

## SECTION 3: DANA COMMUNITY PLAN

### 3.1: NATURAL AND CULTURAL RESOURCES

#### Sensitive Water Resources

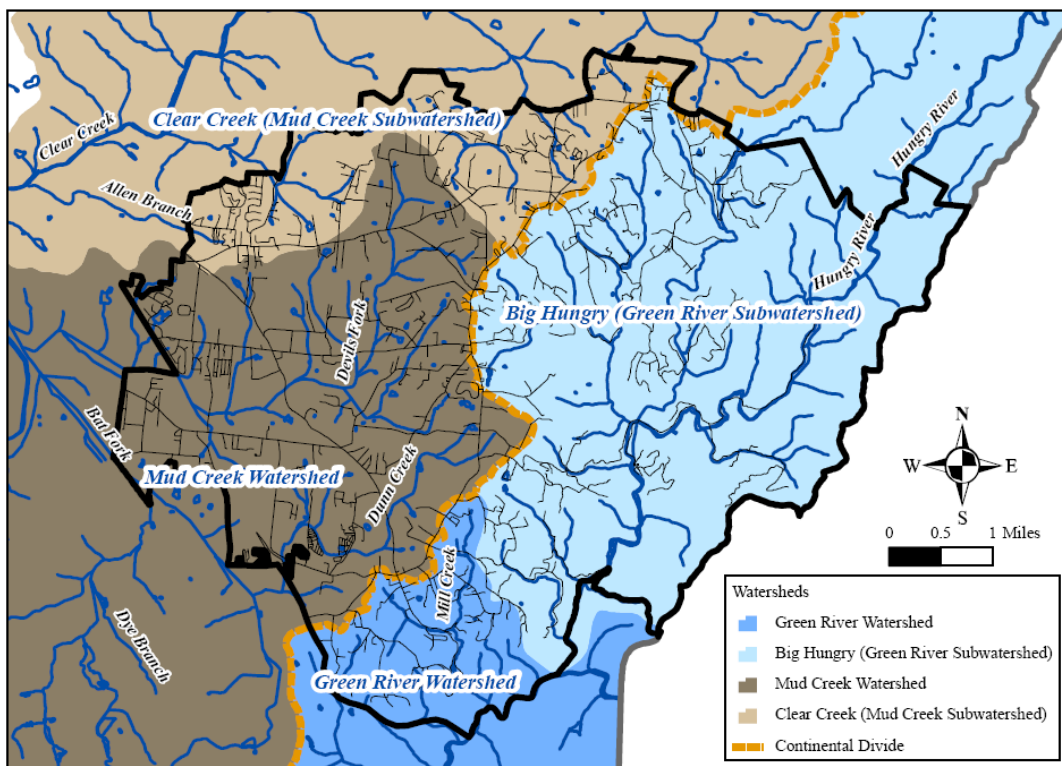
**River Basins and Watersheds.** The Eastern Continental Divide (ECD) is the boundary which separates the Gulf of Mexico and Gulf of St. Lawrence drainage basins from the drainage basins that flow directly into the Atlantic Ocean. Until 1763, the official end of the Seven Years' War (French and Indian War), the ECD represented the boundary between British and French colonial possessions. Those lands to the west of the ECD, claimed by the French, were lost to the British in the war.

The ECD passes through the County and Planning Area (See Map 2, Sensitive Natural Areas (Pg. 61)). This boundary separates two river basins (the land surface drained by streams and creeks flowing into one another, eventually into a single large river). The Planning Area consists of 11,408 acres (54.85%) in the Broad River Basin and 9,391 acres (45.15%) in the French Broad River Basin.

The French Broad River Basin includes the Mud Creek Watershed. This is the most heavily developed watershed located entirely within the County, resulting in degraded streams and poor water quality (See Figure 3.1.1). The Mud Creek Watershed Restoration Project, currently underway, is intended to restore these degraded streams and improve water quality.

The Broad River Basin includes the Green River Watershed. The Green River Watershed is a heavily forested watershed with excellent water quality and healthy streams (See Figure 3.1.1).

**Figure 3.1.1. Planning Area Watersheds**



**Stream Classifications.** The US Clean Water Act (specifically Section 303(d)) requires states list waters that do not meet established quality standards. Devil's Fork and Bat Fork Creeks, part of the degraded Mud Creek Watershed, appear on the North Carolina Division of Water Quality's (NCDWQ)

2006 list of North Carolina Impaired Waters (Published June 19, 2007) (See Map 2, Sensitive Natural Areas (Pg. 61)).

Devil's Fork and Bat Fork Creeks were first classified in 1998 due to the poor health of their biological communities. Both creeks exhibit higher turbidity and total suspended solids than other creeks within the County. Nitrate, nitrite, and nitrogen concentrations are much higher than any other sites monitored in the County, and are more than double the regional average median concentrations. Animal waste, fertilizer runoff, and urban runoff are likely affecting the nitrogen concentrations in these creeks. According to the Volunteer Water Information Network (VWIN), which monitors sites on both creeks, water quality has been improving in these streams in recent years.



View of an unnamed tributary of Devil's Fork Creek, looking south from Old Dana Road. Devil's Fork Creek is an impaired stream.

Streams become degraded by altering the stream and surrounding area (removal of riparian vegetation, channelization, dikes, and other alterations); and adding contaminants to the stream including sediment (from disturbed stream banks, unpaved roads, and others), polluted stormwater runoff (primarily in more urbanized areas), wastewater discharges, potential hazardous spills, pesticides, and stream access by livestock.

NCDWQ also classifies streams based on their ability to support trout propagation and survival on a year-round basis (known as "Trout Waters"). There are 94.7 miles of perennial streams in the Planning Area and 26.5 miles are classified as trout waters (27.98% of streams). These streams include all or portions of the following: Little Hungry, Hungry and Green River; Coon, Hill, and Jones Branch; and Beck, Henderson, Mill, Saconon, and Tumblebug Creeks. The Trout Waters classification protects these streams by applying more stringent water quality standards.

The Soil Erosion and Sedimentation Control Regulations of Chapter 200A, Land Development Code (hereinafter "LDC"), limit land-disturbing activities within 25 feet of classified trout waters. Certain exclusions to these restrictions apply including agriculture, foresting/timbering, and any land disturbing activity over which the State has exclusive regulatory jurisdiction.

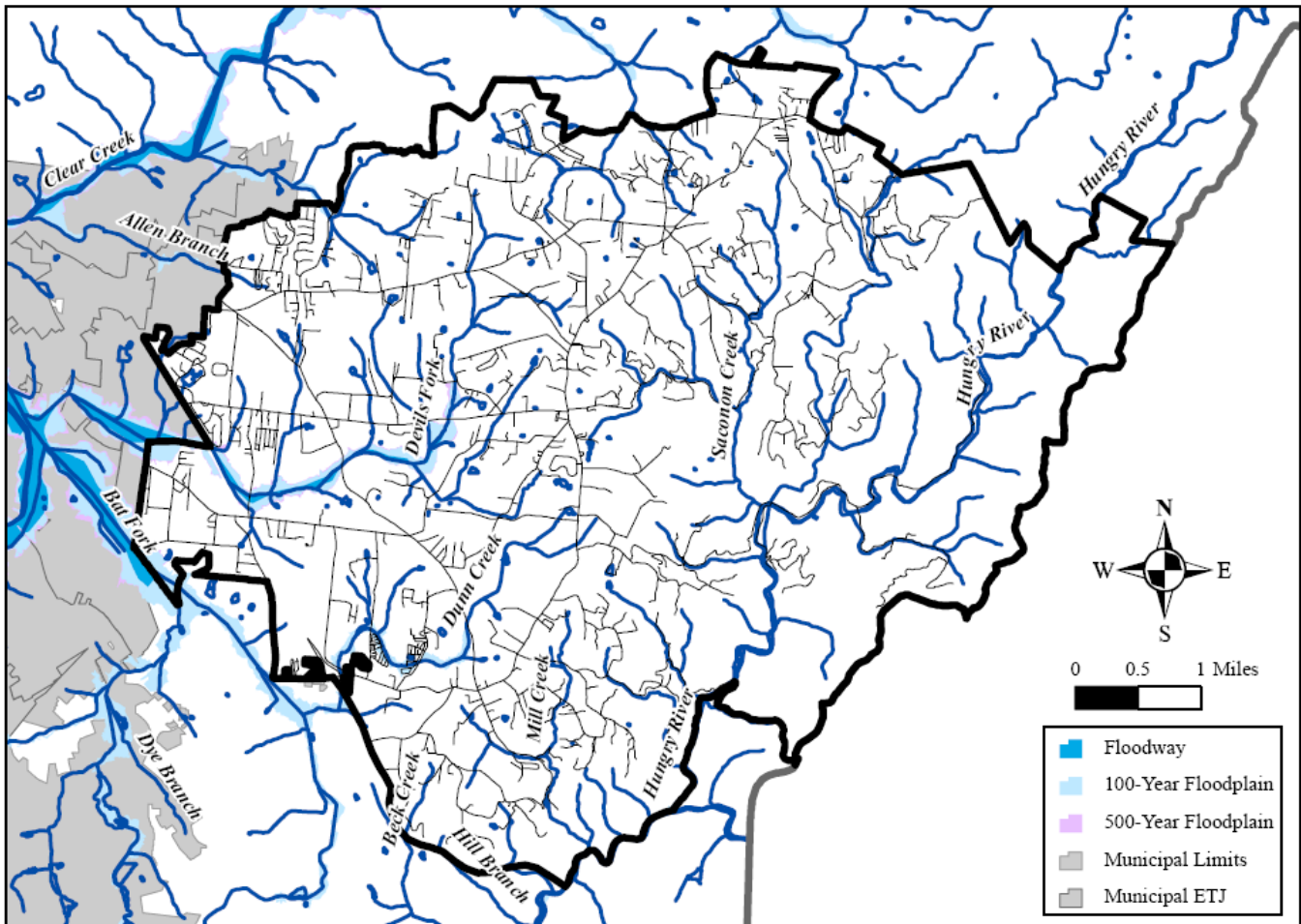
Even with protective measures, sedimentation and the resulting increased turbidity (the measurement of the visual clarity of a water sample) remain a particular concern in trout waters. Trout eggs can withstand only small amounts of silt before the likelihood of hatching is greatly reduced.

