demand model has been developed to assist in the analysis of the transportation system for the county. The model has been developed by building upon the existing transportation network and assuming reasonably restrained conditions from the 2026 Richmond MPO's *Long Range Transportation Plan*, the proposed Henrico County 2026 Major Thoroughfare Plan as well as projects in the current *County Capital Improvement Program* and VDOT's *Six Year Improvement Program*. Some minor facilities in the above-referenced documents were not included because the regional scale of the travel demand model is built at a regional scale. Their exclusion, however, does not have a significant effect on the overall model output.

A future year deficiency analysis was conducted using the county's projected 2026 land use as shown in Chapter 5: Land Use. The recommended roadway improvements generated by the model analysis are listed in **Table T-3: 2026 Recommendations for Roadway Widening**.

TABLE T-3: 2026 RECOMMENDATIONS FOR ROADWAY WIDENING

Facility	From	To	Recommended Cross-Section
New Market Road	Richmond City Line	Bradbury Road	6 lane divided
Osborne Turnpike	County Line	N. of Route 895	4 lane divided
S. Laburnum Avenue	Route 895	Carolina Avenue	6 lane divided
Charles City Road	S. Airport Drive	Gill Dale Road	4 lane divided
E. Williamsburg Road	New Kent County Line	Beulah Road	4 lane divided
E. Williamsburg Road	Beulah Road	Richmond City Line	6 lane divided
Memorial Drive	Turner Road	Technology Boulevard	4 lane divided
Elko Road	White Oak Road	Meadow Road	6 lane divided
Elko Tract Road	Technology Boulevard	Elko Road	4 lane divided
Darbytown Road	Richmond City Line	Doran Road	4 lane divided
Beulah Road	Whiteside Road	Charles City Road	4 lane divided
Willis Church Road	New Market Road	Carters Mill Road	4 lane divided
Bradbury Road	New Market Road	Long Bridge Road	4 lane divided
Seven Hills Road	S. Laburnum Avenue	Charles City Road	4 lane divided
Strath Road	New Market Road	Darbytown Road	4 lane divided
Pouncey Tract Road	Shady Grove Road	W. Broad Street	4 lane divided
Nuckols Road	Shady Grove Road	Springfield Road	6 lane divided
Cox Road	Nuckols Road	W. Broad Street	4 lane divided
Greenwood Road	Mountain Road	Mill Road	4 lane undivided
River Road	Gaskins Road	Willey Bridge	4 lane divided
N. Gayton Road	Pouncey Tract Road	Lauderdale Drive	4 lane divided
Woodman Road	Hungary Road	Mountain Road	4 lane divided

LAND USE AND TRANSPORTATION COORDINATION

Transportation projects are envisioned to support the Land Use Chapter. Locations of projected new residential and nonresidential areas are shown on the Future Land Use Map in Chapter 5: Land Use. The regional travel demand model maintained by the Richmond/Tri-Cities MPO was used to assess roadway capacity needs based on population and employment forecasts. (A complete description of the regional travel demand model methodology utilized in the transportation planning process is contained in Appendix D.) Reliance on existing roads to support the new growth is unreasonable; therefore, construction of new roads is anticipated and key in supporting Henrico County’s future growth. The location and spacing of new roads is directly related to the anticipated density of new development; that is, closer spacing of new roads is expected in areas of higher development density. The relationship between development density and average roadway spacing is shown in **Table T-4: Roadway Spacing Guide**.

TABLE T-4: ROADWAY SPACING GUIDE

	Development Density	Average Roadway Spacing Needs
Residential	Less than 2 dwelling units per acre	3,000 to 6,000 feet apart
Residential	2 to 4 dwelling units per acre	1,500 to 3,000 feet apart
Residential	More than 4 dwelling units per acre	750 to 1,500 feet apart
Village or Town Center	Mixed-Use residential and nonresidential	400 to 1,500 feet apart

Source: Independent research conducted by Kimley-Horn and Associates, Inc.

Transportation-Related Land Use Policies

The following policies, as iterated in Chapter 5: Land Use, should guide the provision of transportation facilities and services in the county.

