A Vision for Transit in Eastern Henrico
Transit Development Plan

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Prepared for:
GRTC
TRANSIT SYSTEM
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Transit Development Plan

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Henrico County
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EXECUTIVE SUMMARY

Eastern Henrico County is in the process of major changes. A number of large developments have been approved, such as Rockett’s Landing, Town of Tree Hill, and Wilton on the James, with more expected to come in the near future. Current traffic conditions in Eastern Henrico are beginning to show patterns of congestion. These factors along with current economic conditions and rising fuel costs call for a sustainable solution to transporting individuals. Public transit is this solution.

Despite the aforementioned conditions supporting a need for transit, the current land use regulations are not supportive of transit. Land uses are currently separated with densities at levels that won’t currently supportive transit. In addition, many of the developments currently being constructed are not friendly to pedestrians. The combination of these factors pose a challenge to creating a successful transit system.

This plan lays out a framework for the creation of a viable transit network in Eastern Henrico. A number of key corridors were identified that will support a variety of transit modes. The Williamsburg Road, Laburnum Avenue, and Route 5 corridors will provide the backbone for transit in Eastern Henrico. These corridors in concert with specialized services, such as circulators and shuttles, will create a transit network that serves areas like Sandston, White Oak Technology Park, and the industrial uses along Laburnum Avenue, while also connecting to the larger transit network. The result, will be a transit network that serves the residents, employers, and visitors to Eastern Henrico.

In addition, recommendations for the revision of current and proposed land use guidelines were created to ensure the long-term success of any proposed transit. These changes will help create land uses and developments that are more supportive of transit; offering compact, mixed-use, and pedestrian-friendly features.

Lastly, recommendations were created that along with the proposed transit services and changes to the land use guidelines will ensure the growth of existing and future ridership. New and creative marketing targeted to the intended audiences will help promote increased ridership. Forging partnerships with area employers and other key agencies
will create new transit markets. The creation of a regional body that manages travel demand will also help promote alternative forms of transportation like transit while also improving the overall transportation network.

It is extremely important that all of these objectives be considered when creating future transit services not just in Henrico County but elsewhere. The future success of transit relies on not only the creation of routes but also on transit supportive land uses and other policies that promote its use.
**INTRODUCTION**

Henrico County, Virginia has seen a large amount of growth over the past twenty years. While much of this growth has been focused to the Northwest and Western areas of the County, the Eastern side is beginning to receive more focus as the other areas reach their development potential. This area of the County does pose more restrictions on how much and to what intensity development can occur. With more environmentally constrained land to work around, creative solutions must be devised in order to get the best use of developable land. In addition, the general public seems to be longing for a style of development that will not continue to create the transportation nightmares seen around Short Pump. Developments such as Rockett’s Landing, Wilton on the James, and the Town of Tree Hill are offering alternatives to the traditional suburban neighborhood. These new developments offer a mix of uses at a higher density in an effort to encourage walking while retaining more undeveloped land as an amenity. This form of development allows modes of transportation such as public transit to become an alternative to the large number of single occupancy vehicles currently traveling already congested roadways. With transit becoming a more viable alternative, its use can help alleviate congestion, improve air quality, and reduce the impact of rising fuel costs on the average citizen. Through smart land use planning and efforts to educate developers looking to develop in Eastern Henrico about forms of development supportive of transit, Henrico County can encourage greater expansion and use of transit for its residents.

The Eastern Henrico Transit Development Plan provides a vision of what this alternative could look like. The time horizon for a plan of this nature is 20 to 25 years. This plan, which is a requirement of the Spring 2008 Studio II Course, is necessary for graduation in the Master of Urban and Regional Planning program at Virginia Commonwealth University. The plan seeks to identify potential corridors and areas for expansion of public transit. Using existing and projected information related to demographics, land use, and transportation, an analysis will be conducted to determine viable locations for transit. Recommendations to ensure the long-term success of transit will be presented. The end result should be a transit network that works in concert with future land use patterns to offer an alternative to driving the private automobile.
PART I: EXISTING CONDITIONS AND ANALYSIS

STUDY AREA

The study area for this plan was determined based on a number of factors (Refer to Map 1). The first is location of recently approved large developments and other existing attractions. The developments of Rockett’s Landing, The Town of Tree Hill, Wilton on the James, and the Shops at White Oak Village, will play a large role in shaping this area of the County. They are some of the first large-scale planned developments approved in Eastern Henrico. Other key features in this area of the County are: Richmond International Airport because of its role as the regional airport for Central Virginia, and a number of large industrial parks like Sauer Business Park and White Oak Technology Park. These locations were laid out on a map and overlayed with the current traffic analysis zones (TAZ). TAZs were chosen over census tracts because they comprise smaller areas and will allow for better analysis. They are also the zonal level studied for most transportation related planning. This boundary includes areas east of the City of Richmond, south of Interstate 64, west of Interstate 295 (except at the northern point because of the White Oak Technology Park), and north of the James River. This study area encompasses a wide range of existing land development patterns. Northern areas of the study area include older residential and commercial areas, some of which show a need for revitalization. The center and easternmost portions of the study are home to industrial uses and the airport. As you move south and approach the James River, the study area begins to appear more rural in character. There are small-scale suburban neighborhoods surrounded by farms. As these newly proposed developments approach completion these land patterns will be dramatically altered just by their location. The rural areas will begin to see more residents and activity on what are currently rural roads. The northern commercial areas will also see more activity because of their proximity to these new residential developments in the South.
Map 1: Study Area
Land Use

A visual survey of the study area begins to clearly identify some key corridors. Williamsburg Road contains many commercial land uses. The Williamsburg Road commercial corridor is in need of revitalization as it approaches the City of Richmond, with older buildings, many of which appear run down and some of which are vacant. The area referred to as Sandston is organized like a modern village, with commercial activity fronting the main road and residential uses flanking the sides. Laburnum Avenue is another major commercial corridor. Similar in style to Williamsburg road, with strip mall shopping centers and large parking lots. The new shopping mall, Shops at White Oak Village, will be located near the intersection I-64 and Labumum. Heading south on Laburnum there is a change from commercial activity to industrial activity. There are a number of industrial parks along both sides of Labumum as it approaches I-895. This location is close to Richmond International Airport (RIC) as well as I-895 and I-64. The other major industrial area can be found east of the airport in the White Oak Technology Park. This industrial/office park is predominately undeveloped with only a couple of major industrial businesses located here at present. The last major corridor within the study area is the Route 5 corridor. This two-lane undivided state highway is currently surrounded by large lot farmhouses and scattered suburban neighborhoods. This corridor is primarily residential with a commercial node at the intersection of Route 5 and Strath Road.

Currently, there are two sources for land use information and comprehensive planning for Henrico County. The County currently uses the 2010 Land Use Plan. The Board of Supervisors accepted this plan on December 13, 1995. Since the planning horizon for this document is approaching, the County is nearing the completion of the 2026 Comprehensive Plan. This plan is in a draft format available to the public. Since the 2026 plan has more up to date data and information related to County projections, this plan has been chosen over
A VISION FOR TRANSIT IN EASTERN HENRICO

the current 2010 plan. A comparison of the land use plan map for the study area from each plan is used to show current land use and any changes being proposed by the new plan.

According to the Henrico County Vision 2026 Draft Capacity Analysis the area of the County with the largest potential developable areas lie in the Eastern part of Henrico. Within the study area, the majority of this land was located south of State Route 5, along the I-895 corridor, and within the Williamsburg Road, Elko Road area east of Richmond International Airport. It should be noted that many of the areas in the Eastern portions of the county have more natural constraints to development than in the Western half. These constraints limit the total amount of land available for development.

In order to determine the potential development densities for the County, the Henrico County Vision 2026 Draft Capacity Analysis applies three scenarios. The first uses the existing zoning as of September 2004, the second scenario uses the 2010 Land Use plan, but breaks it into a “A” and “B” option because the plan calls for a range of densities. Table 1 below shows the capacity created by these three scenarios and compares it to the demand projections calculated in the Henrico County Vision 2026 Draft Demand Analysis (Henrico County Vision 2026 – Draft Capacity Analysis, 2008).

| Table 1. Development Demand and Capacities Comparison for Henrico County |
|-----------------|-----------------|-----------------|-----------------|-----------------|
|                | Scenario 1      | Scenario 2A     | Scenario 2B     |
|                | (Existing Zoning) | (2010 Land Use - Low) | (2010 Land Use - High) |
| Residential Units |                  |                  |                  |                  |
| Demand         | Residential Units |
|                | 51,563 | 61,999 | 20,726 | 59,965 |
| Single Family Units | 31,979 | 51,931 | 16,706 | 49,329 |
| Single Family Attached Units | 4,015 | 4,365 | 1,171 | 2,342 |
| Multi-Family Units | 15,569 | 5,703 | 2,849 | 8,295 |
| Non-residential Building Area (SF) |                  |                  |                  |                  |
| Commercial/Residential (SF) | 37,766,388 | 59,964,368 | 93,569,607 | 97,169,555 |
| Office (SF) | 8,974,808 | 8,893,939 | 14,118,593 | 15,806,155 |
| Industria I/Flex (SF) | 19,446,220 | 16,351,685 | 38,100,732 | 39,624,044 |
| Source: Henrico County Vision 2026 Draft Capacity Analysis Table 9 |
This comparison shows that the “B” scenario from the 2010 land use plan meets most of the projected demand and in many instances exceeds it. This is accomplished using less land because of the use of a higher development density when compared to the existing zoning and scenario “A”. The use of higher development densities will help ensure the success of any transit service implemented within the study area. As development densities increase, you also increase the number of people around any one point, allowing more people to access transit than would be possible under lower density land development scenarios.

