

FACTORS INFLUENCING GROWTH

Many factors influence the future utilization of land and the intensity and nature of development within Henderson County. Physiographic and infrastructural factors are linked directly to the county's capacity to withstand development. Among these, natural factors include flooding limitations, topographic characteristics, soil limitations, climate, and the presence of sensitive natural characteristics that warrant protection or preservation. Other factors include existing land uses, ownership patterns, water and sewer capacity, and the transportation system. This element inventories and briefly describes a number of the key factors influencing growth in Henderson County.

Areas Subject to Flooding

A floodplain is lowland area adjoining the channel of a river, stream, or watercourse, or an ocean, lake, or other body of standing water which may be inundated by floodwater. The channel of a stream or watercourse is part of the floodplain.

Map # 2 *Floodplains and Floodways* (Appendix I) shows the areas susceptible to floods of 100-year and 500-year magnitude as shown on Federal Flood Insurance Rate (FIRM) maps prepared by the Federal Emergency Management Agency's National Flood Insurance Program in the early 1980s. The map also shows the floodway areas within the floodplain as shown on Flood Boundary and Floodway (Floodways) maps prepared by the Federal Emergency Management Agency (FEMA).

For most waterways, the floodway is where the water is likely to be deepest and fastest. It is the area of the floodplain that should be reserved (kept free of obstructions) to allow floodwaters to move downstream. Placing fill or buildings in a floodway may block the flow of water and increase flood heights.

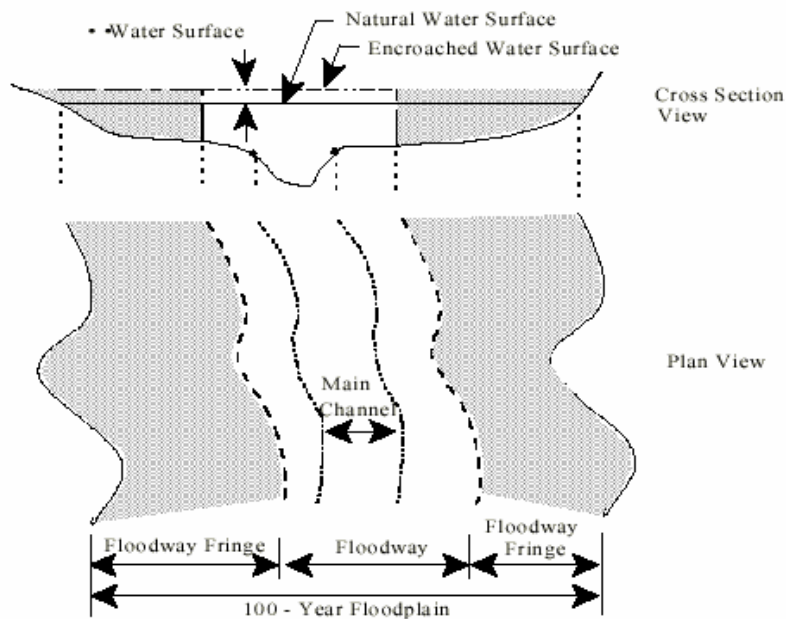
A 100-year flood is a flood that has a 1% chance of being equaled or exceeded in any given year. The area inundated during a 100-year flood is sometimes called the 100-year floodplain. The term "100-year flood" is misleading. It is not the flood that will occur once every 100 years. Rather, it is the flood elevation that has a 1- percent chance of being equaled or exceeded each year. Thus, the 100-year flood could occur more than once in a relatively short period of time. The 100-year flood, which is the standard used by most Federal and state agencies, is used by the National Flood Insurance Program (NFIP) as the standard for floodplain management and to determine the need for flood insurance. According to FEMA, a structure located within the 100-year floodplain, as

shown on an NFIP map, has a 26% chance of suffering flood damage during the term of a 30-year mortgage.