1. Consider the roadway spacing guide presented in **Table T-4: Roadway Spacing Guide** as the county evaluates applications for new development.
2. Ensure public facilities are in place or planned to be available to adequately serve and support new development. Only approve new development upon demonstration that adequate public facilities, as established in this Plan, are or will be available at the time of completion to maintain desired levels of service.
3. Design new development to provide interconnectivity with existing and future developments through the use of stub streets.
4. Discourage strip development along existing or new thoroughfares. This practice creates an undesirable development pattern and causes traffic and access issues, as well as preventing access from major corridors to large tracts of land that may be developed at a later time.

5. Promote high-quality development through compliance with site plan review and the *Design Guidelines Manual*, particularly related to landscaping, traffic and pedestrian circulation, signage, building design, placement and orientation.
6. Focus on promoting a high quality of life for residents by providing safety and stability within neighborhoods.
7. Use the road network on Residential areas to promote safety and connectivity with existing and future development. Rather than focusing traffic on a few arterial or collector streets, more “through streets” are encouraged to disperse traffic and to reduce isolated impacts at certain points.
8. Encourage pedestrian orientation as the emphasis of Mixed-Use developments when designing buildings and public space. Discourage the accommodation of the automobile as a prominent land use or dominant visual feature. Promote structured parking to preserve land area within Mixed-Use developments for open space or more economically beneficial uses.
9. Promote the careful planning and management of traffic circulation and access so each Mixed-Use development operates as a coordinated circulation system. A strong interconnected street network is essential to the function of Mixed-Use areas. These systems need not be a typical grid but may retain some curvilinear character with sufficient crossroads and access locations to promote adequate levels of service as specified in this Plan.
10. Provide convenient access to, and when possible, visibility from the regional transportation systems including highways, airport and rail for Office/Service/Industrial areas. Vehicular access should be designed to maximize efficiency and minimize negative levels of service impacts on the surrounding road network.
11. Discourage and avoid the strip development of major thoroughfares with new Retail/Commercial development. Promote concentrations of Retail/Commercial uses in well-designed centers that apply appropriate access management techniques as the preferred configuration.
12. Encourage access management for the success of Retail/Commercial uses. Access points should be designed to provide adequate visibility for businesses while mitigating negative impact on the levels of service on the roadways.
13. Give special attention to access management and site configuration when existing Retail/Commercial areas are redeveloped to minimize traffic impacts often associated with strip development.

THE MAJOR THOROUGHFARE PLAN

The depiction of new roadway corridors is intended solely to connect origins and destinations, not suggest precise lines where new roads must be built. Efforts were made to show new roadway corridors in areas likely to develop while avoiding or minimizing the extent of new roadways in areas that are environmentally, historically or culturally sensitive. Where practical, existing corridors are emphasized and, in some cases, used more efficiently by showing extensions and new connections to other major roads. The county intends to promote the implementation of interconnected roads as a means of spreading traffic demand across multiple corridors and shortening trip length for citizens.

The 2026 Major Thoroughfare Plan Map illustrates existing and proposed county roadways having a designated functional classification. Descriptions of each of the county's functional classifications are provided in the following section.

ROAD CLASSIFICATIONS

A classification system communicates the role of each road in the county's network. Henrico County has an established classification system that defines roads according to jurisdiction, function, and degree to which roadway access is managed.

Jurisdictional Class

Henrico County records show the county has jurisdiction over eighty percent (80%) of the lane-miles of roadways, with the remaining twenty percent (20%) under the jurisdiction of the Commonwealth of Virginia. The individual roadways maintained by VDOT are listed in **Table T-5: VDOT Maintained Roadways** and illustrated on the VDOT Maintained Roadway Map.

Functional Class

The functional class hierarchy of roads varies. The highest priority is on vehicular mobility and throughput on "controlled access" highways. The lowest priority is vehicular mobility on local streets. Major and minor arterials and major and minor collector streets fall in the middle of the hierarchy.

