

CHAPTER 5 TRANSPORTATION PLAN

INTRODUCTION

A Transportation Plan is an essential component of a Comprehensive Plan. Transportation is a big consumer of land, often using more than 10 percent of the available land in a locality. Including it as part of the Comprehensive Plan allows coordination with the Land Use Plan helping to eliminate any conflicts that may exist between the two plans. The key elements of a Transportation Plan are a plan for major thoroughfares, meaning the major roads within a locality that help feed traffic to the commercial districts and the neighborhoods, and an alternative transportation plan that covers mass transit, bicycle and pedestrian travel.

A. DETERMINANTS OF A MAJOR THOROUGHFARE PLAN

Planning for major thoroughfares is a special field in and of itself and the technical aspects of analyzing need, defining and testing alternatives, and designing functional plans are beyond the scope of this general comprehensive plan. The purpose served by including major thoroughfares as part of the generalized land use plan is that it enables the future community to be visualized physically as a whole. Traffic movement throughout the City has a strong effect on the way land is used as well as the other way around. Clearly, the general road concepts offered here must be examined carefully to ensure that they function within the framework of appropriate traffic engineering principles.

1. Classes of Urban Streets:

Urban streets are classified according to the National Committee on Urban Transportation as:

- a. Freeways: including expressways and parkways, are exclusively for rapid movement of large volumes of through-traffic between major traffic generation points. They do not provide access to abutting land.

- b. Major Arterials: provide for through-traffic movement between major and secondary traffic generators within and across the City. Arterials provide some access to abutting property, although control may be imposed upon entrances, exits, and curb breaks.
- c. Collector Streets: provide for traffic movement between major arterials and local streets and provide direct access to abutting property. Most of the traffic is carried on arterial and collector streets and, in many circumstances, one street will serve both functions.
- d. Local Service Streets: provide for direct access to abutting property, such as in residential areas and for local traffic movement. These streets comprise from two-thirds to three-fourths of the total street system within an urban area.

2. Existing Traffic Patterns

The functions of streets are very often defined by their physical location and alignment which, perhaps as much as their design, establish the amount of traffic they are required to carry at a given time. Unless an urban street system is planned in advance of development, it is not unusual for a street of a lower classification to experience high traffic volumes simply because it is the shortest route from one area to another within the City. This situation results from the fact that most of the major streets within a city were established long before the area became built up and traffic usually selects the most efficient route, that is the shortest distance between its origin and destination. In such instances, most of the planning effort must be concentrated on upgrading existing streets to enable them to handle growing traffic volumes. Such is the case in Hopewell.

Streets that have become major thoroughfares by virtue of their location are illustrated in Figure 5.1 which shows the most highly-traveled streets in Hopewell. They are displayed

graphically as 24-hour traffic volumes reported by VDOT¹ in 1995.² The volume of traffic is indicated by the width of the band on each street shown on this map. The highest volumes are on the state routes that carry through-traffic. The highest 1995 volume within the City of about 30,000 vehicles per day, occurred on Route 36 (Oaklawn Boulevard) near the I-295 Interchange. This was at least double the amount of traffic at the same location before the interchange opened. Route 10 is the next highest volume street. Prior to opening the Interstate, the highest volume was on Route 10 at the Appomattox River Bridge, almost 23,000 vehicles per day.

VDOT discontinued traffic counts on the non-state routes after 1995 but they do continue to provide traffic data on Routes 36 and 10. The changes in 24-hour traffic at busy sections of these routes are illustrated below.

