

### 3. Existing Conditions and Future Trends

The Existing Conditions and Future Trends chapter provides some of the basic background information used to prepare this Master Plan. This chapter identifies and explains those conditions and trends that form the foundation for this Master Plan. These conditions and trends most directly shape the desired community structure for the Places29 area because they form the starting point for future planning. The existing conditions and future trends are presented in the following order:

1. Demographics of Albemarle County and the Northern Development Areas
2. Existing Conditions and Community Structure, including land use patterns, planned development, open space and natural resources, and historic and archaeological resources
3. Transportation network and travel patterns
4. Economic Framework
5. Market Assessment

#### ***Demographics of the Northern Development Areas***

##### **Population**

There are approximately 24,000 persons residing in the NDA, which is about a quarter of all of the residents in the County. The breakdown of the NDA is provided in the table below:

**Population of the Northern Development Areas  
2007**

Development Area	Population
Neighborhood 1	6,692
Neighborhood 2	8,159
Community of Hollymead	6,558
Community of Piney Mountain	999
<b>Total: Northern Development Areas</b>	22,409
<b>Total Albemarle County (2006)</b>	90,806
<b>Northern Development Areas as a Percentage of Albemarle County</b>	24.6%

Source: Weldon Cooper Center for Public Service and Albemarle County Office of Geographic Data Services. Note: This preliminary estimate is derived from building activity reports over the last several years and has not been field verified.

The County has an average annual population growth rate of approximately 1.5% per year and the Northern Development Areas accommodates a portion of that growth. Over three-fourths of the County's population growth is a result of in-migration.

The Virginia Employment Commission projects that Albemarle County will have 107,760 people in 2020 and 120,456 in 2030. If the proportion of population of the NDA were to remain constant relative to total County population, the expected total residents in the NDA would be 26,509 and 29,632. The actual population will be dependent on many factors including growth elsewhere in the County

### ***Existing Conditions and Community Structure***

The Northern Development Areas are located north of the City of Charlottesville and encompass almost 14.5 square miles (9,233 acres). The four Development Areas are Neighborhoods 1 and 2 south of the South Fork of the Rivanna River and the Communities of Hollymead and Piney Mountain north of the river, as shown in Figure 1.1. Neighborhoods 1 and 2 are separated from Hollymead and Piney Mountain by an undeveloped area of land that is dominated by the floodplain of the South Fork of the Rivanna and adjacent land of mostly rural character. Neighborhoods 1 and 2 are characterized by intense development along both sides of US 29 and are among the most urban areas in Albemarle County. By contrast, significant undeveloped portions of land currently remain in Hollymead and Piney Mountain.

Community structure is formed by the relationships of existing residential areas, retail, and commercial uses, employment areas, civic facilities, open spaces, and the network of streets that provide access to places and uses. An analysis of these existing patterns and their spatial relationships is important because they greatly affect people's quality of life. For instance, the relationship of where people live and work will determine their transportation choices and how much time they have to spend traveling between their homes and places of work, as well as to other destinations.

The existing framework of land use patterns and community structure is the basis for the Future Land Use and Transportation Framework Plan. The existing framework provides the context and opportunities that are the foundation of future land uses. The existing framework also shows where new uses must respect existing uses and structures, and where the two can form a seamless whole.

The following sections give an overview of the conditions and community structure for the overall Places29 area and then for each of the four Northern Development Areas:

#### **Land Use Patterns in the Overall Places29 Area**

Two major elements establish the overall structure of the Places29 area, the South Fork of the Rivanna River and US 29 (Seminole Trail). The South Fork of the Rivanna divides the more urbanized<sup>1</sup> development areas, Neighborhood 1 and Neighborhood 2, from the Communities of Hollymead and Piney Mountain, which have a more suburban character.

US 29 acts as a strong spine connecting all four of the development areas. At present, US 29 links the development areas with its design generally reflecting the differences in character that exist between the southern and northern areas. Rather, the frontage conditions along US 29 affect the overall character of the adjacent development.

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<sup>1</sup> "More urbanized" in this context means that the majority of the land is developed, residential densities are higher than average as are intensities of non-residential uses.

South of the South Fork, US 29 is fronted by substantial and nearly continuous commercial development on both sides. Most commercial development along US 29 relies on access directly from US 29, as no significant system of parallel roads exists.

In contrast, north of the South Fork, US 29 does not represent the commercial core of the Hollymead community in the same way it does for the two southern development areas. While there is some commercial activity at the Airport Road/Proffit Road/US 29 intersection that is oriented toward US 29, most commercial activity now occurs at the Hollymead Towncenter, which does not have a direct orientation to US 29.

Other key elements of the overall community structure are the many residential neighborhoods that already exist in the Places29 area, as well as the underlying landscape of northern Albemarle with its undulating terrain, pockets of forest and fields, many small streams and drainages, and views of the adjacent Rural Areas.

The distribution of employment areas is another important component of community structure. The location of employment areas relative to residential areas has impacts on the transportation (commute) patterns in the area. If the community wants a closer spatial relationship between work places, residences, and retail and service areas, the distribution of employment areas is critical.

Piney Mountain and the northern half of Hollymead are important centers for employment in the Places29 area. Here higher concentrations of employment are related to the Charlottesville-Albemarle Airport, the UVA Research Park, and industrial/light industrial uses in Hollymead's industrial parks and Piney Mountain. South of the South Fork of the Rivanna, employment is clearly focused along the US 29 corridor.

Finally, the existing network of streets determines many of the relationships between elements of community structure, such as schools, public and natural open spaces, residential areas, retail areas, and employment centers.

## **Neighborhood 1**

Neighborhood 1 encompasses 1,174 acres and is bounded by the South Fork of the Rivanna River to the north, US 29 to the east, and Hydraulic Road to the south. The north-south segments of Hydraulic Road and Rio Road West form its western boundary, which separates it from Rural Area 1. A small portion of Neighborhood 1 is located south of Hydraulic Road just north of Neighborhood 7.

Neighborhood 1 is the most urbanized of the Northern Development Areas and includes residential neighborhoods such as Westfield, Berkeley, and Four Seasons, as well as substantial retail and commercial development along US 29. It is considered the most urbanized, because it has the most multi-family housing, the least amount of remaining vacant land, and a diversity of housing types (single family, townhome, and multifamily), a range of retail and service uses, and some fairly significant employment uses, such as Sperry Marine.

About two-thirds of the development in Neighborhood 1 is residential, with another third consisting of retail and commercial uses. Almost all of the existing retail is located along and oriented toward US 29. About one-third of the residential development is single-family homes and two-thirds is multi-family. With the exception of a few smaller sites and the site of the future Albemarle Square (at the intersection of Hydraulic Road and US 29), Neighborhood 1 is largely

built out. There are a few small pockets of employment and service uses along Rio Road, Hydraulic Road, and Greenbrier Drive.

Agnor-Hurt Elementary School on Berkmar Drive is the only school located within Neighborhood 1. Greer Elementary School, Jouett Middle School, and Albemarle High School are located immediately to the west of Neighborhood 1 in Rural Area 1. The play fields at Agnor-Hurt and the other schools are important public open space that is accessible to residents in the area. Humphris Park, located in the western portion of the development area, also is a public open space. This park has the character of a natural area and does not provide facilities for active recreation, such as ball fields, tot lots, or picnic areas. These public open spaces are complemented by the private open space of single-family homes and the semi-public greens around some of the multi-family housing. The Ivy Creek Natural Area is a large-scale natural area for hiking and passive recreational uses located in Rural Area 1 within one-half mile of Neighborhood 1.

The majority of land uses in Neighborhood 1 rely on three major roads for access: US 29, Hydraulic/Rio Road, and Berkmar Drive. The remaining roadway network in Neighborhood 1 consists largely of local loop roads or cul-de-sacs that, with few exceptions, provide few connections between adjacent developments. Without supplemental bicycle and pedestrian connections, this street pattern separates residences and other uses even if they are located in close proximity. The typical trip pattern in this type of environment requires travel out onto the nearest arterial (Hydraulic Road and Rio Road West or US 29) and back into another part of the neighborhood. The limited connectivity of the roadway system in Neighborhood 1 affects the opportunities for interaction among its residential areas, open spaces, and areas with retail, employment, and civic uses.

## **Neighborhood 2**

With 2,977 acres, Neighborhood 2 is the second largest of the Northern Development Areas. It stretches westward from US 29 to its eastern boundary along the South Fork of the Rivanna, which also forms its northern limit. It shares its southern boundary with the City of Charlottesville.