2026 MAJOR THOROUGHFARE PLAN MAP

VDOT MAINTAINED ROADWAY MAP

TABLE T-5: VDOT MAINTAINED ROADWAYS

Route #	Name of Facility	Beginning	End
Controlled Access Facilities			
64	Interstate 64	Entire Length	
95	Interstate 95	Entire Length	
195	Interstate 195	Entire Length	
295	Interstate 295	Entire Length	
895	Pocohontas Parkway	Entire Length	
Non-Controlled Access Facilities			
US 1	Brook Road	Entire Length	
Route 2 / US 301	Chamberlayne Road	Entire Length	
Route 5	Old Osborne Turnpike/New Market Road	Entire Length	
Route	New Market Road	Charles City County Line	Route 5
Route 6	Patterson Avenue	Entire Length	
US 33	Staples Mill Road	Entire Length	
US 33	Nine Mile Road	Richmond City Line	North Airport Drive (Rte. 156)
US 33 / 60	E. Williamsburg Road	Williamsburg Road (US 60)	New Kent County Line
US 60	Williamsburg Road	Richmond City Line	E. Nine Mile Road
Route 73	E. Parham Road	Brook Road (US 1)	I-95
Route 147	Huguenot Road	Huguenot Memorial Bridge	River Road
Route 147	River Road	Huguenot Road	Richmond City Line
Route 150	Chippenham Parkway	Parham Road / River Road	Richmond City Line
Route 156	Airport Drive	Hanover County Line	Williamsburg Road (US 60)
Route 156 / US	Williamsburg Road	Airport Drive	Elko Road
Route 156	Elko Road	E. Williamsburg Road (US 60)	Charles City Road
Route 156	Charles City Road	Elko Road	Willis Church Road
Route 156	Willis Church Road	Charles City Road	New Market Road (Route 5)
Route 157	Gaskins Road	Patterson Avenue (Route 6)	Quioccasin Road
Route 157	Quioccasin Road	Gaskins Road	Pemberton Road
Route 157	Pemberton Road	Quioccasin Road	W. Broad Street (US 250)
Route 157	Springfield Road	W. Broad Street	Staples Mill Road (US 33)
Route 161	Lakeside Avenue	Richmond City Line	Hilliard Road (Route 356)
Route 161	Hilliard Road	Lakeside Avenue	Brook Road (US 1)
Route 197	Westwood Avenue	Entire Length	
US 250	W. Broad Street	Entire Length	
Route 271	Pouncey Tract Road	W. Broad Street (US 250)	Goochland County Line
Route 301	Access Road	FR-653 / US 301 / I95	US 301 Upham Drive
Route 356	Hilliard Road	Staples Mill Road (US 33)	Lakeside Avenue
US 360	Mechanicsville Turnpike	Entire Length	

Controlled Access Roads

Vehicle access is allowed only at designated interchanges. Trip lengths on a controlled access facility are longer. With the exception of certain rush hour periods, these roads primarily are for inter-city travel.

The function of controlled access roads is to move large volumes of traffic through the metropolitan area, and to serve major population centers and civil defense activities with full control of access. Controlled access roads will:

- Not have direct access (driveways) to abutting properties.
- Relieve existing major arterial streets of excessive traffic.
- Provide interchanges with appropriate arterial highways.
- Provide rapid public and private service between large Residential areas, employment centers and the central business district.

The controlled access roads in the county are Interstate Highways 64, 95, 195, 295 and Route 895.

Major Arterials

These roads connect major centers of activity within the metropolitan area. Next to controlled access roads, major arterials are the highest traffic volume corridors and are designed to accommodate the longest trips within the area. These roads should carry a large portion of the total area traffic on a minimum of road mileage. Service to abutting land should be secondary to the provision of mobility for major traffic movements.

The function of major arterials is to provide high traffic volume and maximum travel service to and between regional centers of activity. Major arterials will:

- Create an integrated network providing both inter-county/city and intra-county service.
- Control entrances and encourage joint entrances to abutting property to ensure free-flowing, uninterrupted movement serving the highest traffic volumes while (secondarily) providing land access.
- Be located so all developed areas are within a reasonable distance from, and access is available to, the collector road system.
- Require a non-access strip for residential development along the road.
- Allocate land use activities to effectively distribute intensity along the road.