Areas in the 500-year floodplain have a 0.2% (1 in 500) of being flooded in a given year. Areas in the 100-year floodplain are included in the 500-year floodplain.

Floodplains serve a valuable role in the absorption of floodwaters. Natural floodplains that are amply vegetated and clear of manmade obstructions serve an important role by allowing floodwaters to spread across their extent. This spreading action, coupled with the friction provided by natural vegetation, reduces the velocity and force of floodwaters, as well as allowing the floodplain to absorb some of the volume.

While most of the streams in Henderson County are not shown as flood-prone on FEMA FIRM mapping, it should be noted that all streams are, in fact, susceptible to flooding. Small streams and watercourses within urban and steep mountainous terrain, in particular, are prone to intermittent flash flooding, and they can pose significant safety hazards and cause property damage despite their small size.



The City of Hendersonville and the Town of Fletcher participate in the National Flood Insurance Program and administer local floodplain management programs within their corporate limits and extraterritorial jurisdictions. Henderson County and the other municipalities within the county do not participate in the National Flood Insurance Program at this time.

Figure F.1 Floodplain Diagram

Slope

Map # 3 *Percent Slope* (Appendix I) illustrates the topographic characteristics of land in Henderson County in terms of the percent slope of the land. Four slope categories are used:

- 0-4%
- 5-9%
- 10-19%
- 20% and greater

The categories correlate closely with the capacities of these areas to withstand development. Most of the flood-prone areas of the county are in the 0-4% category. Correlations can also be made between land slope and the location of many sensitive natural areas and important scenic vistas, including protected mountain ridges.

Soils

Map #4 the *General Soil Map* (Appendix I), which was prepared by the United States Department of Agriculture, shows the general location of five associations of soils in Henderson County. Each association contains more than one specific soil type. There are approximately 50 different soil types in Henderson County.

The General Soil map and the Percent Slope map show similar general slope characteristics. For example, there is a strong correlation between mapped flood-prone areas and hydric soils. Hydric soils in Henderson County include Hatboro loam, Kinkora loam, and Toxaway silt loam.

Existing Land Use

Map #5 *Current General Land Use* (including Map #6 *Current General Land Use I-26 Corridor Inset*, Appendix I) categorizes land in Henderson County according to 10 general classifications.

- Agriculture/Horticulture/
Forestland
- Commercial
- Community/Cultural
- Industrial
- Public/Private Conservation
- Recreation
- Residential
- Surface Water
- Transportation/Utility
- Undeveloped

The land use classifications are based in part on land use codes assigned to parcels by the County Assessor's office. The Henderson County Planning Department has made some modifications to the categories to suit general planning purposes.

Because of the structure of the data, each parcel in the county is assigned a land use code based on the *principal* use of the land. Other secondary land uses that may be present on a given parcel are not depicted on this map.

The land use classifications used on the *Current General Land Use* map and inset are summarized in Appendix IV, Glossary, Current Land Use Definitions.

Current land use characteristics in Henderson County are shown in figures F.2 through F.4, below.

Figure F.2 Current Land Use		
Land Use	Number of Acres	% Co. Acreage Per Land Use Category
Agriculture-Horticulture	20,043.11	8.35%
Commercial	3,086.37	1.29%
Community-Cultural	4,076.64	1.70%
Forestland-Conserved	28,927.61	12.05%
Industrial	1,546.59	0.64%
Recreation	4,807.28	2.00%
Residential	43,251.94	18.01%
Surface Water	303.48	0.13%
Transportation-Utility	803.39	0.33%
Undeveloped	121,182.87	50.47%
Total*	240,099.79	94.97%

*Note: Land use totals do not represent property such as select road right-of-ways, accounting for the discrepancies in total acreage and percent acreage.

Figure F.2 summarizes existing land use conditions in Henderson County, both in terms of the total number of acres dedicated to each land use category and in terms of the percentage of total acres in each land use category. For example, less than 1% of Henderson County's acreage is used for industrial purposes, while 18% is used for residential purposes and approximately 12% is under some form of conservation.