With the exception of a band of retail and commercial uses along US 29, Neighborhood 2 is predominantly residential. The area immediately east of the retail and commercial uses consists of a number of suburban neighborhoods that include multi-family and senior housing complexes (e.g., Branchlands Retirement Village). Residential neighborhoods predominantly made up of single-family homes and located north of Rio Road include Dunlora, Raintree, Westmoreland, Woodbrook, and Carrsbrook. Development east of the railroad tracks includes neighborhoods of both neighborhood and urban density levels (Stonehenge and Riverrun). The latter are interspersed with clusters of estates at lower densities. This area also contains a number of larger un- or underdeveloped tracts of land north of Dunlora and south of the CATEC vocational school. A large area immediately east of the railroad tracks is currently being developed into the Belvedere residential neighborhood.

The only retail area not oriented toward US 29 is located along Rio Road East in the area known as “Gasoline Alley.” This small area includes a series of gas stations with convenience stores and several commercial properties. A street named “Gasoline Alley” is also in this area.

Except for the recreational facilities located at Woodbrook Elementary School, Neighborhood 2 does not have any other public open space. A considerable amount of public open space, however, will be established and built as part of the Meadowcreek Parkway – Phase I. In

addition, residents of Neighborhood 2 have access to Pen Park, which is located in the City of Charlottesville along Rio Road just south of Neighborhood 2. Finally, the proposed development in Belvedere will include several small neighborhood parks.

The South Fork of the Rivanna, Meadowcreek, Town Branch, and several unnamed intermittent streams flow through several of these residential neighborhoods. These streams are a major asset for Neighborhood 2. The estate east of Belvedere, known as Dunlora Farm, includes large tracts of private, forested land.

Two major roads, US 29 and Rio Road East, provide all the principal access to development in Neighborhood 2. Beyond these two roads, most residential areas are accessed by a combination of loop roads and a branch-like roadway network. This network ultimately focuses neighborhood traffic onto a few intersections that connect with through roads, such as Rio Road and US 29. This system of roads is similar to the one that exists in Neighborhood 1, resulting in similar trip patterns to those described above. Rio Road East is the area's principal arterial, providing access to most subdivisions east and west of the railroad tracks. Local roads provide only poor connections between residential areas and other destinations.

The retail and commercial uses along US 29 and residential uses in close proximity to US 29 are accessed either directly off of US 29 or from the perpendicular roads.

### **Community of Hollymead**

The Community of Hollymead is the largest of the Northern Development Areas (4,474 acres) and is located north of the South Fork of the Rivanna on both sides of US 29. Its eastern boundary is formed by a combination of Pritchett Lane, Proffit Road, Powell Creek, and the railroad tracks. Polo Grounds Road and a creek near Templeton Acres form Hollymead's southern boundary, while the North Fork of the Rivanna is its northern limit. Its western edge, shared with Rural Area 1, is formed by Earlysville Road, the Charlottesville-Albemarle Airport, and Dickerson Road.

The pattern of land uses east of US 29 is dominated by two suburban residential neighborhoods, Forest Lakes North and South. These are separated from US 29 by substantial forested buffers. Both neighborhoods center around the Hollymead Elementary School and Sutherland Middle School and the public playfields and open space associated with these schools. Larger areas of forests and agricultural fields east and west of US 29 are still undeveloped. These areas include vacant sections of land between Polo Grounds Road and the southern edge of Forest Lakes South, in the North Pointe area, in large portions of the UVA Research Park, and in areas located west and south of Hollymead Towncenter.

Hollymead Elementary School and Sutherland Middle School and their substantial public playfields and open space form an important community focal point for Forest Lakes. Additional semi-public recreation centers are owned by the Forest Lakes North and South neighborhood associations.

The Hollymead area includes a number of light industrial and industrial uses. These are focused in areas such as the Airport Center, the Airport Industrial Park, and the Northside Industrial Park. The University of Virginia Research Park, with 562 acres, is the largest individual employment center in the Places29 Area. The research park is still largely undeveloped and will be a major determinant of the future community structure in the area north of Airport Road and east of US 29. This area includes research and development, light industrial, and industrial uses.

As in Neighborhoods 1 and 2, the roadway network in Hollymead east of US 29 is a combination of loop roads and cul-de-sacs. Connectivity between adjacent residential developments is minimal. For instance, aside from US 29, only Timberwood Parkway connects Forest Lakes North and South. West of US 29, the network of roads is limited because there is less existing urban development.

**Community of Piney Mountain**

The Community of Piney Mountain, with 607 acres, is the smallest of the development areas. It is bounded by the North Fork of the Rivanna in the south, and Dickerson Road in the west and northwest. Its eastern and northern boundaries follow the alignment of smaller streams.

Piney Mountain is home to GE-Fanuc and National Governmental Intelligence Center (NGIC), two key County employers.

The western half of Piney Mountain is largely built out with suburban-style residential development and the GE-Fanuc campus. These residential and light industrial land uses are separated from one another and from US 29 by forested buffers. Adjacent developments of Briarwood and Camelot developments currently lack a local road connection to each other.

The area east of US 29 includes a number of light industrial uses located adjacent to the street, as well as the NGIC facility that is accessed via the only local road in this area. The eastern portion of Piney Mountain is otherwise undeveloped and forested. The area around and including NGIC has been designated the Rivanna Station Military Base, and the Defense Intelligence Agency (DIA) will be joining NGIC in this area over the next few years.

Figure 3.1: The Northern Development Areas

**Planned Development**

Already approved and in-process development proposals are an important component in planning for the Places29 Area. This is particularly true in light of the large scale of some of the recently approved proposals, including Albemarle Place, Hollymead Towncenter, and North Pointe, which will account for a significant share of growth in the next five to ten years and beyond. The following chart provides a summary of development projects that have already received County approval, are currently under review, or have been presented informally to the County.

[The County would like to see all these planned development projects reduced to a chart. There would be no additional text, except for the paragraph above, and no map.]

**Currently Approved and In-Process Development Projects**

Project	Location	Residential (Units)	Commercial (Sq. Ft.)	Retail (Sq. Ft.)	Office (Sq. Ft.)	Other
Approved Projects						
Albemarle Place						
Belvedere						
Briarwood/ Camelot						
Etc.						

Proposed and "In Process" Projects						
Treesdale						
Etc.						

**Existing and Planned Utilities Infrastructure**

**Existing Utility Infrastructure**

In order to determine whether the alignments of major existing utility lines pose obstacles to future development within the Northern Development Areas, plans provided by Dominion Power and the Rappahannock Electric Coop were reviewed for the presence of major utility alignments.

**Overhead Electrical Transmission Lines**

Based on these maps and through interviews with officials from the utility companies, only one overhead major transmission line crosses into the Northern Development Areas. This transmission line is associated with a 100- to 150-foot wide easement. Its existing alignment, however, is routed between homes in the Forest Lakes neighborhood on land designated as semi-public open space and does not touch any of the undeveloped areas with potential for future development. Locations of local power lines are addressed routinely during the site development process and do not affect the framework-level land use designations of this Master Plan.

**Gas Utility Lines**

Most gas lines in the County follow Virginia Department of Transportation rights-of-way and thus do not require an easement. In the rare cases that lines deviate from road rights-of-way, a 15-foot easement is required. It does not appear that there are any existing easements in areas of potential future development. A major gas line is located alongside Greenbrier Drive and associated with a 40-foot wide easement.

**Planned Utility Infrastructure**

Currently, the Rivanna Water and Sewer Authority is engaging in a major study to determine future water demand throughout the County’s jurisdictional areas. The outcome of this study will determine the potential need for additional water and sewer utilities in the area. The conclusions of the study are unknown at this time, but it is expected that future expansion will likely not have an effect on the framework level plan.

**Edge Conditions**

In Albemarle County’s Comprehensive Plan, Principle 12 of the Neighborhood Model calls for “Clear boundaries with the Rural Areas.” In order to fulfill this principle, this Master Plan has included a review of the conditions at the edge of the Development Areas. These edge conditions are discussed in detail in the *Assets, Needs, and Opportunities Report*, and are summarized here.

The NDA boundaries include natural barriers such as the Rivanna River, political boundaries , such as the City of Charlottesville, watershed boundaries, such as Berkmar Drive and Pritchett, and existing property lines. Conditions at the edge vary from fully developed to agricultural lands to undeveloped natural areas. A key goal of the Framework Plan is to establish a pattern of consistent edge conditions along the boundary of the Places 29 Area. The recommended edge conditions are in the Unified Design Guidelines in Chapter 7.

## **Open Space and Natural Resources**

### **Open Space**

Planning for future growth in the Places29 area requires a thorough understanding of the existing open space and natural resources. This understanding will help decide what type and quantity of open space will be needed to support new development. It is also important to determine the level of protection that may be needed to preserve the area's natural environment.

Open space planning for an urbanizing area is different from that in the Rural Areas. This distinction is recognized by the Urban Open Spaces chapter of the Comprehensive Plan's Natural Resources and Cultural Assets section.