**Table 5.1 Changes in Traffic on Key State Routes
Hopewell Virginia**

	1990	1995	2000
Route 10 at the Appomattox River Bridge	23,000	19,600	21,000
Winston Churchill Blvd south of S. Sixth Ave.	18,332	16,615	11,000
Route 36 at Cousins Avenue	less than 15,000	29,982	33,000

It is clear from the traffic on the Oaklawn/Woodlawn Corridor and Winston Churchill Boulevard between the southwestern city lines that this has become a dominant source of traffic for the City of Hopewell. The pattern flowing from Route 10 and the CBD toward Oaklawn at I-295 resembles that of a stream that starts as smaller tributaries and as it merges with larger streams eventually forms a river (Route 36 at I-295). Looking at this stream in reverse and using 1995 traffic volumes, there were 30,000 vehicles per day³ near the Interstate that split off in two directions at Route 36. At that point nearly 14,000 vehicles per day followed South Fifteenth Avenue to City Point Road and Broadway. Another 16,000 vehicles followed Winston Churchill Boulevard to S. Sixth Avenue at which point 10,000 branched into the CBD while another 9,000 continue to Route 10.

¹ The Virginia Department of Transportation.

² The latest counts available from VDOT were taken in 1995; after that traffic counting was limited to the Virginia Numbered Highways, 10, 156 and 36.

³ VDOT reported 33000 vehicles per day in 2000.

Route 10 is the other major entrance to the City. VDOT reported traffic of 21,000 vehicles per day crossing the Appomattox River Bridge in 2000. That traffic at this location, however, had dropped from about 23,000 in 1990 despite the completion of a new and wider bridge during the 1990s.

Peak traffic counts are also used to determine the carrying capacity of the roads. These counts are used to determine if a turning lane is needed, if the signalization needs to be improved or if a road needs redesigned to handle the traffic that it is currently carrying. Daytime traffic counts (7 am to 7 pm) often count 75 percent or more of the 24-hour traffic on those roads. Peak counts, those hours that have the most traffic on individual roads are often eight or nine percent of the 24-hour total. It is these counts that traffic engineers consider when trying to find solutions to peak hour congestion. The following table gives a listing of peak hour traffic counts for selected roads in Hopewell.

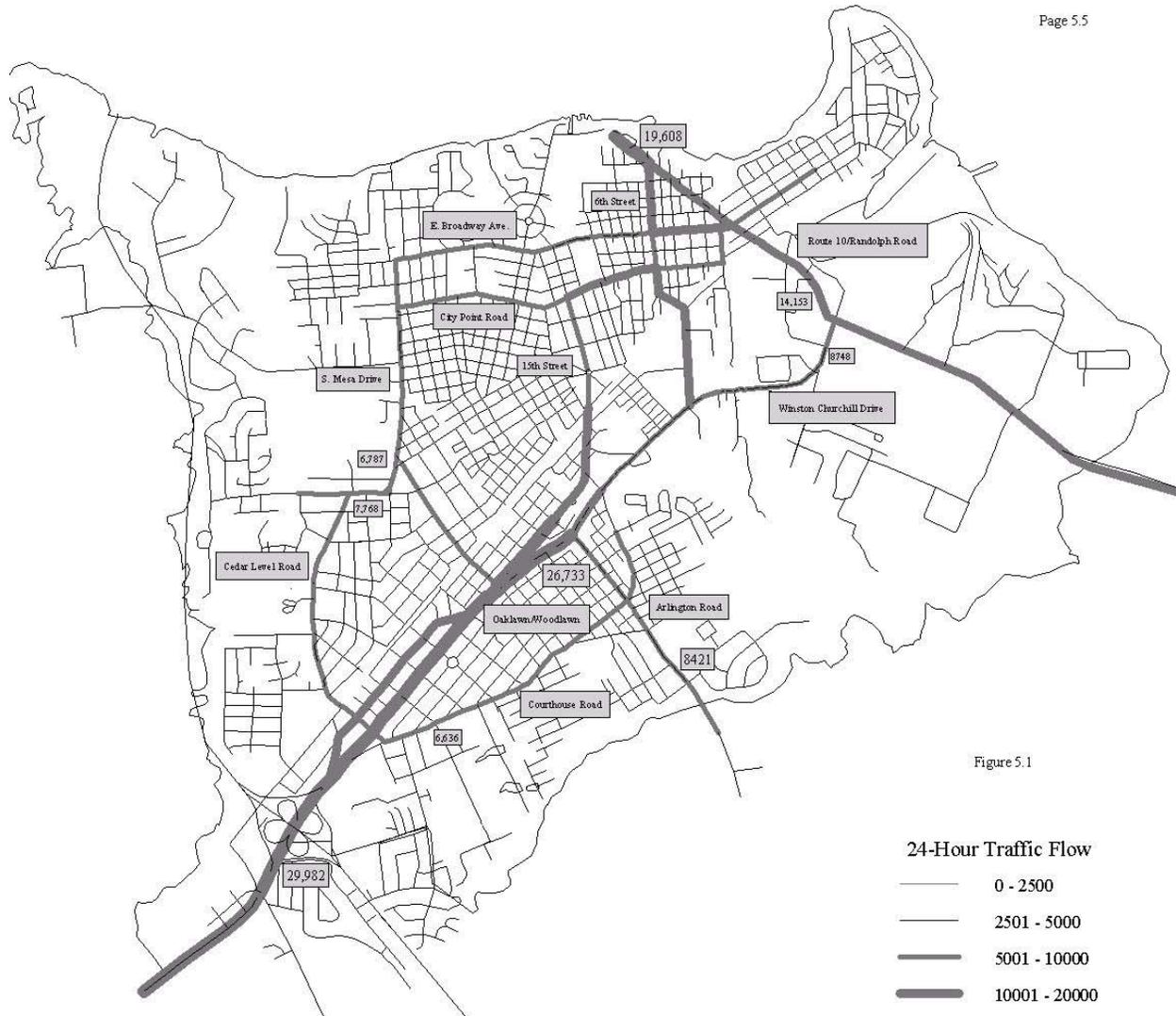
Table 5.2 Peak Hour Traffic Counts.