**Flood Lands.** Planning Area floodplains and floodway are principally located around Devils Fork Creek and Dunn Creek (in the western portion of the Planning Area). A floodway includes the stream channel and the adjacent areas that carry the deepest and fastest waters associated with a flood event. A 100-year floodplain is defined as having a 1% chance of flooding in a given year while the 500-year floodplain is defined as having a 0.2% chance of flooding in a given year. Approximately 1.74% of the Planning Area falls within flood lands (See Table 3.1.1 and Figure 3.1.2).

Table 3.1.1. Planning Area Flood Lands			
Flood Designation	Total Acreage	Percent of	
		Planning Area (%)	County Flood Lands (%)
Floodway	57.19	0.28	1.48
100-Year Floodplain	271.06	1.30	4.83
500-Year Floodplain	33.36	0.16	4.87
<b>Total</b>	<b>361.61</b>	<b>1.74</b>	<b>3.56</b>

Source: Henderson County Flood Damage Prevention data (2009).

Figure 3.1.2. Planning Area Flood Lands



The Flood Damage Prevention regulations of the LDC: (1) do not restrict development in the 500-year floodplain, (2) limit development in the 100-year floodplain (in terms of fill and structure elevation), and (3) prohibit fill or placement of structures in the floodway.

**Wetlands.** Wetlands are defined by soil saturation and plant and animal life. Wetlands include swamps, marshes, and bogs. The Planning Area contains approximately 67.13 acres of palustrine wetlands (dominated by trees, shrubs, persistent emergents (species that remain standing during the period between growing seasons), emergent mosses, or lichens). These wetlands contain a number of grasslike plants (cattails, bulrushes, saw grass, sedges) and true grasses (reed, manna grasses, slough grass, and whitetop) (See Map 2, Sensitive Natural Areas (Pg. 61)).

**Trends.** The Planning Area contains significant water resources but water quality is threatened. Fertilizers/pesticides, livestock waste, sediment, stormwater, and wastewater are increasingly entering streams because of land development/use practices. Each of these substances degrades water quality. Fertilizers and pesticides cause algae overgrowth, increased cloudiness, and fish kills. Livestock wastes introduce additional nutrients, bacteria, and pathogens. Sediment, the principal pollutant of North Carolina streams, buries aquatic organisms and blocks light to aquatic plants, clogs fish gills, and reduces water clarity. Stormwater and wastewater add more nutrients, bacteria, pathogens, and chemicals.

Developing land can also substantially degrade water quality. Development typically increases impervious surfaces resulting in increased stormwater entering streams and increased flood events. Development that alters stream courses, reduces or removes vegetation, and fills or modifies flood lands can: (1) reduce the ability of a stream to accommodate the increased velocity and force of floodwaters, (2) damage streambanks, (3) result in scouring or sediment loading of the stream; and (4) result in flooding events that last longer and cover larger areas of bottomland.

The cumulative impact of existing practices and new development pressure will continue to degrade Planning Area water quality. As development continues, monitoring and protecting the quality and quantity of water resources in the Planning Area will be essential to prevent further degradation or depletion of water resources.

***Sensitive Land Resources and Protected Species***

**Protected Mountain Ridges and Steep Slopes.** Protected mountain ridges and steeply sloping lands are primarily located in the eastern portion of the Planning Area. The North Carolina General Assembly authorized the Protected Mountain Ridge regulations of the LDC. These regulations apply to all mountain ridges whose elevation is 500 or more feet above the elevation of an adjacent valley floor (See Map 2, Sensitive Natural Areas (Pg. 61)). Structures located on a protected mountain ridge cannot have a vertical height of more than 40 feet (measured from the top of the foundation) and cannot protrude at its uppermost point above the crest of the ridge by more than 35 feet.

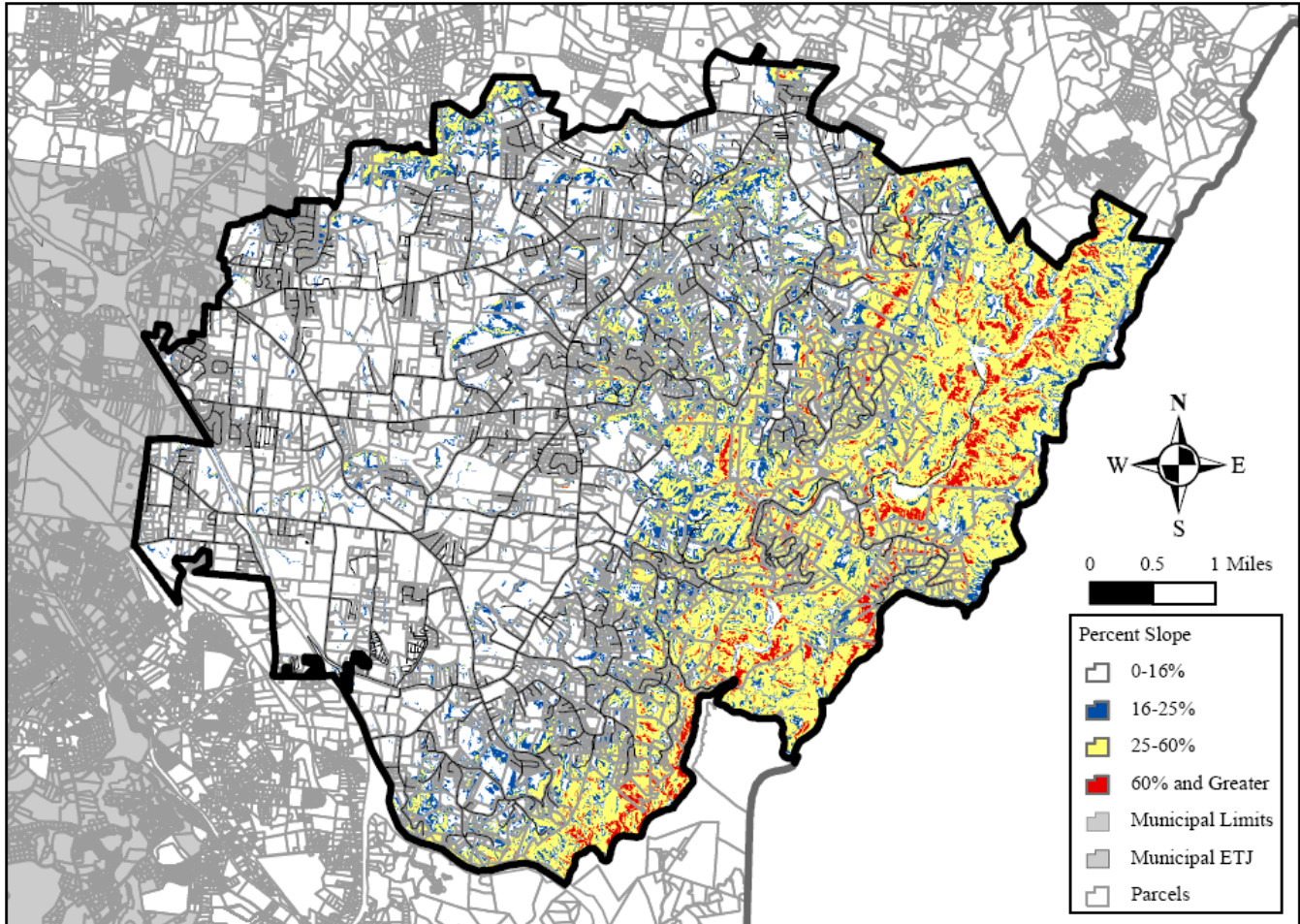
The Planning Area also contains steep slopes (See Table 3.1.2 and Figure 3.1.3). The LDC reduces density by one-half (½) for those portions of a tract with a slope of 60% or greater (where such slope areas of the tract account for 10% or more of the tract).