*“There is a fundamental difference in the value and character of open space in urban and rural situations. In the Rural Area, the County is often seeking to conserve large systems of land of particular value (such as agricultural and forestry lands) or to preserve areas of significant resources (mountain ridges, stream valleys, wildlife habitat.) Whereas, in urban areas some preservation of natural areas (such as stream valleys) occurs, but more often, open spaces are designed and created....Urban open spaces will become more important as the County's Development Areas become denser and as additional urban areas are developed. ... In addition, specifically designed open spaces should be incorporated as amenities into urban developments to offset the higher densities. In evaluating higher density proposals, the County will consider how they relate to existing open space systems, and how they create new open spaces.” (Natural Resources and Cultural Assets Section, p. 181/182)*

This section of the Comprehensive Plan also identifies two strategies that are important to this Master Plan.

1. Evaluate all Development Area proposals for their contribution to the urban open space network.
2. Seize opportunities for urban parks.

These two strategies underline the importance of identifying and preserving natural and open space resources in the Northern Development Areas that have significance as natural habitats, offer opportunities for stormwater management, are areas of natural beauty, or are an asset for recreational uses. A critical aspect of this planning effort is a focus on opportunities to connect these urban open spaces by a system of Greenways.

The following paragraphs describe the existing open spaces and natural resources in the Places29 area.

### **Public Open Spaces and Parks**

The following parks provide the population in the Places29 Area with public, recreational open space:

1. Darden Towe Park (located in Neighborhood 3)
2. Pen Park (located in Charlottesville just south of Neighborhood 2)
3. Ivy Creek Natural Area (located in Rural Area 1, west of Neighborhood 1)

#### 4. Chris Greene Lake Park (located in Rural Area 1, northwest of Hollymead)

These parks provide a significant range of recreational activities for residents in both the Rural Areas and the Development Areas. Because these open spaces are located at some distance from the Development Areas, it is important to plan for safe, multimodal connections between the Places29 Area and these open spaces.

The County's school sites provide recreational facilities that serve both the school's student population and the surrounding neighborhoods and beyond. For this purpose, the County has developed standards for recreational facilities that establish the equivalent of Community Parks at Elementary Schools, District Parks at Middle Schools, and District Parks at High Schools<sup>2</sup>. To allow school sites to fit flexibly into the surrounding neighborhood and local environmental conditions, the County has two sets of standards for Elementary Schools: the "Community Park" school level of service and "Neighborhood" school level of service. "Community Park" schools include a broader range and higher level of recreational facilities than "Neighborhood" schools, which provide a minimum of recreational and athletic facilities.

The only existing public park in the Northern Development Areas that is not co-located with a school is Humphris Park. This park is located east of Hydraulic Road in Neighborhood 1, and consists of a wooded area in a largely natural state. It does not provide for programmed recreational activities, such as athletic fields, playgrounds, or tot lots. In its present condition, the park is used mainly as an open space for passive recreation and as a buffer between housing developments in the area. The park represents a significant potential for creating an urban open space that not only provides for passive recreation, but includes pockets of community oriented uses, such as tot lots, small ball fields, and other moderately sized subareas that support a range of recreational activities.

The Conservation Easement Program and Public Lands chapter of the Natural Resources and Cultural Assets section of the Comprehensive Plan includes a strategy that suggests further study of the open space/recreational potential of a possible park northeast of the intersection of Routes 29 and 643 (Rio Mills Road).

It should be noted that the County is considering a major indoor recreational facility in one of the Northern Development Areas. Such a facility would include covered athletic courts and other amenities. A final decision about the location has not yet been made.

### **Greenways**

The County's Comprehensive Plan recognizes the importance of public urban open spaces and the need for establishing a network of such spaces. There is a detailed discussion of Greenways in the Natural Resources and Cultural Assets section of the Comprehensive Plan, which states the following objective:

*Establish a Countywide network of greenway trails for conservation, recreation, transportation, and education throughout Albemarle County, and linked to trails in the City of Charlottesville.*

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<sup>2</sup> Please refer to the Comprehensive Plan's Community Facilities section for details about the range and size of recreational facilities required for Community and District Parks at school locations,

At present, the County's network of planned Greenways and the number of Greenway access points is limited, and many of the proposed Greenways have yet to be implemented. This implementation is difficult in some locations where proposed Greenway alignments pass near the backyards of existing residential development. In order for the network of Greenways with trails and multi-use paths to be an attractive alternative for bicyclists and pedestrians, it is important to provide additional connecting network segments and to create a series of convenient access points from existing and future residential neighborhoods.

## **Water Resources**

The Natural Resources and Cultural Assets section of the Comprehensive Plan addresses the protection, conservation, and management of a variety of water resources in the County, including both surface water and groundwater resources. The Plan also emphasizes the "functional interrelationship of stormwater hydrology, stream buffers, flood plains, wetlands, and human management practices."

In light of the potential impacts of new development on water resources, it is important to inventory the locations of key surface water resources. This information can be used to target the best practices outlined in this Master Plan's Unified Design Guidelines to areas of future development to preserve these water resources. The information can also help locate future development in order to integrate water resources in a sustainable way and to handle stormwater treatment and management facilities as community focal points.

The North and South Forks of the Rivanna River represent the most prominent surface water resources in the area. Both are major drinking water resources for Northern Albemarle. A number of streams and lakes add further diversity to the hydraulic, habitat, scenic, and recreational assets provided by water bodies in the Places29 Area. The County generally prohibits development in the floodplain areas that are part of these river systems, but where such development would serve a County purpose it is conditionally allowed and regulated through the County's special use permit process. The latter is required in order to remain under coverage of the National Flood Insurance Program of the Federal Emergency Management Agency.

The locations of individual wetlands were not specifically mapped for this Master Plan. However, it is expected that wetlands could be present on a number of sites in the Places29 area, particularly those near one of the many streams in the area. Applicants for development proposals have the responsibility to ensure that wetlands are properly identified and addressed as per applicable Federal and State requirements. The County can support this process through its access to the National Wetland Inventory.

## **Sites with Importance for Biodiversity**

The Natural Resources and Cultural Assets section of the Comprehensive Plan recognizes the importance of protecting biological diversity in both the Rural Areas and the Development Areas for their ecological, aesthetic, and economic benefit to the community. The plan also establishes the objective to "...develop a systematic knowledge of the types and distribution of biological resources in Albemarle County..."

As a first step toward addressing this objective, the County established the Biodiversity Working Group (BWG). This group published an initial list of Important Biodiversity Sites in *Albemarle County Biodiversity – A Report on History, Current Conditions, and Threats, with Strategies for*

*Future Protection.*<sup>3</sup> In the absence of a final and adopted database, this Master Plan uses information contained in the report's initial list of important sites. Only two Important Sites are located in the Places29 Area: a small portion of an Important Site reaches into the westernmost section of Piney Mountain. Another small site of importance for biodiversity is located at the southernmost tip of the Hollymead area.

### **Areas with Critical Slopes (Slopes in Excess of 25%)**

The Albemarle County Comprehensive Plan recognizes that areas with critical slopes:

*...require protection in order to maintain the existing balance between slope, soils, geology, and vegetation. Critical slopes are defined as areas with a slope of 25 percent or greater. Clearing, grading, building, cropping, and overgrazing of these lands can result in extensive erosion and landslides or sloughing of soil and rock; excessive stormwater runoff, increased siltation and sedimentation; loss of aesthetic resource; and, in the event of septic system failure, a greater travel distance of septic effluent. (Comprehensive Plan, Natural Resources and Cultural Assets Section, p. 107)*

Mapping areas with critical slopes is important because these areas are factored into the configuration and distribution of land uses in the Framework Plan. For instance, an area with critical slopes can be used as natural buffer area between otherwise incompatible uses. Understanding the location of areas of steep slopes also affects the alignment and design of transportation facilities. Finally, areas of steep slopes, like semi-public open spaces, stream buffers, and floodplains, contribute to a network of open spaces that may include additional greenways.

Significant areas of critical slopes are primarily associated with riverbanks and creek beds. Concentrations of critical slopes occur, for example, along the unnamed creek that flows through the Woodbrook neighborhood, the banks of the South and North Forks of the Rivanna River, the Montgomery Ridge area, Powell Creek west of Forest Lakes South, and the unnamed creek that flows southwest into the UVA Research Park. Preservation of important environmental areas is addressed in Chapter 7.

### **Historic and Archaeological Resources**

A review of maps and data maintained by the County and the Department of Historic Resources (DHR) indicates that the Places29 area includes a variety of historic and archeological resources. This includes a few sites that are listed on the National or State register for historic places.

The County has recently entered into a cost-share agreement with the Division of Historic Resources (DHR) to update previously conducted surveys of historic and archeological resources.