The demand for new housing is going to be dependent on the future population. While there is some difference between the projected population calculated by the 2026 Plan (410,812 for 2030) and the RRPDC Socioeconomic Data Report (416,819 for 2031), the capacity should be more than adequate to accommodate either figure. According to an analysis of 2003 population data for the county, an estimated 73 percent of the population lived in single-family detached housing units. While demand projections from the Vision 2026 Demand Analysis keep this percent constant for the planning window, they do note that it will ultimately be up to the County to determine the percentage of single family versus multi-family housing units (Henrico County Vision 2026 – Demand Analysis, 2008). Efforts to promote higher concentrations of multi-family housing along proposed transit routes will also promote greater success. As mentioned above, when you increase population and development densities around transit, more people are able to access the service.

The land use patterns for Henrico have changed over the previous fifteen years, mainly due to the increase in population, changing housing market, and improvements in technology. Many areas that were predominately rural in the 1980s have now developed into more suburban areas. Table 2 below shows the changes from 1990 to 2004. This indicates that the acreage of land used for commercial uses nearly doubled over the 14-year period. This does not seem right with only a third of an increase in the population and housing units (Henrico County Vision 2026 Draft Comprehensive Plan, 2008).
Table 2. Change in Land Use (1990-2004)

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>2004</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>221,287</td>
<td>288,735</td>
<td>30.48%</td>
</tr>
<tr>
<td>Housing Units</td>
<td>95,420</td>
<td>121,505</td>
<td>27.34%</td>
</tr>
<tr>
<td>Acreage:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family Residential</td>
<td>28,072.6</td>
<td>36,162.4</td>
<td>28.82%</td>
</tr>
<tr>
<td>Multi-Family Residential</td>
<td>2,651.1</td>
<td>3,599.1</td>
<td>35.74%</td>
</tr>
<tr>
<td>Group Quarters</td>
<td>270.6</td>
<td>415.9</td>
<td>53.70%</td>
</tr>
<tr>
<td>Industrial</td>
<td>2,514.1</td>
<td>3,959.8</td>
<td>57.47%</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>8,928.4</td>
<td>9,375.6</td>
<td>5.01%</td>
</tr>
<tr>
<td>Commercial</td>
<td>3,810.6</td>
<td>5,954.3</td>
<td>56.26%</td>
</tr>
<tr>
<td>Public/Semi-Public</td>
<td>9,181.3</td>
<td>10,842.7</td>
<td>18.10%</td>
</tr>
<tr>
<td>Water</td>
<td>4,341.4</td>
<td>4,353.0</td>
<td>0.27%</td>
</tr>
<tr>
<td>Vacant</td>
<td>96,199.1</td>
<td>81,537.4</td>
<td>15.24%</td>
</tr>
</tbody>
</table>

Source: Henrico County Vision 2026 Comprehensive Plan pg. 10

The changes in land use have been pretty dramatic over the course of the fourteen years observed. The County’s has almost consumed half of its approximate 156,000 acres of total land. It should also be noted that the land being used for multi-family and group quarters grew faster than the single-family use during this time period (Henrico County Vision 2026 Draft Comprehensive Plan, 2008). These increases show efforts to improve housing options and densities within Henrico that would be more supportive of transit.

A comparison of the land use maps from the 2010 and Draft 2026 Plan shows some slight differences. The area along Route 5 that was classified as office has been reclassified as traditional neighborhood development. This falls more in line with what is currently planned in the area. They also indicate more mixed-use developments along this corridor, which prior was primarily classified single family residential. The 2026 Draft Land Use Map also classifies more land as traditional neighborhood development. This is a new classification that attempts to recreate many of the older neighborhood development styles with pedestrian amenities and smaller setbacks and side yards. The only other major changes appear to be a focus of commercial, office, and industrial uses along sections of I-295 that weren’t classified this in the 2010 plan. A comparison of these two land use plans can be seen below. Many of the proposed changes in the 2026 Draft Land Use Map are more supportive of transit. The efforts made to offer a higher mix of land uses and concentrate development around key areas allows for more density.
While Henrico’s proposed densities still fall short of being truly transit supportive, they are moving in a direction that is more amendable to transit.
Land Use Densities

Table 3 shows the different land use classifications for the draft land use plan along with their corresponding densities. This is important when determining whether the land uses will support traditional transit service or require creative solutions. It is extremely apparent that the majority of the residential land use classifications make it difficult to support transit. The multi-family residential development, traditional neighborhood development, and urban mixed-

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Maximum Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Residential/Prime Agriculture</td>
<td>1 unit/acre</td>
</tr>
<tr>
<td>Suburban Residential 1</td>
<td>2.4 units/acre</td>
</tr>
<tr>
<td>Suburban Residential 2</td>
<td>3.4 units/acre</td>
</tr>
<tr>
<td>Urban Residential</td>
<td>6.8 units/acre</td>
</tr>
<tr>
<td>Multi-Family Residential Mixed-Use</td>
<td>19.8 units/acre</td>
</tr>
<tr>
<td>Suburban Mixed-Use</td>
<td>4 units/acre</td>
</tr>
<tr>
<td>Traditional Neighborhood Development</td>
<td>10 units/acre</td>
</tr>
<tr>
<td>Urban Mixed-Use</td>
<td>40 units/acre</td>
</tr>
</tbody>
</table>

Source: Henrico County Vision 2026 Draft Comprehensive Plan, Chapter 5: Land Use
use development are the three classifications that would truly support transit by offering an acceptable density of units (Henrico County Vision 2026 Draft Comprehensive Plan, 2008). A comparison can be made with Table 4 below, which illustrates the appropriate densities for different modes of public transit.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Density (units/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate Bus</td>
<td>7</td>
</tr>
<tr>
<td>Frequent Bus Service</td>
<td>15</td>
</tr>
<tr>
<td>Light Rail</td>
<td>9</td>
</tr>
<tr>
<td>Heavy Rail</td>
<td>12</td>
</tr>
</tbody>
</table>


Land Use Goals

The Draft Vision 2026 Comprehensive Plan lays out a number of goals that are relevant to this plan. The comprehensive plan seeks to promote more mixed-use and traditional neighborhood development as opposed to current suburban development models. It also discusses the need to use available resources wisely and not too exceed existing infrastructure. Goals relating to transportation emphasize the importance of having a network that supports different modes of transportation as well as multimodal transportation facilities to meet the needs to a diverse population. While the goals and objectives of the plan don’t come out and promote greater use of public transit, the push for more mixed-use development and a multimodal transportation network go far to promote its use. In addition, use of transit can help reduce the need to expand existing infrastructure in the form of roads to accommodate more people (Henrico County Vision 2026 Draft Comprehensive Plan, 2008).

Strategy Areas

Chapter 7 of the Draft Vision 2026 Comprehensive Plan identifies areas within the County that should receive special focus because of unique challenges associated with their location. These Special Strategy Areas were broken into four categories. They are:
1. **Existing Character Protection Areas** - corridor or neighborhoods with distinctive natural or built character
2. **Mixed-Use Growth Areas** - areas requiring additional attention in addition to the existing mixed-use guidelines because of unique challenges
3. **Neighborhood Enhancement Study Areas** - established residential neighborhoods that are experiencing non-residential encroachment or reinvestment/revitalization
4. **Revitalization/Reinvestment Opportunity Areas** - areas that are exhibiting a loss of investment from the private sector and require special strategies

The table below lists the four-strategy area categories along with the areas identified in the Vision 2026 Draft Comprehensive Plan that fall within the study area (Henrico County Vision 2026 Draft Comprehensive Plan, 2008).

<table>
<thead>
<tr>
<th>Table 5. Study Area Special Strategy Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategy Area</strong></td>
</tr>
<tr>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Existing Character Protection Area</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Mixed-Use Growth Area</td>
</tr>
<tr>
<td>Neighborhood Enhancement Study Area</td>
</tr>
<tr>
<td>Revitalization/Reinvestment Opportunity Area</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Source: Henrico County Vision 2026 Draft Comprehensive Plan Chapter 7

It is important to mention that the area along New Market Road and Osborne Tumpike has been classified as a “character protection” area. The amount of proposed development that will locate along these corridors will dramatically change the character unless alternatives to single occupancy vehicles are created. The use of transit along these corridors could lessen the impact of these new developments by consolidating vehicle trips and helping retain the “small-town” feeling of these corridors. The mixed-use village around Varina will also help to promote transit. The creation of a denser, mixed-use node will create a location for a potential transit facility. Lastly, the reinvestment in areas along Williamsburg Road, Sandston, and Rockett’s Landing will create opportunities for infill and redevelopment. These can lead to areas that are developed at a higher density, especially along Williamsburg Road. This corridor runs from downtown Richmond out to the Richmond
International Airport (RIC), and provides an older area seeking reinvestment along a potentially high traffic corridor. Focus of more transit-oriented development along the Williamsburg Road corridor could be the missing piece to revitalizing this area.

Enterprise Zone

Henrico County has established enterprise zones in areas they wish to target stimulation of business investment and overall economic growth. In 2006, the County expanded the enterprise zone to include areas of Laburnum Avenue, Audubon Drive, and Williamsburg Road, which fall inside the Study Area. Through the zone, incentives are offered by the county to promote businesses to locate inside these areas that have typically fallen into disinvestment. The map below shows the boundaries of the County enterprise zone that falls inside the Study Area. The use of incentives within the zone along Williamsburg Road and Laburnum Avenue could be used to promote higher density, mixed-use development. This in concert with a high level of service transit would provide a synergy to promoting development along this redeveloping corridor (Henrico County Vision 2026 Draft Comprehensive Plan, 2008).