<b>Table 3.1.2. Planning Area Slope</b>		
<b>Percent Slope (%)</b>	<b>Total Acreage</b>	<b>Percent of Planning Area Lands (%)</b>
<b>0-16</b>	11,800.46	56.74
<b>16-25</b>	2,659.71	12.79
<b>25-60</b>	5,659.99	27.22
<b>60 and Greater*</b>	675.71	3.25

\*These slopes are regulated by the County through LDC density reduction standards.  
 Source: Henderson County slope data (2009).



**Figure 3.1.3. Planning Area Slope**



**Environmentally Sensitive Sites.** The Planning Area contains many environmentally sensitive sites, with four (4) designated as Significant Natural Heritage Areas by North Carolina Natural Heritage Program (See Map 2, Sensitive Natural Areas (Pg. 61)). These four (4) sites include:

Clifffield Mountain. The privately owned site is significant due to its good quality Chestnut Oak, Montane Oak-Hickory, Montane Alluvial Forests, Pine-Oak/Heath, and rock outcrop communities. This site provides the best link between the Green River Game Lands and the Hickory Nut Gorge.

Lower Hungry River Gorge. The publicly owned (NC Wildlife Resources Commission) Dedicated State Nature Preserve is a deep tributary gorge to the Green River Gorge. This site is significant due to its good quality White Pine Forest, Carolina Hemlock Forest, and Pine-Oak/Heath. Mountain heartleaf (State Endangered), longstalk sedge (State Significantly Rare), and French Broad heartleaf (Federal Species of Concern and State Threatened) grow onsite.

Green River Gorge. The publicly owned (NC Wildlife Resources Commission) Dedicated State Nature Preserve is a large (over 7,000 acres total) deep escarpment gorge. This site is significant due to its good quality Pine-Oak/Heath, Rich Cove Forest, Carolina Hemlock Forest, White Pine Forest, and Chestnut Oak Forest. Longstalk sedge (State Significantly Rare) and French Broad heartleaf (Federal Species of Concern and State Threatened) grow onsite.

**Bat Fork Bog.** The publicly owned site (NC Department of Agriculture and Consumer Services (NCDA&CS)) is a remnant Southern Appalachian Bog and Piedmont/Mountain Alluvial Forest. The NCDA&CS Plant Conservation Program is currently restoring the site.

**Protected Species.** Using the Natural Heritage Inventory occurrence data, several protected state and federal plant and animal species have been noted, historically observed, or have habitat in or near the Planning Area (see Table 3.1.3).

Table 3.1.3. State and Federal Protected Species Located within the Planning Area				
Common Name	Scientific Name	Kingdom	Protection Status*	
			Federal	State
Sarracenia jonesii	Mountain Sweet Pitcher Plant	Plant	Endangered	Endangered
Sisyrinchium dichotomum	White Irisette	Plant	Endangered	Endangered
Dendroica cerulea	Cerulean Warbler	Animal	SC	SC
Marshallia grandiflora	Large-flowered Barbara's-buttons	Plant	SC	SR
Hexastylis rhombiformis	French Broad Heartleaf	Plant	SC	Threatened
Hexastylis contracta	Mountain Heartleaf	Plant	SC	Endangered
Carex barrattii	Barratt's Sedge	Plant		Endangered
Helenium brevifolium	Littleleaf Sneezeweed	Plant		Endangered
Myrica gale	Sweet Gale	Plant		Endangered
Platanthera integrilabia	White Fringeless Orchid	Plant		Endangered
Hypochilus coylei	A Lampshade Spider	Animal		SR
Nartheceum montanum	Appalachian Yellow Asphodel	Plant		SR
Carex utriculata	Beaked Sedge	Plant		SR
Hygrohypnum closteri	Closter's Brook-hypnum	Plant		SR
Robinia hispida var. kelseyi	Kelsey's Locust	Plant		SR
Mustela nivalis	Least Weasel	Animal		SR
Carex pedunculata	Longstalk Sedge	Plant		SR
Sphagnum capillifolium	Northern Peatmoss	Plant		SR
Dendrolycopodium dendroideum	Prickly Ground-pine	Plant		SR
Symphotrichum laeve var. laeve	Smooth Blue Aster	Plant		SR
Poa palustris	Swamp Bluegrass	Plant		SR
Trillium simile	Sweet White Trillium	Plant		SR
Hackelia virginiana	Virginia Stickseed	Plant		SR

\*SC: Special Concern; SR: Significantly Rare.

Source: North Carolina Natural Heritage Program (2009).

**Green River Game Lands.** The game lands, owned and managed by the North Carolina Wildlife Resources Commission, contain 14,308 acres across Henderson and Polk Counties. The purpose of the game lands is wildlife conservation and management. Hunting, fishing, and trapping are permitted. Trails are also available to hikers throughout the year (they should only be used on Sundays during hunting season (mid-September through mid-May)). Henderson County contains 2,850 acres (approximately 20%) of the game lands. The Planning Area contains 43.2% (1,232.28 acres) of the Henderson County portion of the game lands (See Map 2, Sensitive Natural Areas (Pg. 61)).

**Conservation Easements.** The Planning Area does not currently contain any conservation easements.

**Trends.** Land resources in the Planning Area are limited. Approximately 7,998 acres of the Planning Area's 20,796 acres (38%) are vacant. Approximately 1,969 acres (9%) of the Planning Area's 20,796 acres are within one tract, which is currently vacant. Development trends and future pressures, if not properly managed, could negatively affect these limited resources.



**Cultural and Historical Resources**

Colonial settlers began arriving in the Planning Area shortly after the American Revolutionary War. Many of these early colonial families still make their home in the area. A number of important cultural and historical resources from over 200 years of colonized history are within the Planning Area (See *Dana Community Plan Supplemental Materials* for a full Cultural and Historic Sites Inventory). Included are the following sites:

Dana Methodist Church Cemetery. The cemetery contains the oldest marked burial site for an infant, William Willis, whom was born and died on April 11, 1798. According the document compiled by the Henderson County Genealogical and Historical Society (1995) no other marked grave in this or any other Henderson County cemetery contains Willis from this time period (See *Dana Community Plan Supplemental Materials* Cultural and Historic Sites Map, Site C2)).

Gilbert-Justus Family Cemetery. This cemetery is in a heavily wooded area and contains 18 unmarked graves. The one marked grave in the cemetery belongs to Isabella Justus (b. October 29, 1809 and d. September 9, 1851).

Jones Family Cemetery at Upward Road. This family cemetery is now uniquely located along a dirt road wedged between apple orchards. The first individual buried in this cemetery was Elizabeth Tabor on April 10, 1840 (b. October 29, 1801). Among early settlers buried in the cemetery are Tabors, Justus (W.D. Sr. family), and Jones (See *Dana Community Plan Supplemental Materials* Cultural and Historic Sites Map, Site C14 and Photos as Left, including the gravestone of Elizabeth Tabor).



Refuge

Baptist Church Cemetery. Many members of the Gibbs family are buried in this cemetery including Sallie Gibbs whose burial marks the oldest on site at March 2, 1854 (See *Dana Community Plan Supplemental Materials* Cultural and Historic Sites Map, Site C1 and Photos at Right, including the gravestone of Sallie, wife of Thomas Gibbs).