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<sup>3</sup> Prepared by the Albemarle County Biodiversity Group in October 2004, the report states that this list "is meant to serve as an outline, a 'starting point' to which data can be added or amended. Once this database is created, these sites can be identified in the Comprehensive Plan as important sites to be considered in policy development, land-use planning, and application reviews."... "No specific standards for inclusion of any of the sites are implied or to be assumed; they are simply those places agreed to by the group as being foremost in their uniqueness, based on their expertise and years of field experience." (Albemarle County Biodiversity – A Report on History, Current Conditions, and Threats, with Strategies for Future Protection, p.57, October 2004)

These updates will help gain a better understanding of the nature and current condition of resources throughout the County, including those located in the Northern Development Areas.

### ***Existing Transportation Network***

A multimodal transportation system supports the Northern Development Areas and provides for the movement of people and goods to and through Albemarle County. A “mode” refers to a means of travel, such as autos, trucks, bus and rail transit, bicycles, pedestrian, air passenger and freight service, and railroads. “Multimodal” means that several modes serve the same area and may share the same road or path.

The transportation system in the Places29 area is made up of several networks: streets, transit, bicycle, pedestrian, railroad, and air. The first four of these networks share the street network. A system of off-street trails also supports the bicycle and pedestrian network. Rail and air are independent networks that have terminals connected to the street network. A comprehensive review of existing facilities and operating conditions was conducted for each mode of transportation in the Northern Development Areas. The findings from these evaluations are discussed individually by mode in the following sections.

### **Existing and Planned Transportation Network**

Public streets in Virginia are identified as part of the primary system or the secondary system of roadways, both of which in Albemarle County are under the jurisdiction of the Virginia Department of Transportation (VDOT). Primary roads connect cities and towns with each other and with interstate highways, while secondary roads are local connector or county roads. VDOT regulates the design of roadways in the primary system through its *Road Design Manual* and for secondary roadways through the *Subdivision Street Requirements*.

In addition to the primary/secondary designation, the arterial/collector/local functional classification system developed by the American Association of State Highway and Transportation Officials (AASHTO) is used to identify streets in the Northern Development Areas. Streets are classified primarily on the basis of their regional<sup>4</sup> traffic-carrying role and access characteristics. The functional classes of roadways include principal arterials (interstate, other access-controlled freeways, and other arterials with partial access control), minor arterials, collectors, and locals (neighborhood streets). The functional classification is used to guide the choice of roadway design parameters.

At a network level, the functional hierarchy is organized to link locals with collectors and collectors with arterials. In concept, arterials are intended primarily to carry regional traffic, while local streets are intended for neighborhood traffic. Collectors and minor arterials are intended to serve a mix of local and regional traffic. Many roadways, particularly those that are multimodal, are multi-function in that they carry a mix of local and regional trips and pass through different types of places. The relationship between transportation and land use is highly complex, particularly along arterials, because these streets are commercial and residential corridors with frequent access points that act as conduits of through movement. Figure 3.15 shows the functional classification of streets in the Northern Development Areas.

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<sup>4</sup> Regional in this sense is intended to mean longer distance trips that are more “regional” in nature; shorter distance trips would be considered “local” in character.

Beyond the functional classification, Albemarle County's Neighborhood Model (NM) introduces a series of street types that are more specifically related to the neighborhood scale and are currently being considered as an alternate set of design requirements for those contained in the *Subdivision Street Requirements*. The NM road designations add street types (boulevards, avenues, lanes, and alleys) to the arterial/collector/local system used by VDOT to account for different functions. The NM road designations generally reduce lane widths and place more emphasis on lower speeds.

As public facilities, the transportation network is subject to an on-going federally mandated process that establishes a 20-year program of capital improvements. The planned improvements to the transportation network and the basis for those improvements are described in the *United Jefferson Area Mobility Plan*<sup>5</sup> (UnJAM 2025). UnJAM 2025 represents a combination of the Charlottesville-Albemarle Regional Transportation (CHART) Plan and the five-county Thomas Jefferson Planning District Rural Area Transportation Long Range Plan. The UnJAM 2025 Plan is the current official long-range transportation plan for the Charlottesville Urban Area Metropolitan Planning Organization (MPO).

The following tables (see next page) give an overview of roadway improvements planned under the UnJAM 2025 program. Yellow shaded rows are completed or substantially in-progress projects.

#### **Table T-1. 2025 Regional Roadway Projects: Northern Development Areas**

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<sup>5</sup> Thomas Jefferson Planning District Commission and Charlottesville Albemarle Metropolitan Planning Organization, *UnJAM 2025: United Jefferson Area Mobility Plan*, Charlottesville, VA, May 10, 2004

Project #	TIP #	Project	Type*	Project Description
<b>Roadway Improvement Projects</b>				
I-1	S-10	Airport Road (Route 649)	U4	Expand roadway to four lanes with sidewalks and bike lanes; includes roundabout at intersection of 649/606
I-3	n/a	Free State Road Connection and Bridge	R2/BR	Construct 2-lane road with sidewalks and bike lanes from Rio Road to Free State Road and replace substandard bridge
I-10	S-12	Proffit Road (Route 649)	U2	Reconstruct roadway; Create urban cross-section adding capacity; increase lanes (4 from 29 to Worth Crossing, 3 to Pritchett Lane, remain 2 lanes to Development Area Boundary)
I-15	n/a	Route 29 (from South Fork Rivanna River to Airport Road)	R6	Improve roadway to accommodate anticipated traffic due to increased development
I-16	n/a	Route 29 Corridor Improvements (Previously named Route 250/29 Hydraulic-Greenbrier Interchanges)	n/a	Provide partial funding for improvements to be recommended from 29H250 P2 Study
I-21	S-13	Dickerson Road (Route 606)	n/a	Pave roadway from 850 to 1030
n/a	n/a	Hydraulic Road Pedestrian Crossing (at Georgetown Road)	n/a	Provide pedestrian crossing
<b>Roadway New Construction Projects</b>				
N-1	n/a	Berkmar Drive Extended (Town Center Road)	R2	Extend existing roadway from northern terminus of Hilton Heights Road to Rivanna North Fork
N-2	S-17	Eastern Connector (southern route)	R2	Study potential location connecting 29N to 250E
N-5	S-6	Meadow Creek Parkway Phase I (County)	U2	County portion of MCP; southern terminus Melbourne Road, northern terminus Rio Road
N-6	S-8	Meadow Creek Parkway Phase I Bridge over Norfolk Southern Railroad	U2	Bridge of MCP Phase I over CSX Railroad
N-7	S-7	Meadow Creek Parkway Phase I Bridge over Meadow Creek	U2	Bridge of MCP Phase I over Meadow Creek
N-9	S-9	Northern Free State Road (formerly Meadow Creek Parkway Phase 2)	R2	Location study for new road, connecting at its southern terminus of 631, extending to Rt 29
N-10 <sup>1</sup>	P-7	Route 29 Bypass (Funding to resolve current litigation of ROW purchases only)	R4	Bypass road with southern terminus from 29.250 Bypass, northern terminus to 29 above Berkmar
<b>Roadway Study Projects</b>				
ST-1	U-13	Route 250/29 Safety/Mobility Study	n/a	Conceptual design study leading to PE (29H250)
ST-2	n/a	Route 29 Corridor Study (29H250 Phase 3)	n/a	Completion of 29H250 as presented in original scope (from Barracks Road to North Fork Rivanna)
<b>Vision Projects (Not Fiscally Constrained)</b>				
V-11	n/a	Hydraulic Road (Rt. 743) from Rio Road (Rt.631) to Woodland Road (Rt. 676)	Int	
V-19	n/a	Polo Grounds to Proffit Road Connector	U3	
V-20	n/a	Rio Road (Rt. 631) from Albemarle Square to Fashion Square	Int	
V-22	n/a	Rt. 29 Seminole Trail intersections (east-west movement) Barracks Road (Rt. 654) to Airport Road (Rt. 649)	Int	

TIP Funding Sources  
 I Interstate  
 U Urban  
 P Primary  
 S Secondary  
 n/a No funds allocated in TIP

\* Project Types  
 U Urban Roadway - typically with curb and gutter, and sidewalks  
 R Rural Roadway - typically with swales and paths  
 # (after U or R) # of travel lanes  
 Spot Spot Improvements  
 Int Intersection Improvements  
 Br Bridge Improvements  
 TSM Transportation System Management

Source: TJPDC

The vision projects shown in Table T-1 are not funded at the current time, but are in the regional plan as placeholders for future programming.