Site	24-Hour Count	7 am to 7 pm	Percent of 24-Hour	Peak am Traffic	Percent of 24-Hour	Peak pm Traffic	Percent of 24-Hour
Route 10 to 6th Avenue	19,608	15,439	78.74%	1,865	9.51%	1,820	9.28%
Route 10 @ Allied Chemical	12,541	9,787	78.04%	1,061	8.46%	1,122	8.95%
Route 156 @ Palen Dr.	16,615	13,124	78.99%	1,340	8.07%	1,582	9.52%
Route 36 @ Elm	13,838	11,009	79.56%	827	5.98%	1,299	9.39%
West City Limits @ Roanoke Ave.	26,733	21,060	78.78%	1,824	6.82%	2,369	8.86%
Route 36 @ Cousins	29,982	23,308	77.74%	2,161	7.21%	2,688	8.97%

Traffic serving other areas within the city utilizes several major roads. West Broadway as well as West City Point Road function in two capacities. From the CBD to South

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Community Planning Consultants

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Source:
VDOT Traffic Office
City of Hopewell Engineering

Fifteenth Street they feed the traffic system between I-295 and the CBD as described above. Beyond South Fifteenth Avenue they serve as access roads to the major residential areas in the central and western areas of the City. The major north south artery in the western part of the City is the combination of Mesa Drive and Cedar Level Road which connect Broadway and City Point Roads to the Oaklawn/Woodlawn Corridor.