Stepp Family Cemetery at Golden Hill. Eight (8) individuals are buried at this cemetery including

four (4) unmarked graves. Four (4) members of the Stepp family are buried at this cemetery, including Henry Stepp (buried in 1893). The site is largely inaccessible but when last visited in 1979 stones of an old church foundation were still present north of graves (See See *Dana Community Plan Supplemental Materials Cultural and Historic Sites Map, Site C8*).

Stepp Family Cemetery at Red Hill. This cemetery located east of the confluence of Little Hungry and Hungry Rivers, includes 21 unmarked graves and 1 marked grave for A.T Stepp (Co H 2<sup>nd</sup> N.C. Mtd Inf U.S. Army) (b. 1744 d. 1821). (See See *Dana Community Plan Supplemental Materials Cultural and Historic Sites Map, Site C9*).

In addition to churches and cemeteries, there are several other historically and culturally significant structures and sites in the Planning Area including: the Stepp Mill, the Cannery on Dana Road, the Maxwell House, Oleta Falls, Golden Hill, and the sites which formerly contained the Summit Hotel, Aleeta Post Office and the post office at Stepp Mill. While these sites are currently privately owned and not immediately accessible to the public, they are important to the community and its history.

**Trends.** Historical and cultural sites important to the Dana Community and County are being lost due to decay, lack of knowledge of the site or its historical significance, and development pressures. Identified historic structures are also in close proximity to major roads and expansion and widening of these roads may pose a threat to the preservation of these structures.

### *Natural and Cultural Resources Goals and Objectives*

#### *Goal N1. Protect water quality within the Dana Planning Area*

- N1.1. Develop educational materials for development of property along or with streams.** These materials should explain and provide reference to stream classifications and associated development limiting regulations.
- N1.2. Official watershed designation for Lake Adger within Henderson County should not be supported by Henderson County, unless the water supply would service Henderson County residents.**
- N1.3. Promote monitoring the effects of development and agriculture on the quality of water in the Hungry River and Mud Creek.**

#### *Goal N2. Protect land quality within the Dana Planning Area.*

- N2.1. Consider standards, requirements, incentives, or other methods to preserve Dana Planning Area mountain views.**
- N2.2. Consider expanding ridge top protection regulations.** The County may wish to consider limiting cutting, applying additional height limitations, and including more ridges to be regulated to achieve more effective ridge top protection.
- N2.3. Support and promote conservation easements within the Dana Planning Area to protect agricultural land and open space.**

#### *Goal N3. Create incentives/opportunities for preservation of historic and cultural sites within the Dana Planning Area.*

- N3.1. The Historic Resources Commission should encourage the preservation and care of Dana Planning Area historic sites through preservation grants and other identified means that both promote site accessibility and respect the rights and privacy of site owners.**



### 3.2: AGRICULTURE

#### Existing Agriculture Lands and Production

Approximately 11,057 acres (53.19%) of the Planning Area is agricultural land (horticultural and forestlands are included in this category)<sup>1</sup>. Data used to identify the amount of land in agriculture include: (1) United States Department of Agriculture data (2009 Farm Services Agency and 2007 Census of Agriculture data); and (2) Henderson County data (2010 tax parcel and voluntary agricultural district data).<sup>2</sup>



The Planning Area contains a significant portion of the County’s agricultural lands; containing 8.66% of the County’s land but approximately 12.57% of its agricultural land (See Map 3, Agriculture (Pg. 62)).

The Planning Area contributes to the County’s agricultural prominence with farms producing apples, soybeans, hay, corn, vegetables, small fruits (blackberries/strawberries), peaches, pumpkins, and tomatoes. The Planning Area also includes small nursery operations.

Table 3.2.1. Planning Area Agricultural Lands			
Place	Acreage		Percent of Total Acreage in Agricultural Lands
	Agricultural Lands	Total	
Henderson County	87,937.64	240,099.79	36.63%
Planning Area	11,057.37	20,796.14	53.19%

Source: USDA FSA data (2009) and Henderson County data (tax parcel and voluntary agricultural district (2010)).

Recent trends indicate farmers are diversifying crops and products to remain competitive. County production ranks as follows:

- Apple Production. First in the State annually, and a leading producer of apples in the southeast;
- Nursery, Greenhouse, & Floriculture Revenues. Second in the State (2008);
- Vegetable Production. Second or third in the State annually;
- Corn for Silage. Seventh in the State in tons produced (2008); and
- Cattle. Fifth in Western North Carolina (2006).

In terms of cash receipts, the County was the second most lucrative in the State in terms of revenues from nursery, greenhouse, and floriculture generating just under 46 million dollars in 2008. The County was the 12<sup>th</sup> most lucrative in the State in terms of cash receipts for crops (2008) and the 40<sup>th</sup> most lucrative in the State in terms of total cash receipts from agriculture (2008).

<sup>1</sup> Actual acreage in agricultural land may be higher than data indicates.

<sup>2</sup> United States Department of Agriculture (USDA) data include Farm Services Agency (FSA) program (conservation, loan, credit and disaster) data and Census of Agriculture data (conducted each five (5) years). Henderson County data include tax parcel data (all land classified as “present-use value”, “agriculture-horticulture” and “forestland”) and voluntary agricultural districts (all active participants in the program).

The County is active in preserving its agricultural prominence. In 1991, the County adopted a Farmland Preservation Ordinance to: (1) encourage voluntary preservation and protection of farmland from nonfarm development; (2) increase awareness of local farm locations; (3) educate the public about local farms; and (4) recognize the importance of agriculture to the economic and cultural life of the County. The ordinance established the voluntary agricultural district program requiring purchasers of subdivided properties (within a specified distance of district lands) be notified of nearby district designations. The ordinance does not regulate the conversion of farms into developed lands.

In 2009, the County expanded the program to include the enhanced voluntary agricultural district which offers an increased set of incentives for landowners to restrict development for a ten (10) year period.

The County also participates in a present use value taxation program where it taxes eligible lands on the present use value instead of the market value. Present use value (the value of the land in its current use) is only applied to agricultural, horticultural, or forestland. Not all agricultural land is eligible and must meet requirements related to: (1) time of application, (2) ownership, (3) size, (4) income, (5) management, and (6) any other requirement established by North Carolina General Statutes. This program reduces property tax burden, ultimately reducing development pressure.

Finally, the County has provided in the Land Development Code (LDC) a 5% density bonus for those conservation subdivisions preserving active agricultural lands.



**Apples.** The Planning Area has long been associated with and identified by its apple growing industry. Dana offers ideal apple growing conditions given its climate and terrain.



The apple growing industry developed slowly in the 1800's due to poor means of transporting apples for long distances outside of the County. In the late 1800's, the first railroad in the County was built, with the first steam engine arriving in the original Hendersonville Depot in 1879. Apple growers soon thereafter began expanding their markets, hauling apples and other produce into nearby communities in South Carolina. Apples soon became the most prominent County crop (early 1900's).



In the early 1900's apples from the Upward area were sold at the standard price of 20 cents a bushel. Mr. Ben Laughter purchased many of these Upward area apples and was among the first to process apples in Henderson County. Laughter's value added product was apple brandy, which he had obtained a government

license to make and sell (selling for \$1.50 per gallon). By the mid-1930's apple sales amounted to approximately 200,000 dollars in revenue annually.

The apple industry grew slowly but steadily until it saw a second period of rapid growth in the late 1950's and 1960's. New technologies, including speed sprayers and automatic pruners were introduced in the County in the 1950's. Near the end of the decade (1958), Gerber Products Company selected Skyland, North Carolina as a location for a processing plant. Gerber changed Henderson County apple

production with its arrival. The company introduced harvesting apples in bins and the 20 bushel bin box. Over the next decade, the apple market in the County would shift largely from a fresh fruit market to an apple processing market. Although the plant closed in 1998, apple growers continue to use the 20-bushel bin box introduced by the company.

Apple growers have also modified their growing practices, including changing in tree spacing. Reductions in tree spacing allowed for industry expansion. Since the 1930's per acre tree planting rates increased tenfold (See Table 3.2.2). Apple production per acre also increased dramatically as a result.

The apple growing industry remains an important aspect of the Planning Area's agriculture, heritage and economy. The Planning Area, according to the USDA Farm Services Agency, contains 64 apple farms and approximately 1,263 acres in orchards.