In addition to the projects in the Northern Development Areas, there are a series of projects in adjacent areas that will extend the street and bicycle networks of the Northern Development Areas. These projects are shown in Table T-2. Table T-2. 2025 Regional Roadway Projects in Adjacent Areas

Project #	TIP #	Project	Type*	Project Description
<b>Roadway Improvement Projects</b>				
I-5	S-5	Georgetown Road (Route 656)	Spot	Retrofit existing roadway; create urban cross-section providing for continuous pedestrian, bicycle access
<b>Roadway New Construction Projects</b>				
N-3	U-12	Hillsdale Drive Extended	U2	Add new roadway from southern terminus of existing Hillsdale (at Greenbrier) to Hydraulic Road
N-4	U-4	Meadow Creek Parkway Phase I (City)	U4R	City portion of MCP; southern terminus beginning on 250 Bypass, northern terminus at Northern Corporate Limit; includes parkland; County matching City's Design; VDOT will help fund pond
N-8	U-5	Meadow Creek Parkway/McIntire Interchange	n/a	Construct grade-separated interchange at McIntire and Meadow Creek Parkway as part of MCP roadway project
<b>Roadway Study Projects</b>				
ST-3	n/a	UVA North Grounds Connector Road to Hydraulic/Barracks/Georgetown (Mobility and Location Study)	n/a	Study extending NGC to Hydraulic/Barracks/Georgetown (Feasibility and Location Study)

**TIP Funding Sources**

- I Interstate
- U Urban
- P Primary
- S Secondary
- n/a No funds allocated in TIP

**\* Project Types**

- U Urban Roadway - typically with curb and gutter, and sidewalks
- R Rural Roadway - typically with swales and paths
- #: (after U or R) # of travel lanes
- Spot Spot Improvements
- Int Intersection Improvements
- Br Bridge Improvements
- TSM Transportation System Management

Source: TJPDC

### Transit Network

At this time, three Charlottesville Transit System (CTS) routes serve portions of the Northern Development Areas. Scheduled transit service is available along US 29 via Routes 5, 7 and 20, extending as far north as the Wal-Mart near Hilton Heights Road. Demand-responsive transit service is provided by Albemarle County via the Jaunt system.

CTS Route 5 operates between the Barracks Road Shopping Center and Fashion Square/Rio Road. This route operates Monday through Saturday daytimes on 60-minute headways. There is no evening service. Based upon the recent ridership data collected during the preparation of the *Charlottesville Transit Improvement Study*<sup>6</sup>, there are 170 daily boardings on Route 5. Fifty percent of the trips are for commuting purposes and over 40 percent are for personal business and shopping.

CTS Route 7 originates in Downtown Charlottesville and ends at ????. Daily service is provided Monday through Saturday at 15-minute intervals. Evening service runs on a 30-minute headway. Evening service runs along a truncated route that has a northern termination at Fashion Square. Ridership data shows that Route 7 has over 900 boardings during daytime service and approximately 150 boardings during the evening. Route 7, which is one of the primary routes in the system, carries over 25 percent of the daily system ridership. Surveys found that fifty-seven percent of these trips were for commuting, 12 percent were for personal business and 19 percent for shopping purposes.

Route 20 provides evening service only along a segment of US 29 North from Hydraulic Road to Greenbrier Drive. Operating on a 30-minute frequency, the route extends from the University of Virginia Hospital to Whitewood Village.

<sup>6</sup> BMI/SG, *Charlottesville Transit Improvement Study*, April 2005

**Proposed Changes**

Service configuration improvements recommended in the *Charlottesville Transit Improvement Study* include a major change to Route 7, which is that the northern portion of the route between Fashion Square and Wal-Mart/Sam’s Club, served by every other trip, should be removed from Route 7 and be combined with Route 5. This would significantly reduce the running time for Route 7 and result in all Route 7 trips having the same endpoints. With this adjustment, the route would continue to require a 90-minute running time to achieve schedule reliability.

Currently, Route 7 travels through the shopping areas between Kmart and Seminole Square, in the northbound direction and on US 29 in the southbound direction. Passengers who wish to board or alight in the southbound direction must cross Route 29 to access the shopping areas. It was recommended that the bus be routed through Seminole Square in both directions (when time permits) and only in the southbound direction if time is limited.

The major change to Route 5 is the addition of the former northern portion of Route 7 that runs between Fashion Square and Wal-Mart/Sam’s Club. This increases the running time of the route from 60 to 90 minutes. Funding for this route service is primarily by Albemarle County.

**Bicycle Network**

The bicycle network in the Northern Development Areas includes bicycle lanes and routes on streets and off-street paths/trails. On-street bicycle lanes are delineated by pavement markings. Bike routes are indicated by signs, but do not provide a marked bike lane. Multi-use trails serve multiple user groups, including in-line skaters, bicyclists, and pedestrians. Bicycle lanes are present on Hydraulic Road, Rio Road, Hillsdale Drive, and a portion of Berkmar Drive. Table

**Table T-3. 2025 Recommended Bicycle Projects**

TIP #	Route/Street	From/To	Type*	Recommendation
<b>Multi-Use Paths (10 feet wide)</b>				
?.?.?	Powell Creek	Forest Lakes to Rivanna River	MUP	Build 3 mile multi-use path
S.??	Earlsville Road	Earlsville to Hydraulic Road	MUP	Construct a 6.5 multi-use path from the Rock Shop to Earlsville
P.??	Route 29	North Fork Research Park to Route 250	MUP	Build 8 mile multi-use path
S.??	Commonwealth Drive	Hydraulic Road to Four Seasons	SW/BL	Complete walks and add bicycle lanes.
S.??	Berkmar Drive	Rio Road to Route 29	SW/BL	Add 0.5 mile bicycle lanes and sidewalk

\* Project Types

- BL On-road Bicycle Lane
- MUP Multi-use Path
- SW Sidewalk
- CW Crossing feature

T-3 shows the recommended bicycle projects from the UnJAM 2025 regional plan.

Source: TJPDC

**Pedestrian Network**

The pedestrian network in the Northern Development Areas consists primarily of sidewalks adjacent to streets. Multi-use trails, described in the section on bicycle networks, also serve pedestrians. Sidewalks are present along both sides of portions of US 29, extending from the vicinity of the southern study limits north to approximately the South Fork of the Rivanna River.

Sidewalks are also present along several of the crossroads in the corridor (Hydraulic, Seminole Court, Greenbrier, Rio Road, and Airport Road).

Provisions for pedestrians to cross US 29 are largely absent. There is one crosswalk and one pedestrian signal head on US 29 between Barracks Road and the South Fork of the Rivanna River, but they are not at the same location. The lack of delineated pedestrian crossings on US 29 is an impediment to pedestrian travel within the corridor. In addition to the lack of marked crosswalks, signal timing generally does not provide for a separate pedestrian signal phase.

Table T-4 shows the recommended pedestrian projects from the UnJAM 2025 regional plan.

**Table T-4. 2025 Recommended Pedestrian Projects**

Sidewalks				
U.??	Hillsdale Drive	Greenbrier to Rio	SW	Complete sidewalk system
U.??	Hydraulic Road	Route 250 to Commonwealth	SW	Complete sidewalk system
S.??	Rio Road	Melbourne to Greenbrier	SW	Construct 2 mile walkway or path
S.??	Commonwealth Drive	Hydraulic Road to Four Seasons	SW/BL	Complete walks and add bicycle lanes.
S.??	Berkmar Drive	Rio Road to Route 29	SW/BL	Add 0.5 mile bicycle lanes and sidewalk
Crossings				
P.??	Route 29	Airport Road to Route 250 Bypass	CW	Grade-separated crossings at: Hydraulic, Rio, and Hollymead
U.??	Hillsdale Drive	Greenbrier to Rio	CW	Median Crosswalk Islands

**\* Project Types**

- BL On-road Bicycle Lane
- MUP Multi-use Path
- SW Sidewalk
- CW Crossing feature

Source: TJPDC

**Rail Service**

Norfolk Southern, which is the second largest railroad system in Virginia and one of the four largest railroads in the United States, operates a north/south running line for freight service that traverses Albemarle County east of the Northern Development Areas. AMTRAK service for passengers is provided in and out of the City of Charlottesville’s Union Station on West Main Street; both City and County users access the train from this station. There are no AMTRAK stops in Albemarle County. Charlottesville is served by two lines, the Crescent, which runs from New Orleans to New York, and the Cardinal, which runs from Washington, D.C. to Chicago.

The Virginia State Rail Plan refers to a proposal for passenger service from Bristol to Richmond and Washington, D.C. that would use the Norfolk Southern line. This proposal is called The TransDominion Express (TDX). The Plan states that:

*...several reports have been prepared evaluating the potential of operating rail passenger service between Bristol to Richmond and Washington, D.C. The proposed service, known as the TDX, would link Southwestern Virginia to Richmond via Lynchburg and Southwestern Virginia to Washington, D.C., via Lynchburg and Charlottesville. The proposal calls for improvements to NS track to accommodate a high level of service with European style cars and amenities. (Virginia State Rail Plan, p. 80, 2004)*

The TDX organizers have been working toward qualifying the Bristol to Richmond demonstration route for eligibility for funding from the Rail Enhancement Fund. In addition, recent efforts have looked at the potential for increasing AMTRAK frequency of service between Lynchburg and Charlottesville directly to DC.