A complete list of the major arterial facilities in Henrico County is shown in **Tables T-6A and T-6B: Major Arterials.**

TABLE T-6A: MAJOR ARTERIALS (PARTIAL LINKS)

Major Arterials (Partial Links)	From	To
Charles City Road	Williamsburg Road	Turner Road
Charles City Road	Darbytown Road	Charles City County Line
Concept Road 48	Charles City Place	Concept Road 8
Old Osborne Turnpike	Richmond City Line	New Market Road
S. Airport Drive	Concept Road Airport Access	I-64
Turner Road	Charles City Road	Memorial Drive

TABLE T-6B: MAJOR ARTERIALS (FULL LINKS)

Major Arterials (Full Links)		
Brook Road	E. Parham Road	Patterson Avenue
Chamberlayne Road	Mechanicsville Turnpike	S. Laburnum Avenue
Chippenham Parkway	N. Laburnum Avenue	Staples Mill Road
Concept Road 70	N. Parham Road	W. Laburnum Avenue
Darbytown Road	New Market Road	Williamsburg Road
E. Laburnum Avenue	Parham Road	--

Minor Arterials

These roads augment the higher road classifications and they should not penetrate identifiable neighborhoods. Because of mobility and safety concerns for longer-distance trips, adequate access is provided through the use of turning lanes and signalization. These roads place more emphasis on land access and offer a lower level of traffic mobility than major arterials.

The function of minor arterials is to interconnect with and augment the major arterial system. Minor arterials will:

- Create an integrated network providing both inter-county and intra-county service.
- Be located so all developed areas are within a reasonable distance from, and access is available to, the collector road system.
- Control entrances and encourage joint entrances to abutting properties to assure free-flowing, uninterrupted movement serving the highest traffic volumes while (secondarily) providing land access.
- Require a non-access strip for residential development along the road.
- Control balanced land use activities to distribute intensity along the road.

A complete list of the minor arterial facilities in Henrico County is shown in **Tables T-7A and T-7B: Minor Arterials.**

TABLE T-7A: MINOR ARTERIALS (PARTIAL LINKS)

Minor Arterials (Partial Links)	From	To
Charles City Road	Turner Road	Darbytown Road
Creighton Road	N. Laburnum Avenue	Hanover County Line
Concept Road 7	Varina Road	South East I-295
Concept Road 8	Concept Road 46	Charles City Road
Concept Road 18	Gill Dale Road	Bradbury Road
Concept Road 133	Virginia Center Parkway	Greenwood Road
Forest Avenue(West End)	Three Chopt Road	Glenside Drive
Hungary Road	Springfield Road	Staples Mill Road
Jeb Stuart Parkway	Woodman Road	Brook Road
Libbie Avenue	Richmond City Line	W. Broad Street
N. Gayton Road	W. Broad Street	Pouncey Tract Road
Portugee Road	I-295	Memorial Drive
Pouncey Tract Road	Goochland County Line	Nuckols Road
S. Airport Drive	I-64	N. Airport Drive
Technology Boulevard	Memorial Drive	E. Williamsburg Road
Three Chopt Road	N. Parham Road	Richmond City Line
Woodman Road	E. Parham Road	Jeb Stuart Parkway

TABLE T-7B : MINOR ARTERIALS (FULL LINKS)

Minor Arterials (Full Links)		
Azalea Avenue	Gill Dale Road	N. Airport Drive
Bradbury Road	Glenside Drive	N. Gaskins Road
Concept Road 26	Hilliard Road	Nine Mile Road
Concept Road 43	Homeview Drive	Nuckols Road
Concept Road 73	Huguenot Road	Richmond Henrico Turnpike
Concept Road 120	John Rolfe Parkway	Ridgefield Parkway
Concept Road 144	Lauderdale Drive	River Road
Dumbarton Road	Meadowbridge Road	W. Nine Mile Road
Eastridge Road	Memorial Drive	Westwood Avenue
Gaskins Road	Monument Avenue	--

Major Collectors

Collector roads provide both access and service for local traffic movements within residential neighborhoods, commercial areas and industrial areas. The collector system may penetrate neighborhoods, collecting traffic from the local streets throughout the area and channeling it to higher-level roads. Major collectors provide a slightly higher level of mobility and a slightly lower level of access than minor collectors.