Land Use	Blue Ridge	Clear Creek	Crab Creek	Edneyville	Green River	Hendersonville	Hoopers Creek	Mills River	Total
Agriculture-Horticulture	2,449.05	1,728.43	1,077.64	4,376.00	1,095.72	1,727.84	2,602.63	4,985.79	20,043.11
Commercial	238.12	85.30	6.71	222.65	79.15	1,525.93	724.43	204.01	3,086.30
Community-Cultural	191.49	162.86	56.86	98.75	84.17	2,124.83	885.88	471.79	4,076.64
Forestland-Conserved	1,791.55	0.00	4,641.09	599.60	2,841.66	254.28	0.00	18,799.11	28,927.29
Industrial	67.74	12.32	5.17	13.72	10.75	572.88	716.98	147.04	1,546.59
Recreation	149.70	0.00	1,631.25	29.70	559.63	1,635.46	264.18	537.36	4,807.28
Residential	5,265.82	2,085.63	3,681.02	3,466.28	4,121.38	14,727.68	3,855.11	6,049.01	43,251.94
Surface Water	0.00	0.00	0.00	0.00	303.48	0.00	0.00	0.00	303.48
Transportation-Utility	6.59	0.00	31.84	32.71	104.98	137.97	102.30	387.00	803.39
Undeveloped	12,662.12	5,919.98	14,691.12	22,542.34	25,681.74	14,273.99	9,736.40	15,670.24	121,177.94
Total Township Acres	22,822.19	9,994.52	25,822.71	31,381.78	34,882.64	36,980.86	18,887.91	47,251.35	240,099.79*

*Note: Land use totals do not represent property such as select road right-of-ways, accounting for the discrepancies in total acreage.

Figure F.3 summarizes the land use composition of each Henderson County township. For example, Blue Ridge Township contains a total of 22,822.19 acres. Of these, 67.74 acres are used for industrial purposes and 5,265.82 acres are used for residential purposes.

Land Use	Blue Ridge	Clear Creek	Crab Creek	Edneyville	Green River	Hendersonville	Hoopers Creek	Mills River	% Co. Acreage per Land Use Category
Agriculture-Horticulture	10.27%	16.70%	4.03%	13.50%	2.99%	4.24%	12.96%	10.11%	8.35%
Commercial	1.00%	0.82%	0.03%	0.69%	0.22%	3.75%	3.61%	0.41%	1.29%
Community-Cultural	0.80%	1.57%	0.21%	0.30%	0.23%	5.22%	4.41%	0.96%	1.70%
Forestland-Conserved	7.51%	0.00%	17.36%	1.85%	7.76%	0.62%	0.00%	38.10%	12.05%
Industrial	0.28%	0.12%	0.02%	0.04%	0.03%	1.41%	3.57%	0.30%	0.64%
Recreation	0.63%	0.00%	6.10%	0.09%	1.53%	4.01%	1.32%	1.09%	2.00%
Residential	22.07%	20.15%	13.77%	10.70%	11.26%	36.15%	19.20%	12.26%	18.01%
Surface Water	0.00%	0.00%	0.00%	0.00%	0.83%	0.00%	0.00%	0.00%	0.13%
Transportation-Utility	0.03%	0.00%	0.12%	0.10%	0.29%	0.34%	0.51%	0.78%	0.33%
Undeveloped	53.07%	57.19%	54.94%	69.56%	70.16%	35.04%	48.50%	31.76%	50.47%

Note: Land use totals do not represent property such as select road right-of-ways, accounting for the discrepancies in percent total acreage.

Figure F.4 explains the percentage of each Henderson County township dedicated to each land use category. For example, Blue Ridge Township contains a total of 22,822.19 acres, of which 0.28% is used for industrial purposes, while 22.07% of Blue Ridge Township is used for residential purposes. In comparison, 0.30% of the Mills River Township is used for industrial purposes, while 12.26% is used for residential purposes.