3. Issues Related to Revising the Major Thoroughfare Plan

- a. One feature of the 1990 plan envisaged extending West Broadway to intersect with a new interchange at Interstate 295. Because of decisions made concerning improvements to River Road this option is no longer under consideration. The City is unlikely to implement this item because the interstate connection lies beyond the City and because resources are being allocated to River Road.
- b. The 1990 plan also projected a new north-south road in the western part of the city to share traffic now using Mesa Drive and Cedar Level Road. The street would have connected with Cedar Level Road in the vicinity of Forest Avenue, passed behind the High School, connected with River Road and gone on to West Broadway. This road would have completed a loop road around the internal city by linking Cedar Level Road, West Broadway, Randolph Road, Winston Churchill Boulevard and the Oaklawn-Woodlawn Corridor. The new road would have served as an alternate to Mesa Drive. The construction of the Cobblestone development places some constraint on the location of this road and may foreclose its development entirely. VDOT has opted to realign a portion of South Mesa Drive and Cabin Creek Road where they connect at Jackson Farm Road.
- c. The traffic patterns in Hopewell were changed significantly after I-295 was constructed with two interchanges serving the City. The largest impact came from the intersection at Route 36 which immediately stimulated growth of commercial activities along Oaklawn Boulevard.
 - i. Access to Colonial Corner Shopping Center for westbound traffic on Woodlawn was significantly impacted by the elimination of an easy cut-

through at the main entrance to the Center. Missing the single, poorly marked, cut-through for this shopping center causes citizens and travelers to be directed to shopping beyond the I-295 interchange.

- ii. Conversely, access to the vacant commercial land fronting on Woodlawn for travelers exiting I-295 eastbound on Oaklawn was impacted by the same problem. This land has remained vacant since the interstate was constructed in part because access to the main roads is limited.
- d. The 1990 plan did not include any option for increasing transportation opportunities for those citizens who may not have access to an automobile. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and its successor, the Transportation Equity Act of the 21st Century (TEA-21) each set aside funds to promote the use of alternate transportation methods such as mass transit and bicycling. Alternate modes of transportation help reduce congestion and, concurrently, pollution. They also provide transportation alternatives for those who traditionally have limited access to an automobile, the poor and elderly.
- i. The Tri-Cities Metropolitan Planning Organization has approved a Regional Bicycle Plan. This plan has not been implemented in Hopewell.
 - ii. No capital has been included in the Tri-Cities MPO Long Range Plan for an expansion of transit options for the citizens of the City of Hopewell.
 - iii. Pedestrian walkways are an important section of any locality's transportation system. Hopewell has no set policy for establishing or maintaining pedestrian walkways throughout the City.
- e. Because of the changes in the traffic flow of the City it may be the old system of primary roads no longer accomplishes their main functions, moving traffic through the City in the quickest and safest manner. A realignment of primary roads in Hopewell should be considered.

- i. The traffic counts for Route 36 suggest that this is one of the roads that should be considered for redirection.
- ii. In order to keep tractor-trailers out of the Central Business District, it may be advisable to re-route truck traffic. One solution is to designate a Truck Route 10 traveling down I-295 and up Route 36. Another solution would be to re-route trucks down 6th Street and out of the CBD.

4. Planned Traffic Projects Through the Year 2023

The Tri-Cities Area Metropolitan Planning District (Tri-Cities MPO) completed work in January 2001, on the *Year 2023 Long-Range Transportation Plan*, a document that provides guidance and support for transportation planning for the communities in the Tri-Cities area (the cities of Hopewell, Petersburg, and Colonial Heights, as well as parts of the Counties of Prince George, Chesterfield, and Dinwiddie.) The following table illustrates projects for the City of Hopewell that are included in that plan.

Table 5.3 Long Range Transportation Plan Projects

Project Name	From	To	Distance	Improvement Description	Lanes
Cedar Level Road	Kippax Dr.	Mesa Dr.	1.2 Miles	Widening	4
River Road	Western City Limits	Mesa Dr.	1 Mile	Reconstruction	2
Courthouse/Berry St.	Oaklawn Blvd.	High Ave.	1.4 Miles	Widening	4
Miles Ave.	Winston Churchill Blvd	Courthouse Rd.		Reconstruction and New	4
Berry St.	High St.	Churchill Dr.	1.4 Miles	Widening	4
Randolph Rd.	Churchill Dr.	Sixth St.	1.1 Miles	Widening	4
Sunnyside/Oaklawn/15 th	Churchill Dr.	Norfolk & Western RR.	.7 Miles	Widening	4
Improve Rail Crossing	Route 156	NE 1 st . Ave.		Crossing Improvement	
Improve Rail Crossing	Main Street	City Point Road		Flashing Gates Motion Detectors	

There is no guarantee that these projects will take place. This is a “financially constrained” document, meaning that projected project costs must not exceed identified fund sources. The projects listed in Table 5.3 are expected to cost more than \$59 million.