<b>Table 3.2.2. Henderson County Apple Tree Spacing</b>		
<b>Apple Trees</b>	<b>1930's</b>	<b>Today</b>
<b>Spacing Within Rows</b>	30-35 feet	10-15 feet
<b>Separation Between Rows</b>	30-35 feet	16-20 feet
<b>Planting Rate Per Acre</b>	40-50 trees	400-500 trees

Source: Blue Ridge Farm Direct Market Association, www.ncapples.com

The County in 2008 contained an identified 4,500 apple bearing acres, 855,000 apple-bearing trees, and a potential full crop yield of 3,262,500 bushels (average of 725 bushels per acre). The County produced 80% of NC apples in 2008, grossing a total of 30.9 million dollars (net income averages between 15 and 20 million dollars annually). The County's apple market is once again largely a fresh fruit market.

**Trends.** Despite the prominence of agricultural lands in the Planning Area, trends show declining agricultural lands in the County. According to the USDA Census of Agriculture, the County has seen an estimated 35.93% decline in total agricultural acreage during the 20-year period between 1987 and 2007 (See Table 3.2.3).

<b>Table 3.2.3. Henderson County Agricultural Census Data</b>							
<b>Place</b>	<b>Acreage by Census Year*</b>					<b>Percent Change</b>	
	<b>1987</b>	<b>1992</b>	<b>1997</b>	<b>2002</b>	<b>2007</b>	<b>Total (%)</b>	<b>Average Annual (%)</b>
<b>Henderson County</b>	59,232	52,281	44,511	48,619	37,947	-35.93	-1.80

\*The acreage included herein may not include all land actively involved in agriculture as the Census of Agriculture is a survey based on individual responses. Information available from the FSA indicates additional acreage not included by the Census.

Source: USDA Census of Agriculture (1987, 1992, 1997, 2002 and 2007).

Agricultural lands are declining because of: (1) parcelization, (2) scattered development pattern, (3) farmers' inability to compete successfully for land because of increased land value, (4) the loss of farmers due to age and lack of heirs interested in continuing farming, and (5) the economic hardships of farming.

Once agricultural land is developed, its agricultural value is reduced significantly if not permanently lost. Agricultural lands are lost piece by piece to development because of parcelization (when a farm is divided multiple times into smaller tracts that are more easily sold and developed). Parcelization is part of the problems created by scattered development (occurring adjacent to existing agricultural lands). Scattered development makes farming more difficult in that farming practices and effects (dust, smells, sprays, noise, etc.) may be difficult to mitigate and can cause tension between neighboring residential uses and the farm. Individuals associated with the development may also negatively affect the farm through their own activities including trespassing, vandalism and theft. Adjacent development may result in increased property values making it more difficult for farmers to compete successfully for valuable agricultural land.



The overall decline in agricultural land is also the result of selling farms to developers. A farmer's age and lack of heirs combined with the economic hardships of farming often results in the sale of farms. In 2007, the average age of a Henderson County farmer was 57.2 (USDA Census of Agriculture). Given the aging population, this issue will likely remain a cause of agricultural land loss.

Development trends and future pressures, if not properly managed, may negatively affect agriculture.

### ***Agricultural Goals and Objectives***

#### ***Goal A1. Expand and diversify agricultural markets within the Dana Planning Area.***

**A1.1. Consider establishing a tailgate market in the Dana Planning Area.**

#### ***Goal A2. Provide public education as a means of supporting farmers and protecting farmland.***

**A2.1. Expand and support the existing Agricultural District Signage Program through the County Soil Conservation Office.**

**A2.2. Work with NCDOT to place road signs warning motorists of slow moving farm machinery.**

**A2.3. Encourage participation in NCDOT's agritourism signage program.** This program allows for the advertisement of agritourism farms (as defined by NCGS and that meet North Carolina Department of Agriculture and Consumer Services (NCDA and CS) requirements) along interstates and other roads provided the farm falls within 15 road miles of the exit/interchange.

**A2.4. Support, educate and retain agricultural workers in the Dana Planning Area.** Agricultural workers are essential to the viability of farming in the Planning Area. Measures to support, educate and retain these workers should be supported by the County to ensure the continued viability of farming.

#### ***Goal A3. Expand agricultural enterprises' access to economic development and promotion programs and support services.***

**A3.1 Consider establishing a County Agricultural Development Director Position.** Researching and implementing the numerous and diverse programs and activities related to agricultural economic development and farmland preservation is a full-time job. Having county-paid staff dedicated to serving the Agricultural Advisory Board (AAB) and managing an integrated agricultural preservation program will increase the likelihood of the program's success. The director's role could include such duties as: promote economic development for agriculture and agribusiness, research issues and programs, assist farmers with marketing, administer tailgate markets, write grant proposals, manage grants received and implement the resolutions of the AAB.

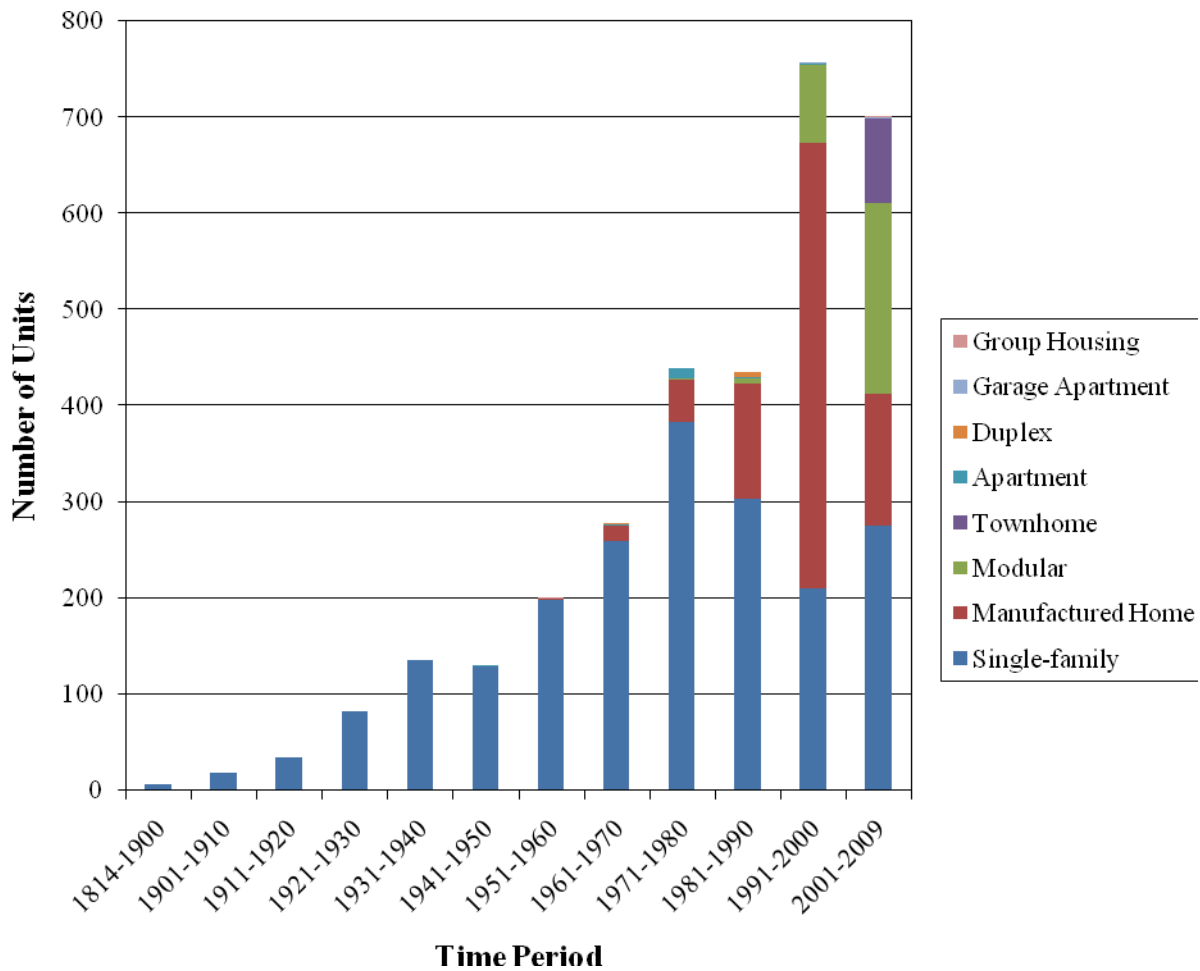
**A3.2. The County should work with the Henderson County Partnership for Economic Development and others to encourage agriculture-related industries (i.e. agricultural processing plants, biofuels processing, etc.) to locate in the Dana Planning Area.**

**A3.3. Consider establishing a "Buy Henderson" local food campaign, similar to existing "Local Food" campaigns in the region.** The focus of these efforts should be educating the public about non-local food sources. This effort could be coordinated with the "Shop & Dine Henderson County" campaign.