Transportation

The Henrico County Vision 2026 Draft Comprehensive Plan Chapter 10 on Transportation says, “A good transportation network plays a role in the ability to travel throughout the County 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, bus services, and automotive travel.”

Available Modes

In order to ensure that more options are available, Henrico is encouraging the use of sidewalks in all new developments as well as the requirement for sidewalks along all new and reconstructed major thoroughfares. This objective will help ensure that walking is a viable mode of travel, while also improving pedestrian access to transit. This is extremely important because most people access the bus by walking.
Currently, bus service is offered in selected areas of the County through a contract with GRTC Transit System. This service operates 7 AM to 7 PM Monday through Friday only. Henrico currently has 9 major routes that connect residents to the City of Richmond as well as key destinations within the County. Express bus service is linked to four park and ride lots, one of which is located within the study area. There are 5 routes that operate in some portion of the study area (Map 3). For those residents that require transit service, but can't access the fixed-route services because of disability, GRTC provides Para-transit service as well. The only recommendation for transit within the plan is for the County to monitor resident satisfaction with the service and ensure adequate service (Henrico County Vision 2026 Draft Comprehensive Plan, 2008).

Map 3: GRTC Routes Currently Serving Study Area
Richmond International Airport (RIC) is located within the study area and is Central Virginia’s passenger and cargo air service provider. The airport is located off Route 60 – Williamsburg Road and is easily accessible from I-64, I-295, and eventually I-895 (Henrico County Vision 2026 Draft Comprehensive Plan, 2008). RIC has seen steady growth in passenger activity over the past twelve years. This growth has prompted expansion of the terminal and additional parking facilities to be constructed (Flyrichmond, 2008). From 1995 to 2007 the annual passenger activity has increased almost 71 percent, reach 3, 634,544 passengers enplaned and deplaned from RIC (Troy Bell, 2008). These figures support its importance to the region and as a major trip attraction and generator within the study area. Individuals seeking to get to the airport by public transit can currently use the 56-South Laburnum. The 56 makes six trips to the airport during peak travel times. The route carries passengers from Downtown along Darbytown Road and through the industrial parks along Laburnum before connecting with the airport (GRTC Rideguide, 2008). Service to the airport should be more direct and run throughout the day in order to connect downtown Richmond to the Airport.

<table>
<thead>
<tr>
<th>Table 6. Richmond International Airport Passenger Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Change (1995-2007)</td>
</tr>
<tr>
<td>Total Passenger (Enplaned/Deplaned)</td>
</tr>
<tr>
<td>2,128,184</td>
</tr>
</tbody>
</table>

Source: Troy Bell, Capital Region Airport Commission

Travel Patterns

A look at the travel patterns of residents within the study area shows that the mode of travel to work for the population 16 and older is consistent with that of the rest of the County. Approximately 84 percent of people within the study area travel to work by driving alone. 11.11 percent carpooled, slightly more than the 9.77 percent for the County. Less than 1 percent of the population used a bus to get to work. This would verify that there is very little transit service currently in the study area (2000 CTPP).
## Table 7. Mode of Travel to Work, Population 16+

<table>
<thead>
<tr>
<th>Mode of Travel</th>
<th>Henrico County</th>
<th>Study Area</th>
<th>Henrico County percent of Total</th>
<th>Study Area Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>136849</td>
<td>12499</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drove Alone</td>
<td>116048</td>
<td>10524</td>
<td>84.80%</td>
<td>84.20%</td>
</tr>
<tr>
<td>Carpoled</td>
<td>13372</td>
<td>1389</td>
<td>9.77%</td>
<td>11.11%</td>
</tr>
<tr>
<td>Bus</td>
<td>1287</td>
<td>118</td>
<td>0.94%</td>
<td>0.94%</td>
</tr>
<tr>
<td>Streetcar</td>
<td>15</td>
<td>0</td>
<td>0.01%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Subway</td>
<td>53</td>
<td>10</td>
<td>0.04%</td>
<td>0.08%</td>
</tr>
<tr>
<td>Rail</td>
<td>18</td>
<td>0</td>
<td>0.01%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Ferry</td>
<td>20</td>
<td>10</td>
<td>0.01%</td>
<td>0.08%</td>
</tr>
<tr>
<td>Bicycle</td>
<td>155</td>
<td>4</td>
<td>0.11%</td>
<td>0.03%</td>
</tr>
<tr>
<td>Walked</td>
<td>1294</td>
<td>111</td>
<td>0.95%</td>
<td>0.89%</td>
</tr>
<tr>
<td>Taxi</td>
<td>83</td>
<td>4</td>
<td>0.06%</td>
<td>0.03%</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>80</td>
<td>10</td>
<td>0.06%</td>
<td>0.08%</td>
</tr>
<tr>
<td>Other means</td>
<td>844</td>
<td>86</td>
<td>0.62%</td>
<td>0.69%</td>
</tr>
<tr>
<td>Worked at Home</td>
<td>3463</td>
<td>195</td>
<td>2.53%</td>
<td>1.56%</td>
</tr>
</tbody>
</table>

Source: 2000 Census Transportation Planning Package Part 1

Along with modes of travel, origins and destinations of workers within the study area were analyzed. The following maps show which TAZs people are coming from to head to work and where they are arriving to work. The largest concentrations of people originate in TAZs along Williamsburg Road and the TAZ between Darbytown Road and Osborne Turnpike. Map 5 shows that downtown Richmond is still a major destination for employment. In addition, the Broad Street, Williamsburg, Road, and Labumum Avenue corridors are major destinations as well. This makes sense with the high concentration of industrial jobs along Labumum Avenue and with RIC nearby as well. It should be a priority of transit to try and provide connections between the origins and destinations of workers within the study area.
Map 4: Study Area Workers - Origins

Map 5: Study Area Workers - Destinations
Traffic Volumes & Congestion

The traffic volumes for the study area have predominantly seen an increase from 2001 to 2006. The roads that saw the largest increase in traffic volumes are Labumum Avenue from I-64 to New Market Road and many of the roads immediately around Labumum Avenue. Overall, within the study area there has been a 6 percent increase in traffic. Areas that saw decreases in traffic volume could be the result of high levels of congestion. One example is Old Osborne Turnpike, which saw a decrease in traffic volume, but also was rated at a level of service of D or worse. This loss in volume could be the result of drivers choosing less congested alternate routes. (VDOT 2001 & 2006 ADT).

Henrico County also conducts its own traffic counts. These counts support the data collected from VDOT. The counts from Henrico County and VDOT indicate that the heaviest volumes of traffic are seen on Labumum Avenue, segments of Darbytown Road, Technology Boulevard, Airport Drive, Williamsburg Road, Brittles Lane, and Route 5. These roads are highlighted in the map below.

The Richmond Area Metropolitan Planning Organization’s (MPO) 2026 Long-

Map 6. High Volume Roads within Study Area (approx. 10,000 veh/day or greater)
Range Transportation Plan completed on April 8, 2004 listed three roads within the study area that operate at deficient levels of service (less than or equal to LOS D). There were also two roads located within the study area that were considered congested (operating at less than 21 MPH of posted speed).

<table>
<thead>
<tr>
<th>Road</th>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Darbytown Road</td>
<td>City line</td>
<td>Labumum Avenue</td>
</tr>
<tr>
<td>Osbome Tumpike*</td>
<td>City line</td>
<td>New Market Road</td>
</tr>
<tr>
<td>Old Osbome Tumpike</td>
<td>City line</td>
<td>Osbome Tumpike</td>
</tr>
<tr>
<td>Labumum Avenue</td>
<td>I-64</td>
<td>Charles City Road</td>
</tr>
<tr>
<td>Williamsburg Road</td>
<td>Airport Drive</td>
<td>Nine Mile Road</td>
</tr>
</tbody>
</table>

Source: Richmond Area MPO; 2026 Long Range Transportation Plan Maps 8-6 & 8-7

**Transportation Projects**

Many transportation projects are in the works for the study area. The Transportation Improvement Plan (TIP) is a short-range (3 years) list of proposed projects. This list includes three projects that fall within the study area. The Wilton Parkway is a proposed road that will connect the new development of Wilton on the James to New Market Road. The second is a connector road from I-895 to the airport, and the final is the Virginia Capital Trail. This multi-use trail will run along Route 5 from Williamsburg to Richmond (TIP, 2006). In addition to the TIP, the 2026 Long-Range Transportation Plan lists a number of projects relevant to this plan and the study area. It calls for expansion of GRTC services along I-64, Nine Mile Road, and Williamsburg Road. There are also plans for the widening of a number of key roads. Sections of Labumum Avenue, Williamsburg Road, and New Market Road are planned for improvements in the future. All these improvements involve adding capacity to the existing road. (2026 Long-range Transportation Plan, 2004). The County’s 2026 Draft Major Thoroughfare Plan also indicates a number of improvements are to be made to intersections within the study area. Many of the roads listed for widening in the 2026 MTP can be found in the study area, indicating that traffic volumes...
are already exceeding the road capacity or are expected to in the near future (Henrico County Vision 2026 Draft Comprehensive Plan, 2008).

**GRTC Transit System**

Greater Richmond Transit Company (GRTC) is the public service agency that provides fixed route bus service to the City of Richmond and portions of Henrico, Chesterfield, and Petersburg. Para-transit services are also provided to the City of Richmond and Henrico County. GRTC currently operates 48 fixed routes, 41 local and 7 express. Service runs 7 days a week in the city from 5AM to 1 AM, with reduced headways on the weekend. Express and Henrico service operates Monday through Friday. Service in Henrico operates from 7AM to 7PM. Funding for GRTC comes from a combination of Federal, State, and local monies along with passenger fares and grants.