### **Air Travel**

The Charlottesville-Albemarle Airport (CHO), located in the NDA, is a non-hub, commercial service airport offering 60 daily non-stop flights to and from Charlotte, Philadelphia, New York/LaGuardia, Washington/Dulles, Cincinnati, Detroit, and Atlanta. CHO is served by Delta Connection, United Express (Atlantic Coast Airlines), Northwest Airlines, and US Airways Express (Piedmont Airlines). The Airport also serves General Aviation uses. The Charlottesville-Albemarle Airport has grown from 65,600 passengers departing on commercial flights in 1980 to 132,400 in 1990, and served 163,400 passengers in 2003.

The *Charlottesville-Albemarle Airport Master Plan*, adopted in 2004 notes that the vast majority of customers reach the airport by car, which emphasizes the importance of the street system that serves the airport. Traffic delays on the access roads (US 29 in particular) affect the convenient nature of the airport and its economic vitality. Maintaining a predictable, reasonable travel time from the population and employment centers in Charlottesville and Albemarle County is vital to the continued success of the airport.

### **Existing Traffic Conditions**

Traffic volumes on the streets in the Northern Development Areas vary widely (see Daily Existing Traffic Volumes – Figure 3). On US 29, average daily traffic (ADT) ranges from about 35,000 vehicles per day (vpd) at the Greene County line to about 50,000 vpd near Polo Grounds Road and climbs to over 60,000 vpd near the US 250 Bypass. Other major roadways such as Rio Road, Hydraulic Road, and a segment of Berkmar Drive carry volumes that range from about 15,000 vpd to over 30,000 vpd. A third group of roads carry ADT volumes in the range of 5,000 to 10,000 vpd and includes Airport Road, Berkmar Drive (north of Woodbrook Drive), Hilton Heights Road, Greenbrier Road and Earlysville Road. Other roads and streets in the Northern Development Areas carry less than 5,000 vpd and many carry less than 1,000 vpd.

Traffic operations are congested during peak commute periods along routes that connect to US 29 and in corridors like Hydraulic Road, and Rio Road that connect the Northern Development Areas to the City of Charlottesville. The signalized intersections on US 29 operate in acceptable conditions during the peak periods, except for the locations from Hydraulic Road to the US 250 Bypass. In the northern portion of US 29, where more of the intersections are unsignalized, traffic on the side street approaches at these intersections experiences long delays during peak periods, but otherwise can access the roadway. Outside of US 29, there are congested intersections on Hydraulic Road, primarily between US 29 and the US 250 Bypass. Traffic volumes on Rio Road East are sufficiently high to cause unacceptable side street delay at some of the unsignalized intersections along that roadway.

### **Figure 3.2: Daily Existing Traffic Volumes**

### **Commute Patterns**

The Virginia Employment Commission has developed information on commute patterns, based on residents commuting out of the County and on workers coming into the County.

### **Top 10 Places Residents Are Commuting To from Albemarle County**

<b>Area</b>	<b>Workers</b>
Charlottesville, VA	13,886
Greene County, VA	545
Orange County, VA	326
Fluvanna County, VA	325
Waynesboro, VA	288
Louisa County, VA	287
Augusta County, VA	245
Nelson County, VA	208
Henrico County, VA	129
Madison County, VA	128
Total County Residents Leaving County	16,367

### **Top 10 Places Albemarle County Workers Are Commuting From**

<b>Area</b>	<b>Workers</b>
Charlottesville, VA	7,990
Fluvanna County, VA	3,413
Greene County, VA	2,956
Nelson County, VA	1,543
Louisa County, VA	1,248
Orange County, VA	877
Augusta County, VA	782
Buckingham County, VA	701
Waynesboro, VA	535
Madison County, VA	525
Total Incoming Workers	20,570

### ***Future Trends***

The traffic volume pattern described above is the product of several factors. The primary factor is that Albemarle County and the Northern Development Areas attract regional travel from neighboring areas. Commuting patterns from the 2000 Census indicate that people from neighboring counties and cities come to work in Albemarle County and the City of Charlottesville. The same data show that workplaces in Albemarle County draw very few workers from outside the neighboring counties. Similarly, among workers who reside in Albemarle County, a vast majority of residents commute to jobs in either Albemarle County or Charlottesville. Few commute to the Richmond or Washington Metro Areas. This means that there is a concentration of traffic along destination corridors where employment, retail, and

residential land uses are located. The Northern Development Areas are a major attractor of regional and local travel, as well as a generator of trips by residents living in the areas.

When these movement patterns are viewed in relation to US 29, they show that about 10 percent of the daily travel is from trips that travel through the Northern Development Areas to destinations outside the Charlottesville metro area. Another 25 percent of the daily travel is from people commuting in and out of the Northern Development Areas to and from neighboring counties. The trips that originate within the Northern Development Areas and the City of Charlottesville that travel to jobs, services and shopping in these areas are about 65 percent of the daily travel.

### Traffic Projections

What is significant about the above relationships is that as growth occurs in the region, this pattern of activity that focuses travel on the Northern Development Areas will continue to intensify. The travel demand forecasts prepared for the UnJAM 2025 regional plan indicate that traffic growth on US 29 north of the US 250 Bypass will add approximately 20,000 vpd to the existing traffic counts. In 2025, the UnJAM Plan projects that volumes on US 29 near the US 250 Bypass will be approximately 80,000 vpd. Further north in the corridor, volumes of over 50,000 vpd are projected north of Airport Road (see Daily Future Traffic Volumes – Figure 3.3).

Traffic volumes will grow on other major road corridors, but not to the same extent that they are projected to grow on US 29. This variation is due to several factors, primary of which is the addition of several alternate routes into the future forecasts (see Tables T-1 and T-2) that would help disperse the future traffic over more routes than are available today. Meadow Creek Parkway is one of these routes. Hillsdale Drive extended is another. Hydraulic Road and Rio Road East would see growth of between 5,000 and 10,000 vpd by 2025 under the forecasts prepared for the regional plan.

Figure 3.3: Daily Future Traffic Volumes

### ***Economic Framework***

In order to plan for the future of the Northern Development Areas, it is important to understand the role that the Northern Development Areas currently play in the regional economy. Given existing trends, the likely role of the Northern Development Areas can be projected into the future. This Economic Framework summarizes economic trends for the Charlottesville Metropolitan Area and Albemarle County. It is based on demographics, such as rates of population growth, existing and future household characteristics, and employment trends.

Please note that the full Economic Framework and Market Analysis are available in the *Places29: Assets, Needs & Opportunities Report*. The market for future residential, retail, and office development in the Northern Development Areas is quantified in the market analysis. A market analysis projects the amount of a land use that market demand will support.

The following terms are used in the Economic Framework and Market Analysis:

*Charlottesville Metropolitan Area, Charlottesville CBSA*: The Charlottesville Metropolitan Area (Metro Area) is another name for the Charlottesville Core Based Statistical Area or

Charlottesville CBSA, which is a Census designation. The Charlottesville Metro Area includes Albemarle County, the City of Charlottesville, and Fluvanna, Greene, and Nelson counties.

*Household:* A household includes all the people who occupy a housing unit as their usual place of residence.

*Head of Household:* The person, or one of the people, in whose name the home is owned, being bought, or rented.

## **Regional Demographic and Economic Trends**

The demographic, employment, and economic trends outlined below will help users of this Master Plan understand Albemarle County and how it is changing.

The following items are a summary of the Economic Framework:

### **Household Characteristics and Projections**

- Albemarle County-Charlottesville has a greater proportion of households headed by 15 to 24 year olds and a lower share of households headed by persons 35 to 44 years of age than either the state or the nation. The presence of the University of Virginia likely accounts for the high share of households headed by persons aged 15 to 24.
- The share of households headed by 45 to 64 year olds has increased along with households over 70 years of age. Albemarle County-Charlottesville's increasing share of households aged 45 and over is both a national phenomenon (the baby boom getting older) and a likely function of in-migration. The result of these changes has been an increase in the County's median head of household age.
- There will likely be more Albemarle County-Charlottesville households in the 55- to 70-year-old range. This group typically contains many "empty nester" households. Empty nesters are parents whose children have left home. This life change can impact how these households spend their time and money, and where they live.

### **Income and Employment Characteristics**

- The per capita income in Albemarle County-Charlottesville is higher than the state and national averages. There is significant buying power in Albemarle County.
- Albemarle County has experienced explosive job growth. From 1995 to 2003, the number of jobs in the County increased by over one-third. In 1995 there were more jobs in the City than in the County.
- There are about as many jobs in the County as there are households.
- With over 70,000 jobs available in Charlottesville and Albemarle County, the two areas supplied 82 percent of the Metro Area's jobs in 2003. The City and County are the commercial and marketing center of the region
- As of September 2005, the Charlottesville Metro Area's unemployment rate was among the lowest in the country. Only 3 percent of the Metro Area's labor force was out of work.
- An issue in the region is underemployment. Underemployed workers are those that have the education and skills to occupy higher paying jobs, but occupy lower paying ones. Many talented individuals are taking lower-paying jobs just to stay in the Charlottesville area.