VDOT has begun work on the first three projects. Funds have been allocated for the top two projects to complete the engineering, acquire the right-of-ways, and begin construction. The Cedar Level Road project will involve not only a widening of the road but also a realignment to bring Cedar Level more in line with Mesa Drive. This will ultimately involve some residences having to change their addresses from Jackson Farm Road to Cedar Level Road. This project will help “complete” the loop road that was discussed in the 1990 plan but never came to fruition. The River Road project is a reconstruction and widening project that will allow for easier travel on River Road.

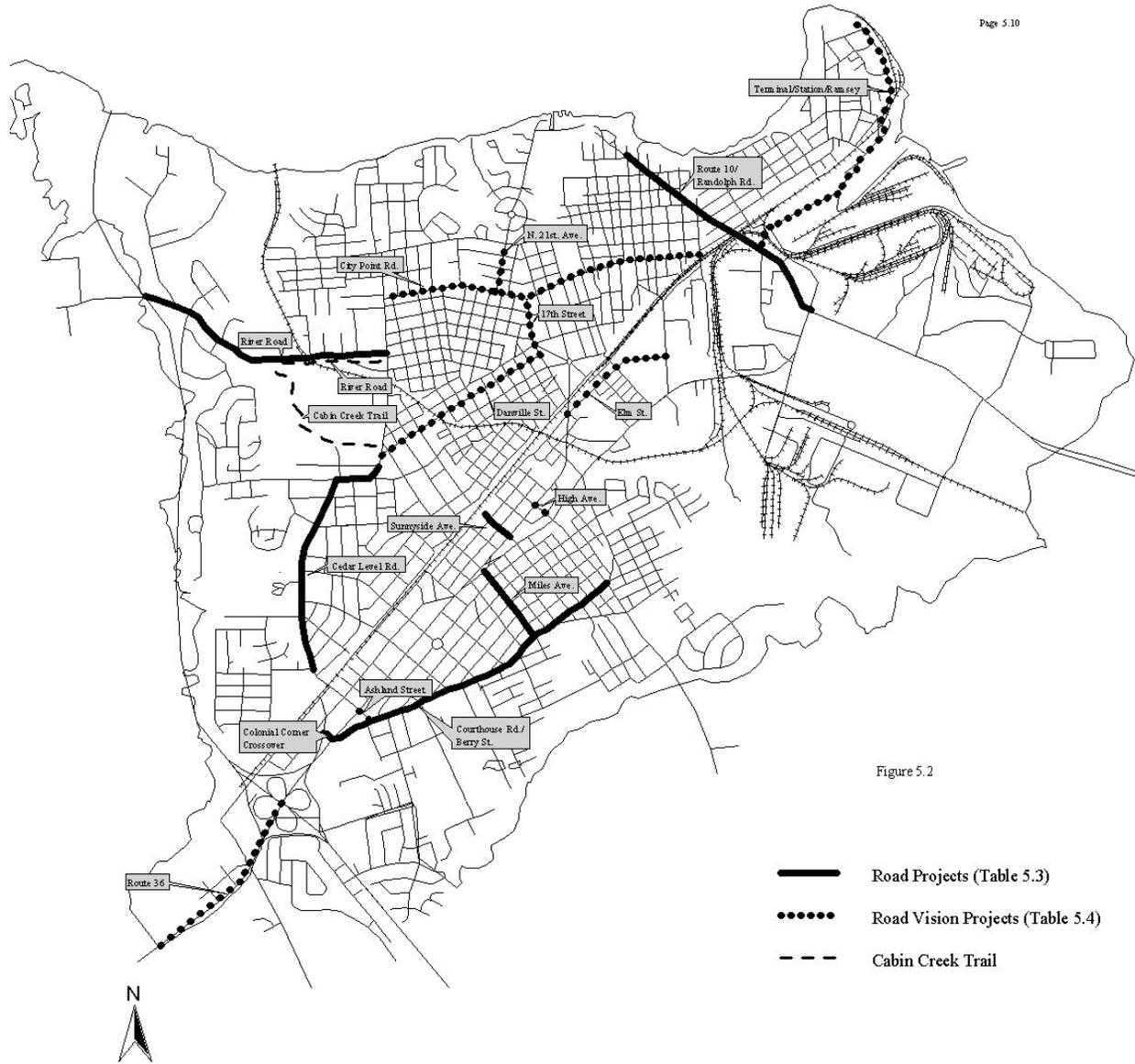
The Courthouse Road/Berry Street project is a street-widening project that will help to handle the increased traffic on that road. That project has been funded to complete the engineering work. Neither right-of way acquisition nor construction has yet been funded.