Map 7: GRTC Transit System

GRTC ridership has seen steady growth over the past five years. In 2002, GRTC carried just over 9 million passengers and in 2007 they carried just over 10 million. There was a spike in ridership in 2006 that GRTC attributes to the drastic increase in fuel post hurricane Katrina. With an average growth of approximately 3 percent each year, GRTC could expect to
be carrying roughly 17 million passengers by 2030 if this trend continues. The routes that have seen the largest increase in ridership have been the express routes (GRTC, 2008). This trend supports the need for more transit in the suburbs and that it can be a viable alternative to driving personal vehicles.

GRTC is currently working on a number of projects that have the potential to dramatically improve the transit system. Many of these ideas came out of the comprehensive operational analysis that was conducted by a private consultant.

In March of 2008 the consulting firm Vanasse, Hangen, and Brustlin, Inc. submitted a Comprehensive Operational Analysis (COA) to GRTC. This analysis was a system wide study of the operational efficiency and effectiveness of the current transit system. This study examined the existing route structure, passenger counts, origins and destinations for current users, residential surveys for surrounding jurisdictions where potential service expansion is likely to occur, regional demographics, fleet characteristics, historic trends, as well as peer agencies. Using the facts studies, the consultant conducted analyses and created service standard recommendations that GRTC can use in the future to evaluate route success. The plan concluded with a three-phase plan. These phases included
route-by-route service improvements, identification and implementation of transfer centers sites, and development of a bus rapid transit line.

Route change recommendations for the study area include the following:

- **Route 6** - Clarifying the presentation of the schedule and route for the eastern portions of the route. No recommendations were made for a change in routing where the route currently serves Darbytown Road near the city/county line.

- **Route 13** - Should be rerouted on its eastern terminus to include Rockett’s Landing. The intensity of development along Main Street in Shockoe Bottom and out to Rockett’s Landing also warrant the expansion of service hours to 11 PM.

- **Route 7** - With the loss of the Airport Park and Ride location and poor ridership along the eastern portions of the route, rerouting is recommended to incorporate the new shopping destinations being built, such as The Shops at White Oak Village. This route would be shorter and in turn could have headways improved.

- **Route 56** - The route is also being impacted by the loss of a park and ride facility and low ridership. The rerouting recommends using Williamsburg Road out to the airport by way of Eubank, Lewis, and Airport Drive. This change is because ridership along Darbytown Road and Labumum Ave through the industrial areas currently has low ridership.

- **Route 28 (Express)** - This route shouldn’t operate until an acceptable location can be found to replace the Fair Oaks park and ride. Currently, a new location has been found at the intersection of Williamsburg Road and Millers Lane.

In addition to the route changes, the COA also recommends the use of transfer centers to improve service. Currently, GRTC conducts transfer activity between routes on the street at existing bus stops. This practice leaves the customer waiting outside, in harsh weather conditions sometimes, for a transfer. It also creates “de facto” transfer centers on the sidewalk where multiple routes cross. This occurs predominately in the downtown core, and creates situations where large numbers of GRTC customers are standing on the sidewalk. This frustrates business owners and pedestrians because the flow of pedestrian traffic is greatly impacted. The transfer center concept would create a large sheltered area where buses would converge to drop off and pick up passengers. This location can offer amenities such as restrooms, retail services, and electronic passenger information because of the economy of scale created. It also can be linked with other modes of transportation, like rail, to create a multimodal transportation hub. The plan proposes locations in the downtown, Southside, and West End. Several sites near Broad Street between 2nd and 8th were identified for further study as well as sites near Main Street.
Station. The COA recommends creating two smaller transfer centers, one near Broad and 2nd and the other near Main Street Station. A downtown circulator would need to be created to connect the two locations (Vanasse Hangen Brustlin, Inc., 2008). At this present time, GRTC is working with the City of Richmond on a single transfer center concept at Main Street Station. Main Street Station has been seen as a potential multimodal transportation hub for many years. This along with plans to further redevelop Shockoe Bottom and the future routing of high-speed rail through Main Street Station make it an ideal location.

The COA also recommended exploring a more diverse vehicle fleet to better serve the transit system. This project entails using a mix of vehicles from large city buses down to shorter cut-away buses. The buses would be linked to routes based on ridership. This would also allow GRTC to use smaller less obtrusive vehicles in the services it provides at a neighborhood level. It also saves money because smaller vehicles tend to not cost as much as the larger city buses (Vanasse Hangen Brustlin, Inc., 2008).

The final phase calls for the development of a Bus Rapid Transit (BRT) line along the corridor with the highest ridership. Broad Street was identified as this corridor. The use of BRT would bring high frequency bus service to this corridor that provides similar amenities to rail. This could be provided at a significantly lower cost. According to the COA, 19 routes use some portion of Broad Street from 20th Street to Robinson Street. At peak times, there can be as many as 48 buses per hour that pass by one location. The BRT would consolidate these services into one that would provide a very high level of service and amenities along this corridor. The proposal is to follow a similar routing to the existing Route 6. This route travels from Willow Lawn in Henrico County on the western terminus to Darbytown Road near the City/County line. It would originate at Willow Lawn and travel east along Broad Street, making its way over to Main Street and then Rockett’s Landing at its eastern terminus. This recommendation does acknowledge that currently ridership near Rockett’s Landing doesn’t warrant the level of service that BRT would provide, but that as the area develops the BRT line could be phased out to Rockett’s (Vanasse Hangen Brustlin, Inc., 2008). This is a project that GRTC is currently working to build regional support for as well as identify potential funding sources. It is GRTC’s belief that the creation of the BRT line along Broad Street will not only improve service in this corridor and remove the high number of buses currently traveling along but also allow for the reallocation of the current resources to other services.
Key Developments

Rockett’s Landing

Rockett’s Landing is an urban mixed-use project being constructed within Henrico County and the City of Richmond along Route 5 and the James River. The development will include a mix of condominiums, town homes, and apartments. In addition, there will be retail commercial space, restaurant space, office space, and a marina. It is forecasted that approximately 1,823 residents will live in the Henrico portion of Rockett’s. Build out for the portion of the development within the County is expected to be complete around 2010.

A development of this size will be expected to place a burden on the existing transportation network. Route 5 along Rockett’s Landing is a 2 lane undivided state highway. It is projected from the traffic impact study submitted to the County that the development upon completion will add 15,403 total trips on an average weekday (CMSS Architects, 2004). This compared with slightly less than 10,000 trips in 2006 along Route 5 from the City line to New Market Road (VDOT, 2006). During peak hours Rockett’s Landing will produce 873 trips in the AM Peak and 1,350 trips in the PM Peak (CMSS Architects, 2004). The combination of the additional trips that will be added to Route 5 and the residential density support the use of transit. This, along with pedestrian scale and good mix-used design support this as a viable form of transportation.

<table>
<thead>
<tr>
<th>Table 9. Rockett’s Landing Build out Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential Uses</strong></td>
</tr>
<tr>
<td>Condominiums</td>
</tr>
<tr>
<td>Townhouses</td>
</tr>
<tr>
<td>Apartments</td>
</tr>
<tr>
<td><strong>Total Residential Uses</strong></td>
</tr>
<tr>
<td><strong>Other Uses</strong></td>
</tr>
<tr>
<td>Retail/Commercial</td>
</tr>
<tr>
<td>Restaurant</td>
</tr>
<tr>
<td>Office</td>
</tr>
<tr>
<td>Marina</td>
</tr>
</tbody>
</table>

Source: Rockett’s Landing Traffic Impact Analysis, August 3, 2004
Wilton on the James

Located on the site of the Wilton Farm, Wilton on the James is proposed as a traditional neighborhood development situated on 1,184 acres and located on the James River near I-895. The development will include 3,209 residential units, 150,000 square feet of retail, and 145,000 square feet of office space. In addition, there will be an on-site assisted living facility, a marina, an elementary school, and parks space.

The residential component of Wilton will provide a mix of single-family detached homes, town homes, condominiums, and apartments. The lowest density of development will be 2-3 units/acre and the highest will be 12-16 units/acre.

The development is expected to reach build out in 2018, and at that time produce 35,750 vehicles trips per day. In order to accommodate the traffic volumes produced by Wilton, the development will include the construction of Wilton Parkway, which will connect the development directly to Route 5. Traffic studies show that New Market Road (Route 5) on average operates at a level of service (LOS) of C from the intersection with Osborne Turnpike to Strath Road. The LOS decreases during the AM Peak and PM Peak. Recommendations for roadway improvements associated with the development include installing more signalized intersections where there currently isn’t and widening New Market Road to four lanes with dedicated right and left turn lanes at specific intersections (HHHunt, 2004).

In a similar fashion to Rockett’s Landing, Wilton will dramatically impact the existing transportation network, but to a greater extent because of the size difference. Even with the proposed widening of Route 5 and addition of the Wilton Parkway, the area will struggle to maintain its current character without the use of transit to reduce vehicle trips. Wilton provides appropriate densities and development patterns that support the use of transit to connect the residents to jobs and the surrounding area.
Town of Tree Hill

The Town of Tree Hill is the most recent large-scale development to be approved by the County’s Board of Supervisors in Eastern Henrico. The development will lie between Rockett’s Landing and Wilton along Route 5 and the James River. The property contains 531 acres and will include 2,770 residential units along with 1.16 million square feet of office and commercial space. The mixed-use community will also include space for an elementary school, a library, and recreational spaces. Expected to be complete in 2016, Tree Hill will have a projected 5,512 residents and produce 51,165 trips on a daily basis. This will give Tree Hill a residential density of 10 persons/acre. A breakdown of the household structure projected for the Town of Tree Hill is in Table 1-10.