The *Land Use Trends* element in Section 3 of this Comprehensive Plan illustrates historical land use trends in Henderson County.

Agricultural Districts

Map #7 *Agricultural Districts* (Appendix I) depicts lands that are enrolled in the Henderson County Farmland Preservation Program.

The Farmland Preservation Program (hereinafter, the “Program”) was established through the Henderson County Voluntary Farmland Preservation Program Ordinance adopted in 1991. The purpose of the Program is to “encourage the voluntary preservation and protection of farmland from non-farm development, recognizing the importance of agriculture to the economic and cultural life of the county.”

The Program allows landowners with farms meeting certain criteria to join legally designated agricultural districts which are mapped and posted with signs. The Program does not regulate development within Agricultural Districts in any way. However, the Program does serve to provide notice to the community that active farming takes place in certain areas of the county by requiring notations on subdivision and planned unit development plats regarding the proximity of such a district. The Program is managed by the Henderson County Agricultural Advisory Board.

The *Land Use Trends* element in Section 3 of this Comprehensive Plan illustrates historic trends in agricultural land use in Henderson County.

Industrial Development Zones

Map #8 “Committee of 100” *Recommended Industrial Development Zones* (Appendix I) depicts areas that the Committee of 100 of the Greater Hendersonville Chamber of Commerce identified as potential industrial areas (hereafter, “Industrial Zones”) at the request of Henderson County Board of Commissioners. The Committee of 100 recommended these potential industrial zones to the Board of Commissioners on October 17, 2001.

The proposed industrial zones are mainly concentrated along the I-26/US 25 corridor. Other sites are located in the Mills River and Fletcher areas and along US Highway 176.

The proposed industrial zones include both properties currently occupied by industry, and sites that are that are being marketed for new industrial development, as well as other areas that meet certain criteria that are important to attracting new industry.

Please see Appendix III, *Proposed Industrial Site Criteria* for the criteria used by the Committee of 100 to identify proposed future industrial zones.

In recommending the potential sites, the Committee of 100 considered a 10-15 year time frame. Identified sites are intended to be general in nature, and are not parcel specific.

Sensitive Natural Areas

Map #9 *Sensitive Natural Areas* (Appendix I) shows Natural Heritage Inventory sites, protected mountain ridges, and floodplains and floodways, all of which are features that may be negatively impacted by certain development activities.

Natural Heritage Inventory Sites are “natural areas” as identified in a document titled *Natural Areas of Henderson County: A Preliminary Inventory of the Natural Areas of Henderson County, North Carolina*, (hereinafter, the “Natural Heritage Inventory” or the “Inventory”). The Natural Heritage Inventory was completed in early 1994 by L. L. Gaddy, Ph.D., Consulting Biologist. The Inventory is not intended to provide a full listing of all “natural areas” in Henderson County.

According to the North Carolina Natural Heritage Program, “a natural area is an area of land, water, or both land and water that retains or has reestablished its natural character and may contain rare plants, rare animals or their habitats, or contains examples of rare or high quality natural communities.” The natural areas shown on the map have been grouped into four categories of significance: National, State, Regional and Local.

Natural heritage inventories are used to assist government agencies, land conservancy organizations, and others with identifying significant natural areas within a study area.

Per the Henderson County Subdivision Ordinance, a landowner intending to develop more than 10 lots must identify any unique natural areas on the sketch plan that is discussed with staff during a pre-planning conference. The Ordinance defines “a unique natural area” as an area that has features sensitive to development and which is listed in the Natural Heritage Inventory. The Ordinance also acknowledges that unique natural areas may not be suitable for dense development.