**3.3: HOUSING**

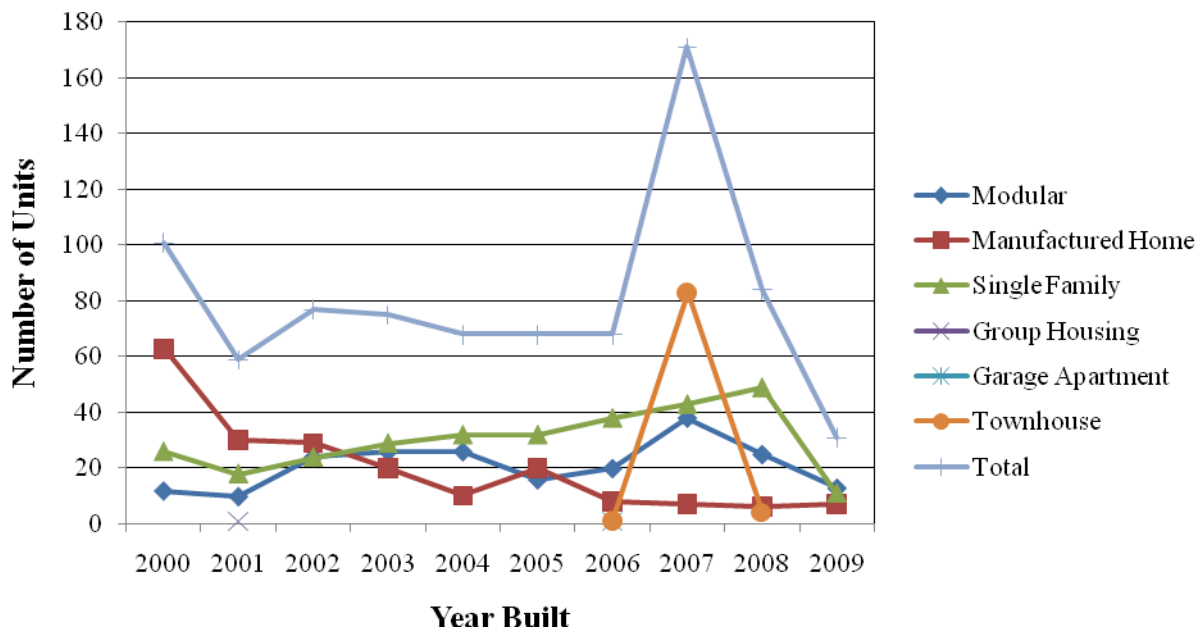
**Existing Housing Stock.** The Planning Area contains 3,234 permanent residential units with the oldest existing permanent residential unit built in 1814 (See Figure 3.3.1 and Map 4, Housing Stock 1930-2009 (Pg. 73)). Over half of these permanent units were built or placed between 1981 and 2009 (with the greatest amount of residential development occurring during the 10-year period from 1991 to 2000). During this 10-year period an average of 76 units were built/placed annually. From 2001 to 2009, an average of 70 residential units were built/placed each year.

**Figure 3.3.1. Planning Area Housing Year Built by Type, 1814-2009**



From 2000 to 2009, a steady decline in the number of permanent manufactured homes placed in the Planning Area occurred. Other single-family unit types (stick-built and modular) showed steady increase through 2008. The highest number of units built/placed in a single year was 171 units in 2008. A large number of townhomes (81) were completed in 2008 which accounts for this increase. These townhome units are associated with a development known as “The Orchards of Flat Rock”.

**Figure 3.3.2. Planning Area Housing Year Built by Type, 2000-2009**



The Planning Area contains 7.33% of all permanent residential units in the County. The predominant permanent residential unit in both the Planning Area and County is traditional “site built” single-family residences. Data indicate site built single-family residences account for 79.14% of all County residential units and 63.48% of all Planning Area residential units (See Tables 3.3.1 and 3.3.2).

Residential Structure Type	Number	Percent (%)	
<b>Single-Family</b>	<b>Site Built</b>	2,053	63.48
	<b>Modular</b>	285	8.81
	<b>Manufactured (Real Property)</b>	781	24.15
<b>Townhouse</b>	88	2.72	
<b>Apartment (including Garage Apartments)</b>	19	0.59	
<b>Duplex</b>	6	0.19	
<b>Group Housing</b>	2	0.06	
<b>Condominium</b>	0	0.00	
<b>Total</b>	3,234	100	

Source: Henderson County Building Services data (2010) with extrapolations by Henderson County Planning Staff.



<b>Table 3.3.2. Henderson County Residential Units by Structure Type 2009</b>			
<b>Residential Structure Type</b>		<b>Number</b>	<b>Percent (%)</b>
<b>Single-Family</b>	<b>Site Built</b>	34,916	79.14
	<b>Modular</b>	1,562	3.54
	<b>Manufactured (Real Property)</b>	3,984	9.03
<b>Townhouse</b>		1,190	2.70
<b>Apartment (including Garage Apartments)</b>		1,124	2.55
<b>Duplex</b>		214	0.49
<b>Group Housing</b>		11	0.02
<b>Condominium</b>		1,116	2.53
<b>Total</b>		44,117	100

Source: Henderson County Building Services data (2010) with extrapolations by Henderson County Planning Staff.

**Manufactured Homes.** With regard to manufactured housing, approximately:

- 24.15% of all permanent residential units in the Planning Area are manufactured,
- 19.60% of all manufactured homes considered permanent residential units (also referred to as “real property”) in the County are located in the Planning Area,
- 24.08% of manufactured homes classified as personal property (financed/owned separately from the parcel of land with which they are associated) in the County are located in the Planning Area,
- 21.98% of all manufactured home park spaces in the County are located in the Planning Area.

In total it is possible the Planning Area contains 1,919 manufactured homes. It is possible that the County contains 9,096 manufactured homes. The Planning Area thus accounts for 21.10% of all possible manufactured homes within the County.

**Approved Residential Lots.** The Planning Area currently contains 1,808 vacant lots located within zoning districts which permit the placement of single family residences. In addition, the Planning Area contains 214 approved but unrecorded residential lots (located within active major and minor subdivisions). A total of 2,022 recorded and unrecorded lots are possible in the Planning Area, accommodating a minimum of 2,022 single-family residences. These lots could contain accessory residential structures not accounted for in this figure. Further, it is possible these lots may be further subdivided or contain more dense residential development.

**Housing Tenure.** Housing tenure in the Planning Area and County is comparable. Within the Planning Area, approximately 80.06% of occupied structures are owner occupied and 19.94% are renter occupied (See Table 3.3.3).

<b>Table 3.3.3. Planning Area Occupied Residential Structures by Tenure Type 2000</b>					
<b>Place</b>	<b>Total Occupied Residential Structures</b>	<b>Owner Occupied</b>		<b>Renter Occupied</b>	
		<b>Percent (%)</b>	<b>Total</b>	<b>Percent (%)</b>	<b>Total</b>
<b>Henderson County</b>	37,414	78.80	29,483	21.20	7,931
<b>Planning Area</b>	3,231	80.06	2,587	19.94	644

Source: Census data (2000 Block Group) with extrapolations by Henderson County Planning Staff.

Housing tenure by population indicates that, within both the Planning Area and County, approximately four (4) in five (5) individuals reside in owner occupied housing (See Table 3.3.4).

<b>Table 3.3.4. Planning Area Population by Tenure Type 2000</b>					
<b>Place</b>	<b>Total Population</b>	<b>Reside in Owner Occupied Housing</b>		<b>Reside in Renter Occupied Housing</b>	
		<b>Percent (%)</b>	<b>Total</b>	<b>Percent (%)</b>	<b>Total</b>
<b>Henderson County</b>	89,173	78.49	69,992	21.51	19,181
<b>Planning Area</b>	7,992	79.68	6,368	20.32	1,624

Source: Census data (2000 Block Group) with extrapolations by Henderson County Planning Staff.