<table>
<thead>
<tr>
<th>Table 10. Town of Tree Hill Household Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty Nesters/Retirees</td>
</tr>
<tr>
<td>Total Units</td>
</tr>
</tbody>
</table>

The traffic impacts that will be produced by a development the size of Tree Hill will require improvements to the existing transportation network. It was found that Route 5 does not have the capacity to support existing traffic volumes. In addition, many of the intersections along Route 5 are unsignalized and have at least one movement that
operates at LOS E or F. The recommendations call for the widening of the remaining Route 5 segments that won’t be widened by either the Rockett’s Landing development or Wilton development (Gray Land and Development, 2007).

Similar to the above developments, the high level of mixed-uses, street network, and residential density make the Town of Tree Hill an ideal location for transit.

**Shops at White Oak Village**

The Shops at White Oak Village will be a major shopping destination in Henrico’s East End with completion slated for the fall of 2008. Not only will the development be a welcome attraction to a growing area, but it’s also designed using Leadership in Energy and Environmental Design (LEED). The development is situated on 136 acres and will contain 900,000 SF of retail space. White Oak Village will be located near the intersection of I-64 and Labumum Avenue (The Shops at White Oak Village, 2008). Forecasted to produce approximately 35,915 trips per day, this will undoubtedly become a major attraction (Department of Public Works, 2006). The combination of these newly introduced trips on top of the classification of Labumum Avenue as a congested roadway in this area by the RRPDC’s 2026 Long Range Transportation Plan means traffic will only worsen in this area of the County.

**White Oak Technology Park**

White Oak Technology Park is a master planned manufacturing center located near the intersections of US 60, Technology Boulevard, I-64, and I-295. The park contains 2,278 acres and is zoned M-2 (General Industrial District). The park is setup to be an ideal location for high-tech industry. Currently White Oak is home to Qimonda and Hewlett Packard (Henrico County EDA, 2008). Qimonda currently employees 2,390 people (Greater Richmond Partnership, 2008).
Demographic Indicators of Transit Dependence

Demographic studies can be used to help determine concentrations of people who demonstrate characteristics that indicate a higher dependence on transit. These indicators are – living below the poverty line, having a mobility limitation, being age 65 or older, and living in a household with no or one vehicle available. Data from the 2000 US Census short form 3 was collected. Because the census doesn’t organize data by TAZ, census tracts were used. This area is slightly larger than the study area determined using TAZs, but should give a good indication of where concentrations of these populations lie.

The greatest concentrations of individuals demonstrating these demographics seem to fall in the Western region of the study area along Williamsburg Road and west of Laburnum Avenue. There are also higher concentrations of people age 65 and older, people below the poverty line, and individuals with mobility challenges south of Route 5. It should be noted that the percentages of these individuals is low when compared to the population for each tract, but special attention to be made to route transit within these areas to ensure that those who depend on transit the most as a sole form of transportation have access.

<table>
<thead>
<tr>
<th>Table 11. Transit Dependent Demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Study Area</strong></td>
</tr>
<tr>
<td>Population</td>
</tr>
<tr>
<td>Population below Poverty line</td>
</tr>
<tr>
<td>Population 65 or older</td>
</tr>
<tr>
<td>Population with Mobility Disability</td>
</tr>
<tr>
<td>Housing Units</td>
</tr>
<tr>
<td>Households</td>
</tr>
<tr>
<td>Household with No Vehicle</td>
</tr>
<tr>
<td>Households with 1 Vehicle</td>
</tr>
</tbody>
</table>

Source: U.S. Census 2000 SF3
Map 10: Households with No Vehicle Available

Legend:
- Study Area Boundary
- Households with No Vehicle
  - Less than 4%
  - 4% - 6%
  - 6% - 8%
  - 8% - 10%
  - Richmond
  - Northern
  - James River

Source: US Census 2000, SFD.
Checked by S. Swepz Noble
March 2001

Map 11: Households with 1 Vehicle Available

Legend:
- Study Area Boundary
- Households with 1 Vehicle
  - Less than 2%
  - 2% - 3%
  - 3% - 4%
  - 4% - 5%
  - Richmond
  - Northern
  - James River

Source: US Census 2000, SFD.
Checked by S. Swepz Noble
March 2001
Other Pertinent Studies

Richmond Regional Mass Transit Study

The Richmond Regional Planning District Commission has tasked a consultant to complete a study of regional transit options for Richmond and the surrounding jurisdictions that are a part of the planning district. This study is currently in the draft phase and is being taken to public comment in order to gauge the opinions of the citizens. The final document will be presented to the Metropolitan Planning Organization on May 9th for approval. This plan presents a variety of transit options; local bus, commuter bus, bus rapid transit, light rail, and commuter rail. It identified a number of major corridors to implement transit service along based on current and projected vehicle trips. Since many of these corridors still run within areas where land use is still considered too low for optimal transit service, levels and intensities of service have been phased in order to provide the appropriate level of service to match land use changes and projected growth. The study also makes policy and administrative recommendations in order to ensure the success of the recommendations for transit service. These recommendations...
call for the creation of a regional transit authority. This body would have more decisions making authority about where service should go within the region. The study also calls for the establishment of a secure funding source. This will allow the regional transit authority to have more ability in planning future service because there is a dedicated funding source available they aren’t impacted as heavily as other sources. The study also encourages a push for more transit supportive land use and services. This would require higher densities, mixed-use development, and grid street networks with shorter building setbacks. Transit should also be made more attractive through pedestrian facility improvements and transit supportive programs like employer transit passes.

Within the study area, the transit study recommends limited stop bus service along Williamsburg Road from downtown to RIC. This service would operate frequently during the week and with the limited stops, should offer rapid service from downtown to the airport and vice versa. The VDOT model forecasts a total of 276,432 total vehicle trips along the corridor by 2031. As land use and other factors become more supportive, a switch to light rail service should be made to the airport. Local service expansions were recommended for the Route 5 corridor going from the City of Richmond out to I-895.

The recommendations made by the Richmond Regional Mass Transit Study offers a good insight into the regional transit needs for the Richmond area. While this study doesn’t offer specific street level recommendations for the study area of this plan, it does give a good foundation to create more detailed transit recommendations (Tobias, 2008).

Richmond Rail Transit Feasibility Study

In 2003 the Richmond Area Metropolitan Planning Organization (MPO) received the results from a contracted study completed by a consultant to identify potential rail transit corridors for the Richmond region. The plan used rail projects that were originally identified as part of the MPO’s 2023 Long Range Transportation Plan. Two of the possible corridors identified that would impact the study area for this plan were the Providence Forge commuter rail corridor and the Richmond International Airport light rail corridor. Based on ridership and cost projections the Providence Forge rail concept was screened out from further study. This left the Richmond International Airport light rail concept. The concept called for the operation of the light rail service within the existing roadway. A
A VISION FOR TRANSIT IN EASTERN HENRICO

number of alignments were identified as can be seen in Map 13 below. Table 12 shows the characteristics of the proposed service. Ridership figures were generated for the Broad Street and Williamsburg Road alignment (Parson Brinckerhoff, 2003).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (miles)</td>
<td>6.4 – 7.2</td>
</tr>
<tr>
<td>Capital Cost Estimate ($ Millions)</td>
<td>$374 - $420</td>
</tr>
<tr>
<td>Weekday Boarding</td>
<td>19,100</td>
</tr>
</tbody>
</table>

Source: Richmond Rail Transit Feasibility Study, 2003

Map 13: Richmond International Airport Light Rail Alignment Options
Projected Growth

According to the Socioeconomic Data Report produced by the Richmond Regional Planning District Commission (RRPDC), the study area is forecasted to grow 134 percent from 2000 to 2031. This is significantly more than the 56 percent projected population growth for the entire County during the same period. Table 1 in the appendix breaks the growth down by TAZ. The zones expecting to see the largest growth between 2000 and 2031 are 1630, 1632, 1634, 1638, 1646, 1647, and 1649. These seven zones alone will make up more than half the population for the study area in 2031. Other areas are projected to see little to no growth and some are even forecasted to see losses in population (Socioeconomic Data Report, 2008). It should be noted that the population projections for this report assume an average increase of 1.39 percent in population growth over the 31 years. This differs from the projections created for the Henrico County 2026 Comprehensive Plan, which assumes that growth will begin to slow as the County approached the plan’s horizon year of 2026 (Henrico County Vision 2026 Demand Analysis, 2008). The projections used for the remainder of the study area are from the RRPDC’s report. The data is easier to work with because it is broken into TAZ as opposed to a countywide project like the Henrico 2026 Plan uses and it attempts to use many sources when creating its projection. As population increases in this area of the county, so will the success of transit. As more people begin to live within the study area, population densities will begin to approach levels acceptable for transit to succeed.

Housing unit projections were also forecasted to increase at a similar rate to the population growth over the 31-year window according to the RRPDC. The same zones forecasted to see the largest growth in population will see the largest growth in housing units. These seven TAZs alone will see an addition of 16,958 housing units. This growth will also increase housing densities, making public transit a more viable option as this growth takes place.