- Over the last five years, Charlottesville Metro Area housing prices have escalated by 71.78 percent. Over the same period, the median household income in the Charlottesville Metro Area increased by only 13.9 percent.

### **Area Employers**

- The area's economic base is primarily composed of government service provision and the following industries: manufacturing, education, technology, retail trade, travel trade, construction and services.
- The region's economy is anchored by the University of Virginia (UVA). With over 12,500 employees at the University and an additional 5,500 at the University Medical Center, UVA accounts for over 15 percent of the employment in the City and County. Over 20,000 UVA students also help to fuel the economy.
- The travel industry is a major component of the local economy. Travel spending in the area exceeds \$307 million annually and generates more than 2,600 jobs in the City and 2,400 jobs in the County.
- The wholesale and retail industries account for the greatest share of County employment after State government.
- The area's economic is changing as it grows. Between 1995 and 2003, the County gained employment across all industry sectors except manufacturing. Many of the manufacturing jobs have been replaced by jobs in the service and hospitality sectors—many of which do not pay as well as the manufacturing positions they replaced.
- The cost of living index indicates that the Charlottesville Metro Area is an expensive place to live, since the cost of living here is 7 percent higher than the national average. Economic Framework Conclusions and Projections
- Because of the high cost of living in the area, diversifying industry to compensate for manufacturing job losses should provide employment opportunities offering at least equivalent pay
- Adequate housing for a wide range of household types and income levels will be needed to accommodate expected population increase
- Albemarle County jobs in the technical and administration industry sector may increase substantially as the UVA Research Park continues to attract tenants.

### **Market Analysis**

Three market analyses—residential, retail, and office—evaluate trends and make projections to determine what the market will demand in the future. Market analyses are useful because they provide information about the magnitude and type of development the market will support over the next ten years. Because markets are complex and variable, projections are only made for the first ten years of the Master Plan's 20-year timeframe. These projections will be reviewed and updated, if necessary, when the Master Plan is reviewed every five years.

The market analysis does not address whether a given land use or the magnitude of development is desirable; that is the role of the planning process. The market analysis is a tool used during the planning process to understand the magnitude and character of future development pressure. With this understanding, the planning process results in strategies to manage this growth in a manner that is consistent with community desires.

## **Residential Market Analysis**

The residential market analysis identifies the demand for new housing in Albemarle County over the next ten years. It also identifies the type of housing (single family or multifamily) demanded. Finally, the market analysis projects the market demand for single-family and multi-family housing units in the Northern Development Areas, given County land use policies and the Northern Development Area's competitive advantages and disadvantages for different types of housing.

### ***Residential Market Findings***

- Almost three-quarters of Charlottesville Metro Area households reside in single-family detached or attached houses.
- As of 2005, almost 60 percent of Albemarle County-Charlottesville households owned their home.
- Rental housing development in the County accounted for 79 percent of new Metro Area rental housing built between 1990 and 2005.
- Between 1990 and 2005, Albemarle County captured 51 percent of all new for-sale housing in the Metro Area. Over this same period, the County captured 79 percent of all new rental units built in the Charlottesville Metro Area. Using these capture rates as benchmarks, the County can potentially support between 2,760 and 3,140 new rental units and between 2,120 and 2,590 new for-sale housing units over the next five years.
- Growth in the number of households is projected to continue to be strong through 2010. The Charlottesville Metropolitan Area is projected to grow by 5,700 households during the next five years. With 4,010 units for-sale housing and 1,690 units for rent ..
- The Northern Development Areas captured 28 percent of the County's new for-sale housing and 49 percent of the County's new rental housing between 1990 and 2005.
- Using these capture rates as a proxy for the future, the Northern Development Areas have the potential to capture between 1,770 and 2,640 new residential units over the next five years.
- Household projections by income and household type are not available for 2010 to 2015. The best approach to projecting demand for the 2010 – 2015 timeframe is to perform the same type of market analysis as part of the five-year review and update in 2010. It can be assumed that the same magnitude of demand for housing in the Northern Development Areas will likely exist from 2010 to 2015 – approximately 1,770 to 2,640 units. What may change is the split between multi-family and single family homes. As land becomes scarcer in the Northern Development Areas and land values increase, it is likely that more multi-family units will be constructed.
- For planning purposes, it is assumed that the split between multi-family and single family demand will change to 45 percent multi-family and 55 percent single family between 2010 and 2015. The single-family home will continue to be the housing type a majority of the market will demand. However, multi-family will become a more attractive housing type due to its affordability and ability to satisfy the one- and two-person household market.

### ***Residential Market Conclusions***

- If current trends continue, there is significant residential development potential in the Northern Development Areas over the next 10 years (2005-2010). The market for residential

development will be largely driven by singles and couples without children at home. There will be a need for new residential products designed for these changing demographics in the County and the Metro Area market.

- Condominium products, such as villas, townhomes and flats, have potential in the Northern Development Areas. However, to capture the market, these unit types must be developed in walkable, neighborhood settings comfortable for older households and singles. In addition, mixed-use settings with goods, services, jobs, and transit within walking distance have proven to be attractive to the empty-nester market.
- There are already between 1,500 and 1,769 housing units approved for development in the Northern Development Areas. If these units are built between 2005 and 2015, the market can support an additional 2,000 to 3,500 units in the Northern Development Areas.

## **Retail Market Analysis**

The retail industry provides goods and services to consumers. The demand for retail space increases when the buying power in a market expands. Buying power is a function of the number of consumers and their income.

Retail considered in this analysis typically includes the types of stores found in shopping centers. These store types include all of the retail industry classifications except motor vehicles and parts establishments, gasoline stations, and nonstore retailers. These store types can be called “shopping center-inclined” retail. Shopping center-inclined retail also includes eating and drinking establishments.

Shopping center-inclined retail can be bundled into four broad categories: 1) General Merchandise, Apparel, Furniture and Home Furnishings and Other (GAFO); 2) Eating and Drinking Establishments; 3) Convenience Goods; and 4) Other. Each of these classifications has very different market and location characteristics. GAFO tends to either be in a “big box” configuration like Wal-Mart or Target, or it is clustered in either a shopping center or downtown location. GAFO stores thrive in environments where there is depth and breadth of merchandise to allow for comparison shopping. For this reason, GAFO stores tend to capitalize on the economic principle of agglomeration.

Eating and drinking establishments vary in their market and location characteristics. Limited service restaurants such as fast food are attracted to locations with high market volume – whether it is people or cars. Fast food depends on its convenience to the market. Full service restaurants tend to be like GAFO in that they thrive where there is a depth and breadth of restaurant outlets. Full service restaurants are attracted to locations with a lunch and dinner market.

Convenience retail is attracted to locations with excellent access to strong markets. In a market environment like the Northern Development Areas, convenience retail typically serves a market within a three- to seven-minute drive time. Convenience retail requires density far in excess of a couple hundred households or employees.

The market characteristics of home improvement-type stores depend on the store-type. There are generally two store-types: the big box and the small hardware store. The small hardware store tends to locate like convenience retail – close to a strong market. The big box store tends to locate on major arterials that serve a strong and growing market.

### ***Retail Market Findings***

- The Charlottesville Metro Area is ranked 214th among 300 U.S. Metro Areas in terms of population. However, with over \$3.1 billion in total retail sales it ranked 194th in retail sales.
- The distribution of retail sales is not particularly balanced among Charlottesville Metro Area municipalities. In 2005, retail located in Charlottesville and Albemarle County accounted for 90 percent of the Metro Area's retail sales. Fluvanna, Greene, and Nelson counties contained 30 percent of the Metro Area's population, but only 10 percent of its retail sales. The data suggest (and interviews confirm) that residents of Fluvanna, Greene and Nelson counties come to Albemarle County and Charlottesville to shop and dine.
- County growth in both population and real income will generate demand for additional retail space. Albemarle County population and income growth between 2005 and 2015 translates into \$294 million of additional shopping center-inclined retail expenditure potential.
- Applying average sales of between \$250 and \$300 to support a square foot of new shopping center retail, these new projected expenditures translate into between 991,000 and 1.177 million square feet of shopping center retail potential between 2005 and 2015. This potential is based on County growth alone.
- Growth among surrounding Metro Area municipalities will also generate demand for new retail. Given the critical mass of retail in both Charlottesville and Albemarle County, most of this expenditure potential will likely be captured in Charlottesville and Albemarle County.
- Population and real income growth between 2005 and 2015 in the Metro Area outside of Albemarle County (Charlottesville City, Greene, Fluvanna and Nelson counties) will result in \$141.9 million of shopping center-inclined retail potential. Applying average sales of between \$250 and \$300 to support a square foot of new shopping center retail, these new projected expenditures translate into between 473,100 and 567,700 square feet of shopping center retail potential between now and 2015.
- The City of Charlottesville and Albemarle County are expected to capture the vast majority of the nonconvenience store, shopping center-inclined retail expenditure potential derived from the Greene, Fluvanna, and Nelson County growth over the next ten years. Capture rates have been reduced to account for new retail development in Fluvanna, Greene and Nelson counties. Between 2005 and 2015, the City of Charlottesville and Albemarle County have the potential to capture \$384 million of additional retail expenditure from the Metro Area.
- Albemarle County growth and land availability suggest that most of the projected new retail will be built in Albemarle County, not the City of Charlottesville. It is assumed that the City will capture 25 to 35 percent of the eating and drinking expenditure potential because of the Downtown's critical mass of restaurants and its role as an employment center.