**Affordable Housing.** The Department of Housing and Urban Development (HUD) is the agency responsible for federal housing programs. HUD defines housing as “affordable” when a household earning at or below 80% of the area median household income puts no more than 30% of its income toward a mortgage payment or rent. Within this group are those households with low income (income equivalent to between 51 and 80% of the area median household income), very low income (income equivalent to between 31 and 50% of the area median household income), and extremely low-income (income equivalent to less than 30% of the area median household income). A household paying more than 30% of its gross income for housing costs is “cost burdened”. A household paying more than 50% of its gross income for housing costs is “extremely cost burdened”.

Housing affordability determination by HUD typically accounts for mortgage payment and other monthly housing costs (taxes, insurance, and utilities). Table 3.3.5 provides affordable housing price estimates.

<b>Table 3.3.5. Henderson County Housing Affordability for Low and Median Income Households 2006</b>				
<b>Henderson County Household Income</b>	<b>Low Income Household</b>			
	<b>Income</b>	<b>Monthly Income</b>	<b>Affordable Monthly Housing Payment*</b>	<b>Estimated Affordable Housing Price**</b>
<b>Median Income</b>	\$46,322	\$3,860	\$1,143	\$157,966 (includes \$23,695 down)
<b>Low Income</b>	\$23,624 - 37,057	\$1,968 - 3,088	\$650 – 1,019	\$89,764 – \$140,806 (includes \$13,465 – \$21,120 down)

\* Price determined based on HUD recommendations that no more than 30% of monthly income go toward a mortgage payment. This mortgage payment estimate, provided by HUD is slightly higher than 30% because it includes private mortgage insurance, property taxes, and hazard insurance which are often included in other monthly housing costs but are commonly now escrowed into mortgages.

\*\*Assumes a conventional, fixed 30-year mortgage at 6.25% interest with 15% down payment.

Source: Census data (2000 and 2008 County and 2000 Block Group), Henderson County parcel data (2010), and Department of Housing and Urban Development (HUD) Affordability Calculator.

In 2008, a County household earning \$46,322 was a median income household. A median income household could afford a home with a maximum value of \$157,966. The average assessed housing value in the County (\$212,432) is 134.48% of the affordable cost. The Planning Area average assessed housing value (\$163,768) is just beyond affordability to a County median income household.

In 2008, a County household earning less than \$37,058 was a low-income household. A household earning at the top of this category (\$33,057) could afford a home with a maximum value of \$140,806. The average assessed housing value in the County (\$212,432) is 150.87% of the affordable cost. The

Planning Area average assessed housing value (\$163,768) is beyond affordability to a County low income household (representing 116.31% of the affordable cost).

The Planning Area's median household income (\$39,042) is approximately 15.72% lower than the median household income for the County. Planning Area median income is lower, therefore an affordable home for a Planning Area median income household is also lower (\$148,348). The Planning Area average assessed housing value (\$163,768) is beyond affordability to a median income Planning Area household (representing 110.39% of the affordable cost). Over 50% of the Planning Area's households cannot afford an average valued Planning Area home.

**Trends.** The Planning Area is experiencing an expansion of its housing stock. Trends show a slight decline in the number of houses built/placed over the past 10 years. Housing affordability will be an issue in the Planning Area and the County as housing costs remain high and incomes remain stagnant. Ensuring an adequate stock of affordable housing in the future depends largely on future incomes and housing costs.

***Housing Goals and Objectives***

***Goal H1. Expand affordable housing in the Dana Planning Area.***

**H1.1. Consider offering incentives for affordable housing.** The County should consider incentives such as building inspection fee waivers or reductions to encourage the development of affordable housing.

***Goal H2. Expand and diversify housing options.***

**H2.1. The County should encourage—and regulations should permit—a mix of housing types (including multifamily units) in the Dana Planning Area.**

**H2.2. The County should consider applying additional design standards for multifamily units in the Dana Planning Area to ensure continuity with the surrounding rural community.**

***Goal H3. Support the continuance and expansion of the existing local program for abandoned/dilapidated manufactured home removal.***

***Goal H4. Encourage quality housing for migrant workers through continued enforcement of the minimum housing code and by encouraging additional affordable housing options to serve this population.***





**3.4: COMMUNITY FACILITIES AND PUBLIC SERVICES**

**Public Schools**

The Planning Area falls partially within the Apple Valley Middle and North Henderson High School district and the Flat Rock middle and East Henderson High School district. The Planning Area contains portions of the following elementary school districts: Dana, Edneyville, Hillandale, Sugarloaf, and Upward. County schools located within the Planning Area include Dana, Sugarloaf and Upward Elementary (hereinafter “Planning Area Schools”).

Planning Area Schools are expected to remain within state capacity through the 2014-2015 school year. Edneyville Elementary, Apple Valley Middle, and North Henderson High Schools currently exceed state capacities and will all remain over capacity by 2014-2015 school year (despite construction efforts at Apple Valley Middle and North Henderson High which will only temporarily relieve capacity issues at North Henderson High). In the 2011-2012 school year, Flat Rock Middle is anticipated to exceed state capacity, as will Upward Elementary in the 2013-2014 school year (See Table 3.4.1).

**Table 3.4.1. Current School Capacities and Projected Populations**

Schools	Capacity		20 Day Membership		Projections* (2010-2015)				
	State	Core	08-09	09-10	10-11	11-12	12-13	13-14	14-15
<b>Elementary Schools</b>									
Dana	648	688	492	484	481	476	476	476	453
Edneyville	512	674	606	633	633	652	647	659	674
Hillandale	722	810	411	584	590	606	639	643	650
Sugarloaf	648	723	468	475	466	466	454	453	436
Upward	533	400	646	457	486	501	518	541	555
<b>Middle Schools</b>									
Apple Valley (Current)	654	847							
Apple Valley (Anticipated)***	(966)	(1149)	828	868	948	977	1014	1014	1076
Flat Rock	800	665	799	774	797	819	841	863	905
<b>High Schools</b>									
East Henderson	1065	840	987	969	996	1025	1024	1016	1054
North Henderson (Current)	895	1110							
North Henderson (Anticipated)***	(1170)	(1169)	995	954	973	1020	1064	1134	1221
Green = Well within State Capacity		Yellow = Approaching Capacity				Red = Over State Capacity			

\* Projected growth is calculated by the kindergarten growth over the past eight (8) years.

\*\* The Media Center and Dining room capacities are calculated with the least value of the 2 capacities is the school core capacity.

\*\*\* The anticipated capacity reflects post construction project capacity. These numbers were used to evaluate projections beginning in 2011-2012 school year and continuing through 2014-2015 school year.

Source: Henderson County Public Schools data (2008).

**Planning Area Schools.**

The Planning Area has a long history in education. Early schools in the community included:

Ace School: a one teacher cabin opened in the 1850s by Johnson and Collie Crawford Hill located near what is today the pond off Frank Hill Road;

Mount Vernon School: a two-room school house located on Old Dana Road on the hill above Haunt Branch (referred to as “Dry Hill School”); and

Blue House Academy: named for its paint color, the largest of these three (3) early schools was established in 1866 and served as an educational hub attracting students from Rutherford, Transylvania, Polk, and Buncombe Counties.

In 1928, at least eight (8) schools in the Planning Area (including these earliest schools) were combined and placed into a new school built near the center of the community. This was known as the Dana School and taught students grades one (1) through 12. This original structure was destroyed by fire in the 1970’s.

The present day Dana Elementary School serves kindergarten through fifth grade, and is located in the newly refurbished Dana School building which was originally completed in 1974 to replace the destroyed structure.

Upward Elementary School was constructed in 1993 and Sugarloaf Elementary is among the newest County schools, constructed in 2008.

Planning Area Schools all fell below district and state averages for school sizes in the 2009-2010 school year (see Table 3.4.2).

During the 2008-2009 school year Sugarloaf and Upward Elementary experienced only slightly higher than average kindergarten classes while all Henderson County schools had higher than average class sizes in the fourth and fifth grade (See Table 3.4.3).

Annually, North Carolina schools receive designations based on their performance on the state’s ABCs tests. This evaluation takes into account the percent of students performing at grade level and on whether students have learned as much as they are expected to learn annually. The designations are as indicated in Table 3.4.4.