<table>
<thead>
<tr>
<th>TAZ #</th>
<th>2000</th>
<th>2031</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1630</td>
<td>3519</td>
<td>8155</td>
<td>132%</td>
</tr>
<tr>
<td>1632</td>
<td>914</td>
<td>4209</td>
<td>361%</td>
</tr>
<tr>
<td>1634</td>
<td>500</td>
<td>1133</td>
<td>127%</td>
</tr>
<tr>
<td>1638</td>
<td>1183</td>
<td>3051</td>
<td>158%</td>
</tr>
<tr>
<td>1646</td>
<td>118</td>
<td>9166</td>
<td>7625%</td>
</tr>
<tr>
<td>1647</td>
<td>1056</td>
<td>2470</td>
<td>134%</td>
</tr>
<tr>
<td>1649</td>
<td>1157</td>
<td>9452</td>
<td>717%</td>
</tr>
</tbody>
</table>

Source: Richmond Regional Planning District Commission Socioeconomic Data Report 2000 & 2031
Employment growth for the study area should keep pace with the population and housing growth. It is forecasted that the study area will have 48,524 employees, a 159 percent increase from 2000. The study area will include 16 percent of Henrico’s employees. This is an 8 percent increase from the share contained in 2000. Zones forecasted to experience the largest growth in employment are shown the maps below and the tables in the Appendix. Not only do these areas overlap with the ones for population and housing units, but other TAZs show a marked increase in employment as well. Many of these other zones fall around the airport as well as existing industrial and employment centers already in existence. These tend to be the areas with the largest numbers of employees (Socioeconomic Data Report, 2008).

Using the projections it becomes more apparent where transit service would be most effective. From a population standpoint, the Williamsburg Road and Route 5 corridors will have the highest population densities. While in many instances these densities are not on the magnitude typically seen with high level of service transit, they would support transit and with changes in land use policy or development patterns could be more supportive. The Route 5 corridor will see the largest increases in population with the proposed developments. It is important to mention, that these developments are proposing a more mixed-use, traditional neighborhood style of development that is more supportive of transit than traditional suburban development.

Employment densities are focused along the Laburnum Avenue corridor, around RIC, and within the White Oak Technology Park. These projections make sense because of the concentration of industrial uses around Laburnum Avenue and the airport. This concentration of similar land uses and employment support the use of transit as a form of travel to and from work. It would be important to determine shift schedules at these places of employment because they don’t necessarily follow a typical 9 to 5 workday and would warrant special scheduling.
Map 14: Population Density Year 2000

Legend
- Study Area Boundary
- Henrico
- Richmond
- Richmond International Airport

Persons/Acre 2000
- Less than 1 Person/Acre
- 1 - 2.5 Persons/Acre
- 2.5 - 5.5 Persons/Acre
- James River

Source: Henrico GIS and HRPDC GIS
Created by: St. Carey Potts
April 2000
Map 15: Population Density Year 2031
Map 16: Employment Density Year 2000

Legend
- Study Area Boundary
- Henrico
- Richmond
- Richmond International Airport
- Employees/Acre 2000
  - Less than 1 Employee/Acre
  - 1.0 - 5.0 Employees/Acre
  - 5.0 - 9.4 Employees/Acre
  - James river

Source: Henrico GIS and MAPS GIS
Created by: S. Carey Pitts
April 2008
Map 17: Employment Density Year 2031
Map 18: Housing Units per Acre 2000
Map 19: Housing Units per Acre 2031

Legend
- Study Area Boundary
- Henrico
- Richmond
- Richmond International Airport

Housing Units/Acre 2031
- Less than 0.5 HU/Acre
- 0.5 - 1.0 HU/Acre
- 1.0 - 3.0 HU/Acre
- James River

Source: Henrico GIS and RRPDC GIS
Created by: S. Corey Fields
April 2008
Transit Modes

This section will present a number of potential transit options for the study area. Using these descriptions an analysis can be performed that will compare the needs of each mode of transit with the existing and future conditions for the study area. This will create a foundation on which the plan portion of the document will be based.

Light Rail

Light Rail provides fixed-rail train service along an electrified track. The vehicles are smaller in scale when compared to heavy rail. The trains can operate in a combination of configurations, ranging from a separate right of way to sharing in the travel lane. Light rail provides stations with amenities for comfort and off-vehicle fare collection. These systems cost less than heavy rail systems, but the costs can vary widely depending on the configuration. Light rail typically can carry 15,000 – 60,000 riders per day. It is recommended that residential densities be in the area of 9 units per acre or higher (Alliance for Community Choice in Transportation, 2005). Light rail can be successful in large and medium cities. It is very flexible, typically being used to transport commuters from the suburbs into the city center, but also functioning in other areas. It should also be noted that light rail transit has been shown to promote development around its stations. The intensive investment needed to construct a line as well as the fixed nature of light rail are cited as reasons developers choose property near light rail (Institute of Transportation Engineers, 1989).

Bus Rapid Transit

Bus Rapid Transit (BRT) offers many of the key benefits of rail transit, but at a lower cost. This is accomplished by typically using existing roadways, although in certain instances separate bus ways may need to be constructed. Unlike traditional local bus service, bus rapid transit uses fewer stops that are spaced further apart, but with amenities and fare collection similar to light rail. Typically operating with a travel priority over automobile traffic, BRT offers a high quality alternative to traditionally slower local bus service. Capacity of this level of service ranges from 5,000 – 15,000 passengers per day. BRT service is usually given of special treatments over regular bus service, including special vehicles, marketing, and on-street fare collection. (Alliance for Community Choice in Transportation, 2005). While studies are still determining the true impact on development,
initially signs are positive; indicating that BRT has a similar influence on development to light rail. There is some question to this impact because of the permanence perceived in having to install rail lines for light rail (Levinson, 2003).

Local Bus

Local bus service is a fixed route bus service that operates on a regular schedule and specific route. Local bus service can use a variety of vehicle types and sizes, but typical buses are 35-40 feet in length (Institute of Transportation Engineers, 1989). Local bus service can carry 20-150 passengers per bus depending on the size of the vehicle used (Vuchic, 2007). One benefit of local bus service over services like light rail is the ability of the service to be redesigned easily as passenger trends change. This benefit does have the downside of not supporting development because it isn’t seen as a permanent fixture to base development around. The benefit of having a larger number of stops improves the access to the local bus service. This convenience is also a downside, because it contributes to a slower operating speed.

Express Bus

This is a variation on fixed route bus service that operates with fewer stops. This allows the bus to consolidate where it picks up and drops passengers off, improving the speed of the service. When used in concert with treatments that allow priority to the bus, it can become a viable alternative to driving a car (Institute of Transportation Engineers, 1989). Express bus service is typically used as a commuter service, carrying passengers to and from suburban origins to employment centers. Important factors for the success of express bus service are, reliability, speed, and comfort. Typically, speed is gained by utilizing special treatments like bus only lanes, priority signalization, or high-occupancy vehicle (HOV) lanes.

Circulators

Circulators are used to augment or replace existing traditional fixed route service. They are chosen because they perform more effectively in low-density areas as opposed to traditional bus service. Circulators provide direct service between neighborhoods and local destinations like shopping centers. They will also connect to other transit routes offering connections to the large system. Circulators typically come in three forms; fixed
route, route deviation, and demand responsive. Fixed route circulators operate just like any other fixed route service. There is a specific route with stops placed along the route. The route deviation service operates along a route like the fixed route circulator, but can deviate from the route to pick up passengers requesting pickup and then continuing along the route. These routes require more flexibility in the schedule as well as a dispatcher to take calls for service. The final circulator type provides door-to-door service within a pre-determined service area. Demand responsive circulators are also known as dial-a-ride service. Customers have to call in and schedule service. These services are meant to provide service in areas that are lower in density. They do require a certain level of transit dependent population as well as a suitable mix of uses along the route to remain viable as a neighborhood circulator. Smaller vehicles are used for these services that are more suitable to the lower ridership and character of the areas they operate within.

Shuttles

Shuttles are a very specialized service that provides connections between major destinations. These services provide a vital link between main line services and residence or employment centers. Often catered to choice riders, or those who aren’t considered transit dependent, they must offer directness and quickness. When providing connections to the larger transit network, transit stations are often required to provide a central location to connect passengers from the shuttle to the main line fixed route service. In some instances, shuttle service is provided through a public/private partnership with employers. Through these sponsorships, the employer can guarantee another alternative to their employees for traveling to and from work (Urbitran, 1999).
ANALYSIS

After comparing the land use, transportation, and projections data some key concepts emerge as important factors in the success of failure of this plan. They are divided into Assets, Liabilities, and Opportunities. It is important to use the existing assets to support the plan while attempting to lessen or mitigate the impacts of the liabilities. Finally, the Opportunities are factors that can offer an advantage if used wisely.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
<th>Opportunities</th>
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<tbody>
<tr>
<td>• Growing population                                                   • Low density development                                                   • Undeveloped land</td>
<td></td>
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<tr>
<td>• Growing employment                                                    • Design of existing development                                            • Rising fuel costs</td>
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<tr>
<td>• Existing congested corridors                                          • Lack of mix of land uses                                                  • Growing “Green” movement</td>
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<tr>
<td>• Proximity to downtown Richmond                                       • Ample free parking                                                        • Growth of New Urbanist and Traditional Neighborhood Development</td>
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<td></td>
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<tr>
<td>• Key Developments/Locations                                           • Lack of ample/consistent funding for transit</td>
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<tr>
<td>o Rockett’s Landing                                                    o Lack of public/political support for transit</td>
<td></td>
<td></td>
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<tr>
<td>o Town of Tree Hill                                                    o Ample free parking</td>
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<tr>
<td>o Wilton on the James                                                  o Lack of ample/consistent funding for transit</td>
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<tr>
<td>o Shops at White Oak Village                                           o Design of existing development</td>
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<tr>
<td>o White Oak Technology Park                                            o Low density development</td>
<td></td>
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<tr>
<td>o Village of Varina                                                    o Lack of mix of land uses</td>
<td></td>
<td></td>
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<tr>
<td>o Richmond International Airport                                        o Ample free parking</td>
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From the analysis a number of key corridors emerge as being candidates for transit. They are the Williamsburg Road, Labumum Avenue, and Route 5 corridors. Each corridor has special needs that need to be addressed by different forms of transit. The remainder of the study area is a mixture of low-density development, industrial uses, and strategy areas. These areas will require unique transit applications that will support the existing land uses. Map 20 below shows these corridors and special application areas as well key
locations for transfer points. The locations are needed in order to ensure linkages between the identified corridors.