### ***Retail Market Conclusions***

- There is significant retail development potential in the County over the next ten years. It is projected that between 1.0 and 1.4 million square feet of retail is supportable in the County between 2005 and 2015. Where this development occurs depends on market factors and public policy. Given Albemarle County's current land use plan, most of this retail development will occur in the Northern Development Areas. From a market perspective, it is an attractive retail investment location because of high traffic volumes and market growth around it.
- Projects under construction and approved rezonings in the Northern Development Areas include approximately 1.07 million square feet of retail. If built over the next ten years, these

approved projects will absorb just over three-quarters of all of the County's retail development potential

## **Office Market Analysis**

Employment growth drives the office market. Private investors develop office space to satisfy increasing demand and/or to address under-supply of particular office types in the existing market. This office market analysis analyzes employment projections among "office-inclined" industries to project office demand. "Office-inclined" industries are:

- Information (such as publishing and telecommunications)
- Financial Activities (such as banking, insurance and real estate)
- Professional and Business Services (such as accountants, lawyers, engineers and management of companies)
- Doctor's offices (not in hospitals)
- Research & Development

Public sector employment is not included because private investors rarely develop office space to house government employees. Government employees are typically housed in buildings that are financed and owned by the government.

## **Office Market Findings**

- In 2004 there were 20,790 [SS: 20,790 seems too low] jobs in office-inclined industries in the Charlottesville Metropolitan Area. These jobs represented 23 percent of the Metro Area's jobs in 2004.
- The industry standard of 250 square feet of office space per employee applied to 2004 office-inclined employment results in a demand for 5.2 million square feet of office space in the Charlottesville Metro Area. This space may be owner-occupied or in rental office space.
- There were 2.94 million square feet of multi-tenant, rental office space in Charlottesville in 2004. Approximately 82 percent of this space was occupied (2.72 million square feet). There was a 7.4% vacancy rate.
- In the Charlottesville Metro Area, rental office space accounts for just over half of the office space potential. This ratio reveals that the Charlottesville rental office market is relatively small compared to the total office market. The Charlottesville office market includes a significant amount of owner-occupied office space.
- The Charlottesville office market area can be broken down into submarkets. The "North" submarket includes the Northern Development Areas. "UVA/Downtown" includes the Downtown and the Fontaine Research Park. The other submarkets are to the east and west of Downtown Charlottesville.
- Employment in office-inclined industries drives office space demand. Charlottesville Metro Area employment among office-inclined industries is projected to increase by 3,350 employees from 2004 to 2010. This represents a growth rate of 1.6 percent per year.
- Between 2010 and 2015, Charlottesville Metro Area employment in office-inclined industries is projected to increase by 2,820 or 2.2 percent per annum. Using the industry standard of 250

square feet per employee, office-inclined employment growth will support 837,500 square feet of additional office space in the Metro Area by 2010 and 1.54 million square feet by 2015.

- Albemarle County captured 88 percent of the employment in the Metro Area between 1995 and 2003. Applying the same capture rate, the County's office potential totals 736,000 square feet between 2003 and 2010. This translates into an average absorption rate of approximately 123,000 square feet per year. So, projected growth among office-inclined industries will support an additional 620,400 square feet between 2010 and 2015.
- Because of their excellent access, central location, commercial character of US 29, and UVA Research Park, the Northern Development Areas are well-positioned to capture office demand from the professional and business service industry.
- With significant residential and employment growth planned, Hollymead will also be an attractive medical office location, as well as attracting finance, insurance, and real estate industry.
- Given the land available in the UVA Research Park, the planned expansion at NGIC and the existing mix of land uses in the Northern Development Areas, it is reasonable to assume that the Northern Development Areas may capture between 55 percent and 65 percent of the County office development potential. Between 2004 and 2015, this amounts to between 746,000 and 881,660 square feet of office space.
- In addition, to the office space demand generated by office-inclined industries, there may be office space demanded by government and other industries.

### ***Office Market Conclusions***

- Office-inclined industries will likely demand between 746,000 and 881,660 square feet of office space in the Northern Development Areas by 2015. In addition, other industries like NGIC may require additional office space. It can be assumed that the market will demand approximately 1 million square feet of office space in the Northern Development Areas by 2015.
- Much of this demand can be accommodated within existing approved Northern Development Areas projects.

### **Industrial Uses**

The Economic Framework and Market Analysis does not cover industrial uses, yet these uses play an important role in the area's economy. Industrial buildings are used primarily for research, development, service, production, storage, and/or distribution of goods. They may or may not include office space. The following presents a brief discussion of the importance and potential for industrial development in Albemarle County.

With some exceptions, industrial uses – small-scale industrial uses in particular – rely on inexpensive properties. At the same time, such uses require access and public services. Where accessible land with public improvements is subject to retail development and related speculation, the cost of property increases and drives potential light industrial development to less expensive locations.

### ***Benefits of Industrial Uses***

In order to sustain its long-term economic growth, Albemarle County must be able to accommodate future growth in industrial activity. Expanding industrial activity provides the following benefits:

Employment –typically at higher wage levels than retail positions;

Diversification of the local economic base, which currently rests primarily on professional/business services, retailing, government, and a wide range of service industries.

New wealth: Industrial businesses typically derive their incomes from external sources; such incomes introduce new wealth into the local economy. Retailing, in contrast, is a “non-basic” industry, which typically attracts local spending rather than exporting products or services.

Supplies and services to existing businesses: All existing businesses require basic supplies and services (e.g., printing, furnishings, machinery). Local sources for such suppliers and services thus contribute to the environment for existing businesses. In addition, businesses involved in professional services such as research and development, scientific testing, and health care often generate patents, which in turn offer the potential for production functions, which must find accommodations in industrial properties.

Potential: While most small businesses remain small, some grow into substantial economic assets. This potential reflects business life cycles of expansion and contraction.

Demand for light industrial space in Albemarle County will continue. Light industrial space can be used for research and development, office, lab, retail, and light manufacturing, as well as showroom space. The planning process must identify locations in the Northern Development Areas to accommodate flex industrial buildings. Flex industrial is designed to allow its occupants flexibility in use and size of space for each tenant.

### ***Industrial Uses—Findings***

- From a long-term perspective, the market for light industrial space offers significant development potential. This potential is derived from local employment patterns.
- The County economy is growing. Employment growth in professional services, retail trade, health care/social assistance, accommodation/food services, and government sectors have more than offset a persistent and marked decline in manufacturing employment. Ongoing growth projected for these sectors is expected to continue.
- While the County’s growth sectors are oriented primarily toward office rather than industrial space, many businesses seek relatively inexpensive buildings with wide, flat floor expanses, rather than more highly finished office buildings. Such businesses include call centers and back office service providers, engineering companies, design-related companies, laboratories for research, development, testing, and so on. Of perhaps greater importance, professional services relating to engineering, research, testing, and other such activities may generate new patents and new products, which will require production facilities in new industrial properties.
- Sole proprietors, partnerships, and corporations that do not employ workers provide another important indicator of industrial development potential. These nonemployers typically conduct business in home locations or in old, small, inexpensive spaces. As they grow, many

such businesses hire employees and seek to upgrade their business space – often to small office, industrial, or “flex” spaces.

- In Albemarle County, from 2000 to 2003 (most recent data available), growth among nonemployer businesses has proceeded at an annualized rate of 8.1 percent, far exceeding growth rates in overall covered employment. More important, such businesses’ gross receipts have grown even more rapidly, at 11.6 percent. This strong performance may indicate a possible demand for additional growth – with eventual conversions to “employer” businesses seeking new space.

### ***Industrial Uses—Conclusion***

- Such businesses are an important component of future economic development in Albemarle County; the County must maintain its ability to accommodate and retain such assets.