There are also projects identified in the report that do not have an acknowledged fund source. These are listed as “Vision Projects”. They would be completed only if funding became available. The following table lists those projects.

Table 5.4 Long Range Transportation Plan Vision Projects

Project Name	From	To	Distance	Improvement Description	Lanes
City Point Rd.	Main St	Mesa Dr.	1.5 Miles	Widening	4
Terminal/Station/Ramsey	Randolph Rd.	Pecan Ave.	1.3 Miles	Widening	4
High Ave.	Winston Churchill Blvd	Oaklawn Blvd.	.56 Miles	Widening	4
Danville St.	Mesa Dr.	17th St.	.8 Miles	Widening	4
21st Ave.	W. Broadway	City Point Rd.	.2 Miles	Widening	4
Elm St.	6 th . Ave.	15th. Ave.	.6 Miles	Widening	4
Oaklawn Blvd.	I-295	Western City Limits	.8 Miles	Widening	4
17th Ave.	City Point Rd.	15th. Ave.	.45 Miles	Widening	4
Ashland St.	Courthouse Rd.	Old Iron Road	.2 Miles	Realignment and New	4

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The 2023 Plan includes projects that are designed to help the localities within the MPO attain or maintain federal air quality standards. These projects are mandatory in areas where air quality emissions have exceeded the federal standard. Hopewell, Colonial Heights, and Petersburg all violated that standard in the past year. Listed in the table below are projects that the MPO has determined will help improve the air quality of the City of Hopewell with regard to traffic. These projects are being funded by Congestion Mitigation & Air Quality (CMAQ) Funds.

Table 5.5 Long Range Transportation Plan CMAQ Projects

Project Name	From	To	Distance	Improvement Description	Lanes
W. Churchill Dr.	Jefferson Park (Route 630)	NA	NA	Turn Lane	NA
Route 36	Jefferson Park (Route 630)	Temple Ave. Ramp	NA	Signalization	NA
Ozone Alert Program	NA	NA	NA	NA	NA
Colonial Corner Crossover	Woodlawn Blvd.	Colonial Corner Shopping Center		Widening and improving the Crossover	4

B. DETERMINANTS OF AN ALTERNATIVE TRANSPORTATION PLAN

While the Major Thoroughfares Plan concentrates on moving vehicles quickly and safely through the city, the Alternative Transportation Plan must focus on moving people safely through the city. This entails not only looking at the major streets and roads but also at the neighborhoods and the demographics of the population. Studying the demographics of the population shows how many citizens may be in need of alternate transportation. Large numbers of elderly may point to a need for a handi-ride service that would enable them to maintain independence. Large numbers of poor may show a need for a mass transit system that would allow people to travel to jobs and allow them to visit the commercial establishments in the area.