Under the Henderson County Zoning Ordinance, establishments requiring a special use permit must be located and developed so as to minimize the impacts on unique natural areas. In the Zoning Ordinance, a “unique natural area” is defined as “An area that meets the criteria for qualification as a natural heritage area as prescribed in Chapter 15A-12G, Section .0202 of the North Carolina Administrative Code.” This definition does not limit unique natural areas to those in the Inventory for Henderson County.

Protected Mountain Ridges

In 1983, Henderson County adopted provisions of North Carolina General Statute 113A-205-448, known as the “Mountain Ridge Protection Act” (hereinafter, the “Act”) and chose to apply the regulations to mountain ridges with an elevation of 500 feet or more above the valley floor. The regulated portion of the ridge is the area within 100 feet below the elevation of the crest of the mountain.

The Act prohibits “tall buildings or structures” on protected mountain ridges. A “tall building or structure” has a vertical height of more than 40 feet measured from the top of the foundation to its highest point. The Act includes provisions for when one must include part of the height of the foundation in the building height. Tall buildings or structures may not protrude above the crest of the ridge by more than 35 feet. Certain structures and building projections are not regulated under the Act, including towers for communications, electricity, telephone, TV, and radio; structures such as chimneys, spires, steeples, and antennas; and structures designated as National Historic Sites.

Some Henderson County ordinances contain additional regulations pertaining to protected mountain ridges, including the Communications Tower Ordinance (which regulates the height of towers on protected mountain ridges) and the Zoning Ordinance (which prohibits certain uses in the Open Use District from locating on protected mountain ridges).

Publicly Owned Lands

As illustrated in Figures F.5 and F.6, below, 65% of public land is owned by the Federal government, 26% is owned by the State of North Carolina and 7% is owned by local government.

On the one hand, publicly held lands can be considered an impediment to physical growth since publicly held lands are generally permanently removed from the development market. On the other hand, publicly held lands offer rich recreational

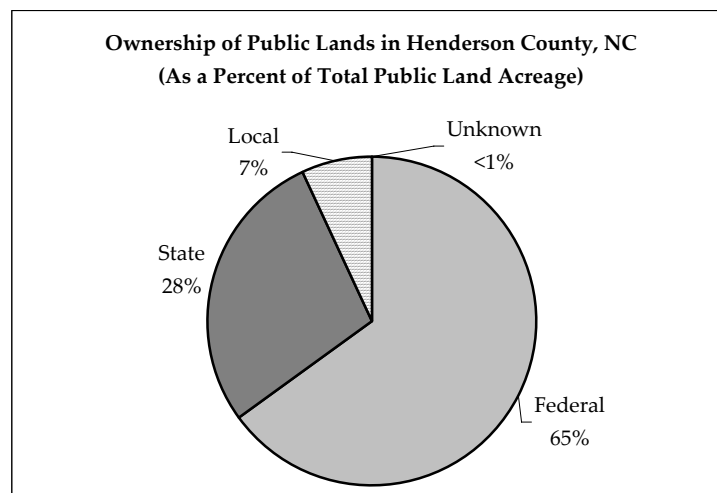
opportunities, contain valuable natural resources, contribute to the recharge of local water supplies, and provide other valuable services. Publicly held lands, therefore, generate economic growth and wealth by contributing to a high quality of life, which in turn attracts tourists, businesses, and residents to the area. As an example, Figure ET.7 (see Section 02: *Economic Trends*) indicates that in 1999, 22% of the individuals who visited western North Carolina came to experience National or State Parks, and 19% came to visit museums and historic sites. Tourism in general contributed \$161 million dollars to the county's economy in 2002.