The function of major collectors is to collect and distribute traffic between local streets and arterial roads. Major collectors will:

- Be designed so that traffic movement at reasonable speeds compatible with residential neighborhoods is the primary function of the road.
- Provide access to and from major traffic volume generators.

- Control entrances and encourage joint entrances to provide safe and efficient traffic movement.
- Be identified within all developed areas.
- Provide shorter travel distances than arterials.
- Provide heavy vehicular traffic in industrial zones.

A complete list of the major collector facilities in Henrico County is shown in **Tables T-8A and T-8B: Major Collectors**.

TABLE T-8A: MAJOR COLLECTORS (PARTIAL LINKS)

Major Collectors (Partial Links)	From	To
Bethlehem Road	Dickens Road	Dabney Road
Beulah Road	Charles City Road	Whiteside Road
Church Road	Lauderdale Drive	Cox Road
Concept Road 3	Elko Road	Charles City Road
Concept Road 5	Turner Road	Darbytown Road/Turner Road
Concept Road 6	Doran Road/Pinefields Drive	Darbytown Road/Henry Ward Boulevard
Concept Road 9	Long Bridge Road	Darbytown Road/Concept Road 198
Concept Road 14	Pump Road	Concept Road 120
Concept Road 39	Buffin Road	New Market Road/Doran Road
Concept Road 45	Beulah Road	Portugee Road
Concept Road 46	Turner Road	Concept Road 8
Concept Road 71	Whiteside Road/Nash Road	Portugee Road
Concept Road 123	Springfield Road	Springfield Road/Francistown Road
Concept Road 139	Kingsland Road	New Market Road/Long Bridge Road
Concept Road 140	North of Cedar Knoll Lane	Dottrell Road
Concept Road 176	Beulah Road	Charles City Road/Britton Road
Cox Road	Ridgefield Parkway	Nuckols Road
Creighton Road	Richmond City Line	N. Laburnum Avenue
Forest Avenue (West End)	N. Ridge Road	Three Chopt Road
Gayton Road	Ridgefield Parkway	N. Gaskins Road
Hermitage Road	Hilliard Road	Woodman Road
Hungary Road	Staples Mill Road	Woodman Road
Mayland Drive	N. Gaskins Road	N. Parham Road
N. Gayton Road	Causeway Drive	W. Broad Street
Pouncey Tract Road	W. Broad Street	Nuckols Road
Shrader Road	E. Parham Road	Wistar Road
Skipwith Road	Three Chopt Road	N. Parham Road
Starling Drive	Patterson Avenue	Quioccasin Road
Three Chopt Road	Lauderdale Drive	N. Parham Road
Turner Road	New Market Road	Memorial Drive
Woodman Road	Hilliard Road	E. Parham Road

TABLE T-8B: MAJOR COLLECTORS (FULL LINKS)

MAJOR COLLECTORS (FULL LINKS)		
Basie Road	Concept Road 31	Midview Road
Bremner Boulevard	Concept Road 32	Mountain Road
Brittles Lane	Concept Road 38	N. Holly Avenue
Britton Road	Concept Road 52	Oakland Road
Bunche Street	Concept Road 99	Oakleys Lane
Carolina Avenue	Concept Road 180	Twin Hickory Lake Drive
Concept Road 1	Concept Road 184	Twin Hickory Road
Concept Road 19	Concept Road 198	White Oak Road
Concept Road 20	Dabney Road	Whiteside Road
Concept Road 25	Derbyshire Road	Wilkinson Road
Concept Road 27	Long Bridge Road	Willis Church Road
Concept Road 28	Masonic Home Lane	Willson Road
Concept Road 29	Meadow Road	Yahley Mill Road

Minor Collectors

These roads generally provide the same service as major collector roadways; however, minor collectors provide for a slightly lower level of mobility and a slightly higher level of access than major collectors.

The function of minor collectors is to collect and distribute traffic between local streets and arterial roads. Minor collectors will:

- Provide for shorter travel distances than arterials.
- Provide access to abutting property.
- Discourage “through” traffic on local streets.
- Encourage lower speeds on local streets.
- Control entrances to provide safe and efficient local traffic movement between local streets and the arterial system.

A complete list of the minor collector facilities in Henrico County is shown in **Tables T-9A and T-9B: Minor Collectors**.