Map 20. Key Corridors & Connections
**PLAN FOR TRANSIT**

The following is a vision for public transit in Eastern Henrico County. While further research and data is needed before any service can be placed on the street, this plan will outline key areas to focus transit service and the types of transit that would work best based on current and future conditions. The plan contains a set of broad based goals and objectives to help achieve this vision.

**Goals and Objectives**

**GOAL 1:** Improve the mobility options available to residents of Eastern Henrico County

**OBJECTIVE 1-1:** Create a Light Rail Transit line along Williamsburg Road from Downtown Richmond to Richmond International Airport

Map 21: Williamsburg Light Rail Line
**Why:** The Williamsburg Road corridor provides a direct link from downtown Richmond to Richmond International Airport. The airport's continued growth would ensure its importance within the regional intermodal transportation network. Creating a LRT service will offer a high level of dependable service between a potential downtown intermodal center at Main Street Station and RIC. The creation of a LRT line will also generate the impetus for revitalization of the Williamsburg Road commercial corridor in conjunction with the existing enterprise zone.

**Who:** GRTC Transit System and Henrico County

**What:** Currently, Williamsburg Road is developed and zoned at densities too low to support development. Land Use classifications and zoning need to be changed along the corridor to a level supportive of light rail, at least 9 units/acre. A higher mix of land uses will be necessary as well. There are currently commercial uses, but residential should be included as well. Development should be designed to be supportive of transit. Buildings should orient to the street with short setbacks. Sidewalks and pedestrian features should dominate the areas immediately along Williamsburg Road with parking moved to the rear of developments. The light rail line should run from the location determined downtown as the transfer center. Main Street Station would serve as an ideal location because it would allow for connections to passenger rail service and other transit lines. The service will then travel east along Route 60 passing through Shockoe Bottom and out to the RIC. Service should operate 7 days a week throughout the day with high frequency. This will ensure that it is a viable alternative to driving.

**When:** Changes in land use should be looked at immediately. Enterprise zone incentives should be revised to support the goal immediately as well. Additional engineering and planning will be required to determine the best design and routing. Construction of light rail should begin by 2020. In the meantime the Limited Stop Fixed Route service that the Regional Mass Transit Study proposes would allow potential transit stations to be created and some service
implemented along Williamsburg Road while development of the light rail line takes place.

**OBJECTIVE 1-2**: Extend the existing Route 91 - Laburnum Connector to New Market Road

**Map 22: Laburnum Connector**

**Why**: Laburnum Avenue is a major industrial and commercial north/south corridor in Henrico County. Service along Laburnum would allow for connections between the east/west transit service along Route 5 and the Williamsburg Road LRT. This will also provide links to the many employment centers along Laburnum and the new Shops at White Oak Village. Laburnum Avenue has been classified as a congested corridor around Williamsburg Road. An alternative to adding lane miles and subsequent vehicles to an already congested corridor is needed.

**Who**: GRTC Transit System
What: The Route 91 – Laburnum Connector currently operates down to the intersection of Williamsburg Road. This service has shown good use thus far connecting residents in Eastern Henrico with Willow Lawn. As a higher speed alternative is created along Williamsburg Road and Broad Street to destinations west of downtown, this route will lose its appeal as a connector. It will still remain viable to offer north/south connections between east/west routes as well as the new mall and existing employment base along Laburnum Avenue. The new Route 91 will operate 7 days a week with greater service frequency at the peak weekday hours and longer headways the rest of the time and on weekends. The longer headways should not exceed an hour between buses because any long will make the automobile more attractive. Stops should be strategically spaced at key destinations and transfer points along the route. The end of the route at the intersections of Laburnum Avenue and New Market Road there should be a small park and ride lot that will allow residents in the nearby vicinity to park and then take transit to the new mall.

When: The route should continue to operate in its existing configuration until the completion of the Town of Tree Hill. At this point there will be a greater concentration of individuals looking to travel to commercial areas along Laburnum. The expected completion of Tree Hill is 2016.
**OBJECTIVE 1-3:** Create an Express Bus Fixed Route along the Route 5 corridor.

**Map 23: Route 5 Express**

**Why:** Route 5 is currently operating at low levels of service prior to the construction of new developments. The introduction of the major planned developments will introduce many more trips to Route 5. There are major developments that are going to offer transit supportive design separated by low-density development. The route 5 corridor is classified as a scenic byway, meaning development will probably never reach high levels of development supportive of more intense transit service.

**Who:** GRTC Transit System and Henrico County

**What:** Express Bus Service should operate from the Village of Varina downtown to the downtown transfer center. The route should being at the Village of Varina at the intersections of Route 5 and Strath Road. The strategy area of focusing development and commercial uses here will create a node where transit could provide service to the area using a park and ride. From this point the route will
continue along Route 5 making a connection to the Labumum Connector at a transfer station and park and ride. The remainder of the route will serve the Town of Tree Hill, Rockett’s Landing, and then the downtown transfer station. Since the Route 5 corridor is not intended to become one uniform mixed-use commercial corridor it doesn’t warrant the level of service that bus rapid transit would operate at. In order to help retain the existing corridor character of scenic Route 5, transit will need to be a viable alternative to expanding the road to six lanes and thousands of automobiles. It would be beneficial to consider creating a HOV or “bus only” treatment during peak travel periods to ensure the bus competes with the automobile. The buses used should be very comfortable and offer high frequency service during the highest times of travel, typically weekday peak periods. Service should continue throughout the day and on weekends but at a lower frequency, similar to that of the new Route 91. Parking facilities should be constructed at the stops located at the Village of Varina, Tree Hill, and the intersection of Labumum and New Market. This will allow individuals not within walking distance of the transit stop to park their car and they take the bus. This will be especially important in the peak commute hours since downtown Richmond is still considered a key destination for employment. Efforts can be make to create partnerships when creating the Park and Ride. Examples of this are currently in place in the GRTC Transit System.

**When:** Specifics of the route should begin in the next 5 years as the construction of these new developments begin to take place. Efforts should begin immediately to create partnerships with the developments to ensure proper stop placement and discussion of park and ride facilities. The route should be as these developments come online in the next 5 to 10 years.
**OBJECTIVE 1-4:** Create a shuttle service connecting Wilton on the James with the Route 5 Express.

Map 24: Wilton Shuttle

*Why:* Wilton on the James will be developed to a level that will support transit with its mixed-use traditional neighborhood design. Unfortunately its distance from Route 5 keeps it from being easily accessed the Route 5 Express.

*Who:* GRTC Transit System

*What:* A high frequency shuttle service should operate through Wilton and connect to the Route 5 Express at the Laburnum/Route 5 Transit Station. This will offer the residents of Wilton competitive access to the Route 5 Express. These shuttles should not charge a fare in order to ensure their success because everyone riding will have to transfer in order to reach their destination. The vehicles should start will a smaller size and as ridership grows increase to a larger vehicle.
**When:** Projected build out for Wilton is 2018. Planning for the shuttle should begin now to create a partnership with the developer to ensure proper amenities for transit. The route should begin service at the same time the first residents are moving in.

**Objective 1-5:** Create a Circulator that operates around Sandston and Highland Springs

**Map 25: Sandston Circulator**

**Why:** The Village of Sandston is an older area of Henrico where retention of the existing character is desired. With commercial and other development pressures surrounding Sandston it is important to not introduce transit service that would promote intense development. A circulator will offer connections between Sandston and other key local destinations without introducing a transit service that is out of character with the area.

**Who:** GRTC Transit System
What: A circulator will provide necessary access to neighborhood shopping destinations as well as links to the greater transit network. By using a circulator to serve the Sandston and Highland Springs area, smaller vehicles can be used that will not disrupt the existing character of these “downtown main street-like” locations. The circulator will operate on a regular schedule throughout the day allowing for commuting connections to be completed as well as completion of daily activities throughout the day. Weekend service will also be an option, but may operate on a reduced frequency dependent on demand. The exact routing will require further analysis, especially of Highland Spring because it falls outside the study area, in order to determine the locations of key destinations using resident input.

When: This service can be implemented in the next few years. The existing populations in and around Sandston and Highland Springs could support a circulator and the routing can be altered and schedule adjusted as the area grows and changes.
OBJECTIVE 1-6: Create a Laburnum Industrial Circulator

Map 26: Laburnum Industrial Circulator

**Why:** Laburnum Avenue south of Williamsburg Road has a high concentration of industrial uses and jobs. These uses line both sides of Laburnum as well as areas around the airport. These low-density areas don’t warrant a high level of service or large transit vehicle, but a circulator can provide links between major trunk lines and jobs.