Figure F.5 Publicly Owned Lands

Ownership	Acres	Percent of Total Acres
Federal	19,091.17	65.06%
State	8,208.77	27.98%
County	1,121.80	3.82%
Asheville	476.96	1.63%
Hendersonville	304.47	1.04%
Fletcher	62.50	0.21%
Laurel Park	26.82	0.09%
Saluda	20.38	0.07%
Greenville	15.71	0.05%
Local	13.38	0.05%
Total	29,341.95	100.00%

Source: Henderson County Assessor's Data

Figure F.6 Ownership of Public Lands



Source: Henderson County Land Records
Henderson County Planning Department 2002

Sewer Services

The following is a general overview of the sewer services in Henderson County.

- Map #11 *Sewer Service Areas and Districts* (Appendix I) shows sewer service areas, sewer districts, and major sewer lines as well as wastewater treatment plants in Henderson County. Sewer service areas are general areas in which sewer service is currently available. Sewer districts represent areas of general future serviceability.
- The Mud Creek Sewer Boundary was developed through an agreement between Henderson County and the City of Hendersonville as part of the sale of the Mud Creek Sewer District by the County to the City. It represents a realignment of the former Mud Creek Sewer District to encompass areas that drain to the City of Hendersonville wastewater treatment plant.
- Wastewater from the Cane Creek Water and Sewerage District flows into an interceptor owned by the Metropolitan Sewerage District (MSD) in Buncombe County. The wastewater is transported via the MSD line to a treatment facility north of Asheville.
- The City of Hendersonville is the largest sewer service provider in the county, with 6,350 users, of which 1,300 users, or 20.5%, are located outside of the City's municipal jurisdiction.
- The Cane Creek Water and Sewer District provides sewer service within its boundaries in the northern portion of the county, including the Town of Fletcher.
- The Metropolitan Sewerage District (MSD), which is the regional service provider for Buncombe County and Asheville, owns certain interceptor facilities and provides treatment service for effluent originating within the boundaries of the Cane Creek Water and Sewer District.
- The City of Saluda provides sewer service within its municipal jurisdiction, of which only a small portion is in Henderson County.
- According to the North Carolina Department of Environment and Natural Resources staff, at present there are 29 permitted private wastewater treatment facilities (WWTF) in operation within the county.

Water Service

The following is a general overview of the water services in Henderson County.

- Map #10 *Water Service Areas* (Appendix I) shows generalized areas where water service is available in Henderson County as well as the locations of water treatment plants and water tanks, and water service providers.
- The City of Hendersonville provides water service inside and outside of its jurisdiction, including service within the municipalities of Fletcher and Flat Rock.
- The City of Hendersonville is the principal regional water provider within Henderson County, serving approximately 99% of existing water customers, or approximately 20,500 users.
- 14,650 users, or 71%, are located outside of the City of Hendersonville’s municipal jurisdiction.
- Hendersonville draws its water from reservoirs in the Pisgah National Forest and from the Mills River.
- The Town of Laurel Park provides water service within its municipal jurisdiction.
- A small number of residents of the newly incorporated Town of Mills River have water service provided by the City of Hendersonville.
- The Asheville Buncombe Henderson Regional Water Authority (ABHWA) provides water to several commercial, industrial, and institutional customers within the Cane Creek Water and Sewer District in the vicinity of the Asheville Regional Airport and the N.C. 280 corridor. ABHWA draws its water from the Mills River just downstream from Hendersonville’s facility. ABHWA intends to begin drawing from the French Broad River in coming years. At the same time, discussions are ongoing as to the need to keep the plant in operation.
- The City of Saluda provides water and sewer services within its municipal jurisdiction, of which only a small portion is in Henderson County, as well as providing water service outside of its boundaries in the Lake Summit area.

Transportation

Map #12 *Transportation* (Appendix I) shows the major roads, railroad lines, and airports serving Henderson County.

The principal north-south routes are Interstate 26, U.S. Highways 25 and 176, and N.C. 191. The major east-west highways are U.S. Highway 64 and NC 280. One north-south rail linkage exists in the county. In addition to the Asheville Regional Airport, there is one small private airport operating in Henderson County.