TABLE T-9A: MINOR COLLECTORS (PARTIAL LINKS)

Minor Collectors (Partial Links)	From	To
Antigo Road	Colwyck Drive	Oakleys Lane
Bethlehem Road	Basie Road	Dickens Road
Beulah Road	Whiteside Road	W. Williamsburg Road
Church Road	Causeway Drive	Lauderdale Drive
Comet Road	Mayland Drive	Mayland Drive
Concept Road 4	Hines Road	Elko Road
Concept Road 12	Carters Mill Road	Long Bridge Road
Concept Road 13	Warriner Road	Warriner Road
Concept Road 15	Sadler Road/Ireland Lane	Sadler Grove Road/Sadler Road
Concept Road 21	Curles Neck Road	Turkey Island Road
Concept Road 22	Curles Neck Road	Concept Road 206
Concept Road 37	Twin Hickory Lane	Holman Ridge Road
Concept Road 50	Beulah Road	Concept Road 71
Concept Road 58	Holman Ridge Road	Concept Road 135
Concept Road 61	Concept Road 150	Yarnell Road
Concept Road 63	Shady Grove Road	Holman Ridge Road
Concept Road 65	Woodside Street	Woodside Street
Concept Road 69	Rasmussen Drive	Elko Road
Concept Road 86	Treva Road	Whiteside Road
Concept Road 91	Meadow Road	Dilworth Circle
Concept Road 95	Sanburne Parkway	Audubon Drive
Concept Road 98	Graves Road	Pondorosa Drive
Concept Road 105	Meadowview Lane	Cedar Fork Road
Concept Road 131	Kain Road	Perrywinkle Road
Concept Road 136	Colfax Road	Mill Road
Concept Road 137	Grey Oaks Park Drive	Nuckols Road
Concept Road 138	Willis Church Road	Warriner Road
Concept Road 165	Osborne Turnpike	Hickory Avenue
Concept Road 204	Bacova Drive	Concept Road 132
Concept Road 205	Curles Neck Road	New Market Road
Concept Road 207	Woodside Street	Burning Tree Road
Concept Road 209	Curles Neck Road	Concept Road 23
Gayton Road	Lauderdale Drive	Ridgefield Parkway
Hermitage Road	Staples Mill Road	Woodman Road
Hungary Road	Woodman Road	E. Parham Road
Impala Drive	Dumbarton Road	Glenside Drive
Jeb Stuart Parkway	Brook Road	Virginia Center Parkway
Lakeside Avenue	Glenside Drive	Brook Road
Mayland Drive	N. Parham Road	Skipwith Road
N. Gayton Road	Causeway Drive	Lauderdale Drive
Old Williamsburg Road	Old Whiteside Road	Dry Bridge Road
Shrader Road	End	E. Parham Road
Skipwith Road	N. Parham Road	W. Broad Street
Starling Drive	Quioccasin Road	Fargo Road
Westmoreland Street	City of Richmond Line	Thalbro Street

TABLE T-9B: MINOR COLLECTORS (FULL LINKS)