The City and State are looking at improving the alternative transportation methods available in Hopewell. The River Road project and the Courthouse Rd./Berry St. project

both have proposed bike lanes. Attempting to address part of this problem is the Cabin Creek Trail connecting Atwater Park/Atwater Soccer Complex and Crystal Lake/Mathis Park while ultimately connecting the new athletic fields at Hopewell High School.

The Alternative Transportation Plan should also focus on connectivity in the City. All areas of the City should be connected and easily accessible by those who have limited mobility or lack access to a motorized vehicle. Connectivity of the neighborhoods, commercial areas, and industrial areas allows people to travel easily from one area of the City to another without clogging the main roads that move traffic through the City.

C. POLICIES AND STRATEGIES OF THE TRANSPORTATION PLAN

1. Major Thoroughfares

Since the previous thoroughfares plan, there have been numerous changes in the traffic flow in the City. In 1992, I-295 opened and changed forever the flow of traffic on Oaklawn and Woodlawn boulevards. I-295 also changed the mix of traffic flowing through the City. Other changes in traffic flow and mix were brought on by changes in land use and changes in the commercial composition of the City.

- (a) Work with VDOT to finish all funded projects in the 2023 Long Range Plan.
- (b) Attempt to obtain funding for those projects listed as “vision projects” in the 2023 Plan.
- (c) Improve access to the commercial land in the Oaklawn/Woodlawn Corridor through the use of a crossover with signalization at the Colonial Corners Shopping Center.
- (d) Work with the State to re-route truck traffic away from the Central Business District. Create a Truck Route 10 that moves the trucks down I-295 to Route 36, then up 36 to Winston Churchill Boulevard and Route 10.
- (e) Consider asking the State to redirect Route 36 up Winston Churchill Boulevard to Route 10 rather than through the CBD.
- (f) Continue to fine tune signalization to reduce traffic back-ups and congestion.

2. Alternative Transportation

As noted earlier in the plan there is a segment of the population of the City that does not have access to automobiles. These citizens, generally the elderly, the poor and the young, should also have access to transportation even though they may not own or drive an automobile. For these citizens transit, bicycles, and pedestrian lanes enable them to carry out their day-to-day activities.

Mass Transit: Currently there is no mass transit service in Hopewell. There is one taxicab company in Hopewell and three others in Petersburg that serve Hopewell as well. While taxi service is important to the transportation infrastructure of the city and plays an important role in transporting citizens, it can be expensive to rely on taxi service as your sole means of transportation. There is a “handi-ride” service in the City for the elderly that is run out of the Department of Recreation and Parks.

- (a) Begin talks with Petersburg Area Transit and the Tri-Cities MPO to extend bus service to the City of Hopewell.
- (b) Encourage and promote the expansion of the non-profit “handi-ride” service to include all who need such a service, not necessarily just the elderly.

Bicycle Routes: There are no designated bike routes in Hopewell. The Tri-Cities MPO has stated that a regional bike plan has been approved although this plan does not seem to have been implemented in the City.

- (a) Implement the Tri-Cities MPO Bicycle Plan.
- (b) Work with VDOT to have the establishment of bicycle lanes made a priority with all new road construction in the City.
- (c) Add bicycle lanes to existing roadways where feasible.

Pedestrian Lanes and Access: Many of the neighborhoods in the City have no sidewalks. This means that people choosing to walk must walk on the berm of the road. This is not a safe alternative, especially for those who must walk. Pedestrian lanes do also not

connect many areas of the City, especially the retail centers near the I-295 interchange. Finally, crossing many of the major roads in the City is often risky due to continuous turn lanes and short signalization.

- (a) Secure funding to complete the Cabin Creek Trail and study whether this trail can be extended to other parts of the City.
- (b) Require new residential developments to ensure ease of pedestrian traffic.
- (c) Work with VDOT to have sidewalks added to all roadway construction where appropriate.
- (d) Conduct a Pedestrian Access study to show ways to improve pedestrian access in the City.
- (e) Install signalized crosswalks at major intersections and ensure that pedestrians can cross safely.