**Who:** GRTC Transit System in partnership with major employers.

**What:** The area along Laburnum Avenue from New Market Road to Williamsburg Road contains a number of industrial businesses. This area also extends around the airport as well. A partnership should be coordinated between GRTC and a number of the large employers within the area to produce a service that will allow employees using the Route 91 and other transit services in the area to arrive at work using the circulator. This service will require special scheduling that is coordinated with the shift patterns of the current employers. The nature of shift
and industrial work won’t require service throughout the day because many individuals won’t have time to run errands during the workday. The circulator vehicles can be sized according to the demand for this level of service, starting with a smaller vehicle and increasing in size as the service grows. Efforts should be made to work with employers to offer incentives to their employees for using transit as well as creating acceptable pedestrian amenities to allow individuals to walk from the transit stop to the facility.

**When:** This service can begin work creating partnerships and determining the exact route structure immediately. The current route 56, which serves many of these facilities, has very low ridership and should be revised to meet the needs of the employers and employees working in these areas. This will include extensive work meeting with different companies to understand employee travel needs and shift schedules.

**Objective 1-7:** Create a White Oak Technology Park Shuttle

**Map 27: White Oak Technology Park Shuttle**
Why: White Oak Technology Park is supposed to be a large-scale industrial park. Current occupant Qiumonda is a major employer within the region. As more companies locate within the technology park shuttle service will be necessary to carry employees from the light rail line to work.

Who: GRTC Transit System in partnership with employers in the park.

What: As home to one of the regions largest employers, the technology park sees a high number of people traveling to one destination. This would support the use of a shuttle that travels from a transfer point on the light rail service to each company within the park. An understanding of shift schedules is again important to ensure the shuttle schedule meets the needs of employees. Efforts should also be sought to make the service attractive by offering incentives from the employer to promote the use of transit. The shuttle, similar to the Laburnum Industrial Circulator won’t require consistent all day service, but rather service at key points in the day to move employees to and from the facility at shift changes. Costs for the service can be shared between GRTC, Henrico County, and companies within White Oak. The investment on the part of individual companies will ensure their support and promotion of the service to employees.

When: Currently, the technology park has few tenants. These tenants are major employers and could support shuttle service, but with limited service in eastern Henrico, there are no services to connect the shuttle to. As service expansion occurs along Williamsburg Road, the shuttle can be considered as an option.

GOAL 2: Land use that is more supportive of public transit

OBJECTIVE 2-1: Revise the current land use classifications and policies to promote transit use

Why: Current land use along many of the proposed transit corridors are not of levels that would promote transit use. Projected residential, employment, and unit densities will be of a level that can support limited transit, but not high-level service.
Who: Henrico County in conjunction with the Virginia Department of Transportation and GRTC Transit System.

What: Corridors identified as trunk lines should be revisited in the land use plan and adjusted accordingly to increase densities and promote a greater land use mix. Williamsburg Road specifically should have a focus that will create a high level of transit use. This use will in turn help with revitalization efforts along the corridor and create a dense commercial mixed use district that promotes transit and serves the area without having to develop further Greenfield sites in the County. Similar treatments should be used along Laburnum Avenue as well, especially within the vicinity of Williamsburg Road. Efforts should be made to continue a trend of planned mixed-use neighborhood development along Route 5. This corridor is considered scenic and with its proximity to natural resources like the James River should not be transformed into a solid line of commercial development. The development of dense traditional neighborhood development creates nodes along the corridor that make transit a viable alternative.

When: This should be done immediately as a part of the Vision 2026 Henrico County Comprehensive Plan, which is still in draft form.

OBJECTIVE 2-2: Create a guide that can be used by developers to understand the importance of transit and design guidelines that are more supportive and oriented to transit

Why: Many transit agencies have created these guidebooks in partnership with the jurisdictions they serve. They allow developers to have an idea of what can be done to incorporate transit into their development.

Who: GRTC Transit System and Henrico County Planning and Public Works departments.

What: A design manual should be created that informs developers of design elements and site design layouts that are more supportive and oriented to transit. This guide will not only include recommendations for new developments but also demonstrate options for retrofitting existing developments. The books should be bound and published and kept on hand at the county planning office to be
handed out to interested developers. Elements that should be included in the guide are:

- Orienting development to the street
- Pedestrian-friendly elements
- Reducing parking features on the front of developments
- Site configurations that are accommodating to transit vehicles
- Transit shelter guidelines and location factors

When: Organization of information of the manual should begin immediately to ensure that many of the new developments being proposed in this area of Henrico have access to the material. The goal should be to have the manual completed within 1 year.

OBJECTIVE 2-3: Include GRTC in the development review process to make recommendations for changes that can be made to proposed developments to be more supportive of transit.

Why: While it would be ideal to have GRTC be required to approve any new developments to ensure their “transit friendliness”, at the very least it is important to have GRTC voice their concerns of approval of new developments being proposed. This recommendation can be weighed along with other planning recommendations when these developments come up for vote to approve. This would be another way GRTC can help ensure that future development is oriented to transit making it more likely that service will succeed.

Who: GRTC Transit System and Henrico County Planning Department, Planning Commission, Board of Zoning Appeals, and Board of Supervisors.

What: This would be a relatively simple process where the County would consult with GRTC staff in the evaluation of proposed development plans. GRTC would then write a set of recommendations on the proposal voicing satisfaction or any changes it felt was needed to improve the development from a transit standpoint. These recommendations would be shared with the committees that approve or deny development requests for the County.

When: The formulation of the process by which this would occur should begin immediately. This will undoubtedly require a significant amount of discussion on
the part of GRTC and the County. The goal should be to have these measures in place within 5 years.

**GOAL 3:** Increase existing and future ridership

**OBJECTIVE 3-1:** Seek citizen input as part of the planning efforts for these new services.

**Why:** Planning efforts should not just include analysis of data. This can create a false impression of the behaviors and needs of those being served by any new service. All of these above proposed services should have extensive public input to ensure an understanding of the needs and desires of those the service will serve. This will allow for an understanding of why people choose to drive and what it would take to get them to drop their car for transit.

**Who:** GRTC Transit System

**What:** Extensive public meeting should be conducted that will explain the goals of transit and gather information on the travel behaviors of those being surveyed. Explanation of any constraints and issues should be explained so that the public understands all aspects. As data is collected and analyzed, it should be presented along with any proposals for service. This will allow for collection of public comment on the proposal and changes can be made accordingly.

**When:** This should be one of the first steps to be completed before the rest of this plan is undertaken. This information will be part of the basis for the formulation of future service.

**OBJECTIVE 3-2:** Create marketing campaigns that target specific markets for the different services offered

**Why:** As new services are created to serve the suburban population who don’t currently have transit service, it is vital that they be informed of these new services in order to ensure their success.

**Who:** GRTC Transit System
**What**: Marketing campaigns should be designed to target the specific groups that these new services will serve. The campaigns should explain what the service is and how it operates as well as the benefits of using the service. They should be creative in order to catch the attention of people. One potential marketing campaign could involve a “one free fare pass” when the service first begins to allow customers to try the service and realize its benefits.

**When**: These campaign efforts should begin as the services are being planned to ensure that they can be deployed as the service is coming online.

**OBJECTIVE 3-3**: Create partnerships with major employment centers in the region

**Why**: Major employment centers are locations of high concentrations of people, which are an important factor in transit use. It is necessary to gather their support for transit. This support can be monetary or it can be in the form of offering incentives to employees who use transit.

**Who**: GRTC Transit System

**What**: This is a task that should probably fall under the Ride Finders division of GRTC. They are tasked with promoting transit and other alternative forms of transportation in the region. It would be a natural fit to have them perform outreach and negotiations with major employers in the formulation of new services and the support of transit services.

**When**: This should be an immediate task.

**OBJECTIVE 3-4**: Create Richmond Regional Travel Demand Management agency

**Why**: Many regions have a body that is tasked with creating policy and plans to deal with travel demand in order to mitigate the effects of congestion on the region’s roadways.

**Who**: This could be a subgroup within the Richmond Regional Planning District Commission. It would include a representative from each jurisdiction served.
**What** This group would be tasked with creating policies to combat regional congestion and travel issues. This group would need to have authority to implement these regional policies as well, to ensure that they are followed and actually accomplish their mission. Tying their implementation in with the receipt of regional transportation dollars could do this. Examples of programs that a Travel Demand Management Group would create are:

- Regional parking standards and policies
- Identification of corridors for HOV treatments
- Installation of advance traveler information systems (ATIS)
- Promotion of transit
CONCLUSION

Eastern Henrico County is on the cusp of becoming the next major location of development. Numerous developments, like Rockett’s Landing, Tree Hill, and Wilton, have been approved for development. These are large-scale developments that will introduce many people and vehicles to the area. Other important attractors like Richmond International Airport, White Oak Technology Park, and the future Shops at White Oak Village will also contribute to existing and future traffic congestion if an alternative is not realized.

A Vision for Transit in Eastern Henrico offers this alternative. Focusing reliable transit along key corridors will give residents and visitors a viable alternative to driving their cars. Complimentary services like shuttles and circulators will connect the main transit network to other areas that don’t require as high a level of transit. Unfortunately, just placing the transit on the street won’t solve the problem. The County needs to revisit its land use plan to ensure that it is supportive of transit. This plan offers solutions on how this can be done. Using the plan, as a framework for implementing transit in Eastern Henrico will provide a transportation alternative that eases congestion, improves air quality, and promotes revitalization.

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<th>Table 14. Summary of Goals</th>
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<td><strong>GOAL 1</strong></td>
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<td><strong>GOAL 2</strong></td>
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<td><strong>GOAL 3</strong></td>
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Department of Public Works Henrico County, VA. 2006. Inter-Office Memo White Oak Village Development.


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