Minor Collectors (Full Links)				
25th Street	Concept Road 107	Fargo Road	Michael Road	Sanburne Parkway
Access Road	Concept Road 126	Evergreen Road	Mill Road	Sandy Lane
Ackley Avenue	Concept Road 132	Falconbridge Drive	Messer Road	Sleepy Hollow Road
Anoka Road	Concept Road 135	Falmouth Street	Miller Road	Southbury Avenue
Antioch Road	Concept Road 146	Farmington Drive	Millers Lane	Springdale Road
Antionette Drive	Concept Road 149	Finlay Street	Monaco Drive	St Charles Road
Appling Road	Concept Road 150	Fitzhugh Avenue	Monahan Road	Stoneleigh Road
Arrowdel Road	Concept Road 154	Fordson Road	Montclair Road	Stoney Run Parkway
Audubon Drive	Concept Road 157	Forest Avenue (East End)	Montpelier Street	Telegraph Road
Austin Avenue	Concept Road 167	Fox Downs Drive	N. Midview Road	Thalbro Street
Bacova Drive	Concept Road 168	Francis Road	N. Mooreland Road	Treva Road
Besler Lane	Concept Road 169	Francistown Road	N. Washington Street	Tuckernuck Drive
Betty Lane	Concept Road 171	Gay Avenue	Naglee Avenue	Turkey Island Road
Bickerstaff Road	Concept Road 172	Glen Gary Drive	Neale Street	Twin Hickory Lane
Blue Jay Lane	Concept Road 199	Glendale Drive	New Osborne Turnpike	Twin Hickory Road
Bremo Road	Concept Road 200	Gordon Lane	Newbridge Road	Twin Pine Road
Broad Meadows Road	Concept Road 201	Grapevine Road	North Run Road	University Boulevard
Bronwood Road	Concept Road 202	Graves Road	Northbury Avenue	University Drive
Brookmont Drive	Concept Road 203	Gray Oaks Park Drive	Oakleys Lane	Upham Drive
Buckingham Avenue	Concept Road 206	Hanover Road	Old Hanover Road	Varina Road
Buffin Road	Concept Road 208	Hart Street	Old Nuckols Road	Villa Park Drive
Burning Tree Road	Concept Road 210	Harvie Road	Old Springfield Road	Virginia Center Parkway
Cambridge Drive	Cool Lane	Hickory Avenue	Old Washington Highway	W. Broad Street Connector
Carters Mill Road	Copper Creek Lane	Hickory Bend Drive	Old Whiteside Road	W. Washington Street
Causeway Drive	Copperas Lane	Hickory Park Drive	Old Wyndham Drive	Walsing Drive
Cedar Fork Road	Courtney Road	Hines Road	Oregon Avenue	Waltham Drive
Charles Street	Crowncrest Drive	Hughes Road	Oronoco Avenue	Warren Road
Chauncey Lane	Curles Neck Road	Hunton Park Boulevard	Park Terrace Drive	Warriner Road
Church Run Parkway	Dabbs House Road	Huron Avenue	Penick Road	Warwick Park Road
Cleveland Street	Dan Street	Indale Road	Pepper Avenue	Watts Lane
Cloister Drive	Deep Bottom Road	Jacque Street	Perrywinkle Road	West Club Lane
Cloverdale Street	Denham Road	Kain Road	Pilots Lane	West End Drive
Colfax Road	Diane Lane	Kinvan Road	Pleasant Street	Westerre Parkway
College Road	Dill Avenue	Kirkwood Street	Pondrosa Drive	Westham Parkway
Colwyck Drive	Dilworth Circle	Klockner Drive	Purcell Road	Westham Station Road
Concept Road 10	Dogwood Oaks Drive	La France Road	Quarter Mill Road	Whitfield Avenue
Concept Road 11	Dominion Boulevard	Lanier Avenue	Raintree Drive	Wilmer Avenue
Concept Road 17	Dominion Club Drive	Lee Avenue	Ralston Road	Wilton Road
Concept Road 23	Donora Drive	Lewis Road	Rasmussen Drive	Winesap Drive
Concept Road 30	E. Cedar Fork Road	Library Road	Reynolds Road	Wistar Road
Concept Road 34	E. Washington Street	Lindsay Drive	Richmond Road	Wistar Village Drive
Concept Road 53	Eanes Lane	Locust Street	Roslyn Hills Drive	Woodside Street
Concept Road 68	Edenbrook Drive	Lourdes Road	Ryandale Road	Woodview Drive
Concept Road 74	Edgefield Street	Lydell Drive	S. Gaskins Road	Wyndham Lake Drive
Concept Road 100	Eisenhower Drive	Maplewood Road	S. Mooreland Road	Wyndham Park Drive
Concept Road 101	Eubank Road	Maybeury Drive	S. Ridge Road	Yarnell Road
Concept Road 104	Eunice Drive	Meredith Woods Road	Sadler Road	--

Major Access Roads

These roads generally serve abutting land with high levels of commercial and industrial development. Roads within business and industrial parks are prime examples. Because of the abutting land uses, these roads generally require higher design standards than local residential streets.

The function of major access roads is to provide access to existing or proposed commercial/industrial concentration centers. Major access roads, also will allow safe and efficient movement of goods and services.