Fixed route bus service for public transit began in Henderson County in 2002 and is being funded for a third year by the State. Current ridership exceeds 1,500 passenger trips weekly.

Educational Facilities and Libraries

Figure F.7 Public Primary and Secondary Schools	
Elementary K-5	Middle 6-8
Atkinson Elementary	Apple Valley Middle
Bruce Drysdale Elementary	Flat Rock
Clear Creek Elementary	Hendersonville Middle
Dana Elementary	Rugby Middle
Edneyville Elementary	High 9-12
Etowah Elementary	East Henderson
Fletcher Elementary	Hendersonville
Hendersonville Elementary	North Henderson
Hillandale Elementary	West Henderson
Marlow Elementary	*Alternative K-8
Mills River Elementary	Mountain Community
Upward Elementary	

Map #13 *Educational Facilities and Libraries* (Appendix I) shows public and private schools (excluding home schools) in Henderson County as well as the public library branches.

Figure F.7 demonstrates that there are currently 21 public primary and secondary schools in Henderson County and 1 alternative public school*.

Figure F.8 Private Primary and Secondary Schools	
School Name	Grade Levels
Captain Gilmer School & Fletcher Academy	K-12
Faith Christian Day School	K-12
Heritage Hall	K-12
Pathway Christian Academy	K-12
Flat Rock Country Day School	Ages 3-14
Hutch Mountain School	3-7
Immaculata Catholic School	K-8
Upward SDA Church School	K-9
Veritas Christian Academy	K-9

There are 9 private primary and secondary schools in Henderson County as illustrated by Figure F.8.

The county hosts two institutions for higher education: Blue Ridge Community College and Fruitland Baptist Bible Institute.

The main branch of the Henderson County Public Library is located in the City of Hendersonville. Other branches are located in the Town of Fletcher and in the Etowah, Edneyville, and Green River communities.

National Historic Sites and Districts

Map #14 *National Historic Sites and Districts* (Appendix I) shows districts and individual properties listed on the National Register of Historic Places (hereinafter, the “National Register”).

According to information from the North Carolina State Historic Preservation Office, the National Register is an official listing of “buildings, structures, objects, sites, and districts worthy of preservation for their significance in American history, architecture, archaeology, and culture.” The National Register was established by the National Historic Preservation Act of 1966, the purpose of which is “to ensure that as a matter of public policy, properties significant in national, state, and local history are considered in the planning of federal undertakings, and to encourage historic preservation initiatives by state and local governments and the private sector.”

In and of itself, the listing of a property on National Register does not necessarily restrict the use, alteration, or maintenance unless federal funding or licensing is used for work on the property or the property owner benefits from incentives available to National Register properties such as grants, loans, tax credits, etc.

Properties listed on the National Register may or may not be designated by local historic preservation commissions and governing bodies.

Cemeteries

Map #15 *Cemeteries* (Appendix I) shows cemeteries existing in Henderson County. Some private or family cemeteries may not be listed on the map. There are currently 73 public and private cemeteries listed on the map. See Appendix III for a list of cemeteries.

Public Parks, Recreation Sites, and Proposed Greenways

Map #16 *Public Parks, Recreation Sites, and Proposed Greenways* (Appendix I) shows the distribution of parks and recreation sites in Henderson County that are owned and managed by federal, state, and local governments. Most of the acreage in public parks and recreation in Henderson County is owned by federal and state government.

Some very small public parks and recreation sites are not shown because the parcels are too small to be visible at the map scale used. Henderson County currently has approximately 10 greenway miles within its borders, including the county’s Oklawaha Greenway and the Hoopers Creek Greenway in Fletcher. The Hoopers Creek project is presently in the planning phase, while the first section of the Oklawaha Greenway is to be completed in April 2004. Recently the Village of Flat Rock began implementation of its Greenways Master Plan with the construction of a sidewalk adjacent to U.S. 25 South in the downtown area.

PAGE LEFT INTENTIONALLY BLANK