A complete list of the major access road facilities is shown in **Tables T-10A** and **T-10B: Major Access Roads**.

TABLE T-10A: MAJOR ACCESS ROADS (PARTIAL LINKS)

Major Access (Partial Links)	From	To
Concept Road 143	Brooks Road	Magellan Parkway
Cox Road	Nuckols Road	End
Impala Drive	End	Glenside Drive
Old Williamsburg Road	End	E. Williamsburg Road
St. Charles Road	E. Parham Road	Magellan Parkway
Technology Boulevard	E. Williamsburg Road	End
Technology Boulevard	Memorial Drive	Portugee Road
Westmoreland Street	Thalbro Street	Maywill Street

TABLE T-10 B: MAJOR ACCESS ROADS (FULL LINKS)

Major Access (Full Links)		
Byrdhill Road	Elko Tract Road	Par Street
Concept Road 40	Emerywood Parkway	Park Central Drive
Concept Road 51	Enterprise Parkway	Prestwick Road
Concept Road 80	Franklin Farms Drive	Vawter Avenue
Concept Road 94	Glen Alden Drive	Vernon Road
Concept Road 97	Greendale Road	Waco Street
Concept Road 174	Mary Street	Willard Road
Concept Road 183	Maywill Street	Zulu Road
Discovery Drive	Old Staples Mill Road	--

Residential Collectors

These roads are not shown on the 2026 Major Thoroughfare Plan Map. They generally provide the same service as a minor collector at a slightly lower level of mobility and a slightly higher level of access than a minor collector. These roads are primarily located in residential areas. The function of a residential collector is to collect and move traffic between local streets or cul-de-sacs in residential neighborhoods and move traffic to minor and major collectors. Residential collectors will:

- Provide for longer travel distances than local streets within residential neighborhoods.
- Provide “through” access to abutting property.
- Discourage “through” traffic on local streets.
- Encourage lower speeds on local streets.
- Control entrances to provide safe and efficient local traffic movement between local streets and the arterial system.

Local Streets

These roads are also not shown on the 2026 Major Thoroughfare Plan Map. The function of a local street is to provide direct access to abutting land and to the collector system. Local streets will:

- Serve shorter travel needs.
- Provide direct access to abutting properties.
- Give priority to local traffic and pedestrians through a design that encourages low-speed operation.
- Require off-street parking, loading, unloading and access service.
- Require proper location and design of driveways, entrances and exits to ensure safe and efficient ingress and egress.
- Provide a local road network that supports low traffic volumes.
- Discourage connection with streets that serve a function higher than a minor collector.

TRANSPORTATION SYSTEM MANAGEMENT

As part of this Plan, a *Transportation System Management Manual* (TSM Manual) was prepared to address roadway design solutions that will reduce congestion on the county’s road network. This manual is included as Appendix E to this Plan. The *TSM Manual* details general practices to reduce and manage congestion, including specific improvement recommendations for seven (7) county corridors. The techniques for congestion management covered in the manual include:

- Traffic signal coordination
- On-site traffic signal circulation
- Non-traversable median treatments
- Median U-turn treatment
- Advanced left turn treatment
- Consolidated driveways
- Relocated driveways

- Improved intersection turning radii at intersections/driveways
- Left turn storage bays at major driveways
- Exclusive left turn lanes on minor approach and
- Emergency vehicle preemption

The manual also assesses and presents recommendations for improvements along the following corridors:

- Laburnum Avenue
- W. Broad Street
- Gaskins Road
- Parham Road
- Brook Road
- Woodman Road and
- Nuckols Road

Each of these congested corridors was found to be operating below an acceptable level of service with expectations of additional growth and congestion within the corridor. It was found that the opportunity to widen these roads to increase capacity was significantly limited due to surrounding land use, existing terrain or expectations of funding.

PROJECT TIMING

The timing of transportation improvements depends on many factors including the availability of funds, governmental and environmental permits, and project needs compared to priorities. The county will encourage orderly new growth and development in coordination with the provision of public services and facilities. To the extent practical, new roads and widening projects will be timed to coincide with the extension of development, public services and utilities. Furthermore, the county will distribute investments within the transportation system in a fair and equitable manner.