**Table 3.4.2. School Size in Number of Students**

<b>State Average</b>	511
<b>District Average</b>	493
<b>Dana</b>	484
<b>Sugarloaf</b>	475
<b>Upward</b>	457

Source: NC School Report Cards (2008-2009 school year) and Henderson County Public School data (2009-2010 school year).

**Table 3.4.3. Average Students per Class**

Grade	State Average	District Average	Dana	Sugarloaf	Upward
<b>Kindergarten</b>	19	19	15	20	20
<b>First</b>	19	19	17	19	19
<b>Second</b>	19	18	18	15	19
<b>Third</b>	19	19	21	17	18
<b>Fourth</b>	21	22	20	25	23
<b>Fifth</b>	21	23	27	21	23

Red = Above State Average

Source: NC School Report Cards (2008-2009 school year).

Table 3.4.4. North Carolina School Designations for Henderson County				
Designation	Performance: Students Performing at Grade Level	Growth: Learning Achieved*	Percent of Schools with Designation	
			District	State
Honor School of Excellence	At least 90% of students at grade level and the school made adequate yearly progress	Variable	15%	5%
School of Excellence	At least 90% of students at grade level	Variable	0%	0%
School of Distinction	80 to 90% of students at grade level	Variable	46%	22%
School of Progress	60 to 80% of students at grade level	Variable	39%	49%
No Recognition	60 to 100% of students at grade level	Variable	0%	5%
Priority School	50 to 60% of students at grade level or Less than 50% of students at grade level	Variable	0%	17%
Low Performing	Less than 50% of students at grade level	Variable	0%	3%

\*Any of the following: High Growth, Expected Growth, or Expected Growth Not Achieved may be the measure.  
 Source: NC School Report Cards (2008-2009 school year).

In the 2008-2009 school year, the State Board of Education recognized Dana Elementary as a North Carolina School of Distinction, with a the learning achieved recognized as “high growth”. The State Board of Education recognized Sugarloaf Elementary and Upward Elementary as Schools of Progress with Upward experiencing “high growth” learning achieved and Sugarloaf experiencing “expected growth”.

North Carolina end-of-grade tests results in math, reading and science show that pass rates for Planning Area Schools vary (See Table 3.4.5). In terms of overall performance on the tests, students at Dana Elementary performed better than Upward Elementary students. Sugarloaf Elementary students achieved the lowest average test results. Dana Elementary School students’ math scores were higher than the district average and indicate that only 6.3% of students are not meeting grade level expectations in math at Dana Elementary.

Table 3.4.5. Percent of Students Passing the End of Grade Test (Scoring at or Above Grade Level*)					
Exam Type	State	District	Dana	Sugarloaf	Upward
Reading	67.6	79.5	74.6	59.0	69.3
Math	80.0	90.4	92.7	78.8	82.0
Science	60.8	77.5	91.9	61.9	63.2
Red = Below District and State Average		Yellow = Below District Average but Above State Average			
*Grades 3 through 5 receive reading and math tests. Only fifth grade students are tested for science.					
Source: NC School Report Cards (2008-2009 school year).					

**Recreation**

**Dana Park.** The County currently operates one (1) park in the Planning Area. Dana Park is located along Upward Road, south of its intersection with Orchard Road. The County entered a long-term lease (99 years) with the Dana Community Club for use of the 3.94 acres of land and associated community club building. The leasing of the property and structure was with the understanding that the property would be used as a park and for community





gatherings. The park currently includes a community building (with kitchenette, restrooms, tables and chairs), shelter (with associated picnic tables and grill), multipurpose fields, a basketball court, and playground. The community building and picnic area can be reserved (See Map 5, Recreation and Multimodal Transportation (Pg. 64)).

**Greenways.** The Comprehensive Plan identifies possible sites for greenways in the Planning Area. Greenways serve as an alternate link between residential communities, recreational areas, nonresidential centers and open spaces. These sites were initially identified by the Apple County Greenway Commission whose purposes are to promote and facilitate the planning, development, and maintenance of greenways in the County. The Planning Area contains a small portion (3,600 feet) of the proposed greenway network, this segment being located along Crest Road and providing a connection to Upward Elementary School (See Map 5, Recreation and Multimodal Transportation (Pg. 64)). There are currently no built greenways in the Planning Area.

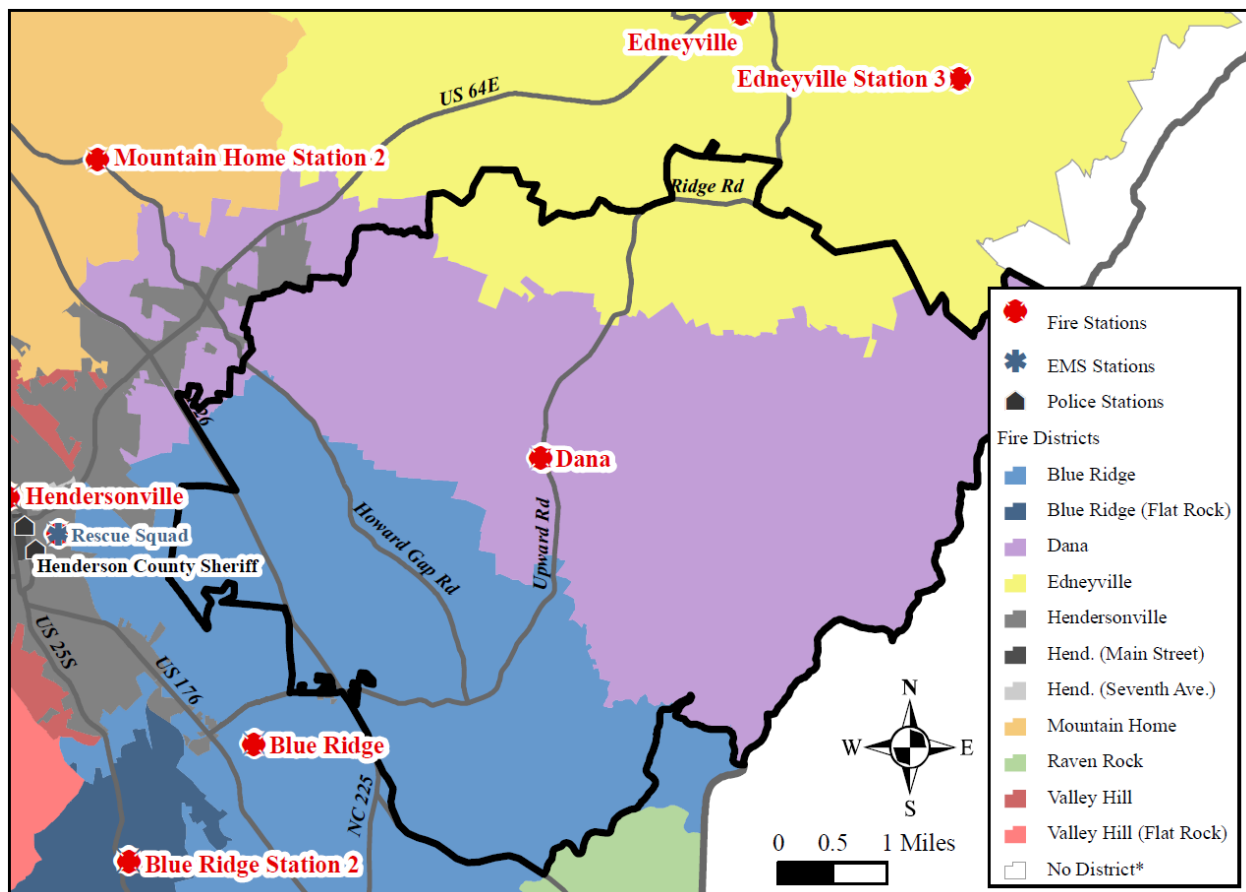
**Libraries**

The Planning Area does not contain a library. The County currently has six (6) branch libraries throughout the County. The nearest branches include: Main Branch (Hendersonville), Edneyville Branch, and Green River Branch.

**Emergency Services**

**Fire Protection.** The Planning Area contains the Blue Ridge, Dana, and Edneyville fire districts (See Figure 3.4.1).

**Figure 3.4.1. Planning Area Emergency Services**



The Dana Volunteer Fire and Rescue Department, located at the intersection of Dana Road and Upward/Ridge Road, serves most of the Planning Area. The station is approximately 14,500 square feet in size. The department currently has four (4) paid staff, 28 volunteers and 9 trucks that serve an area of approximately 13,173 acres.



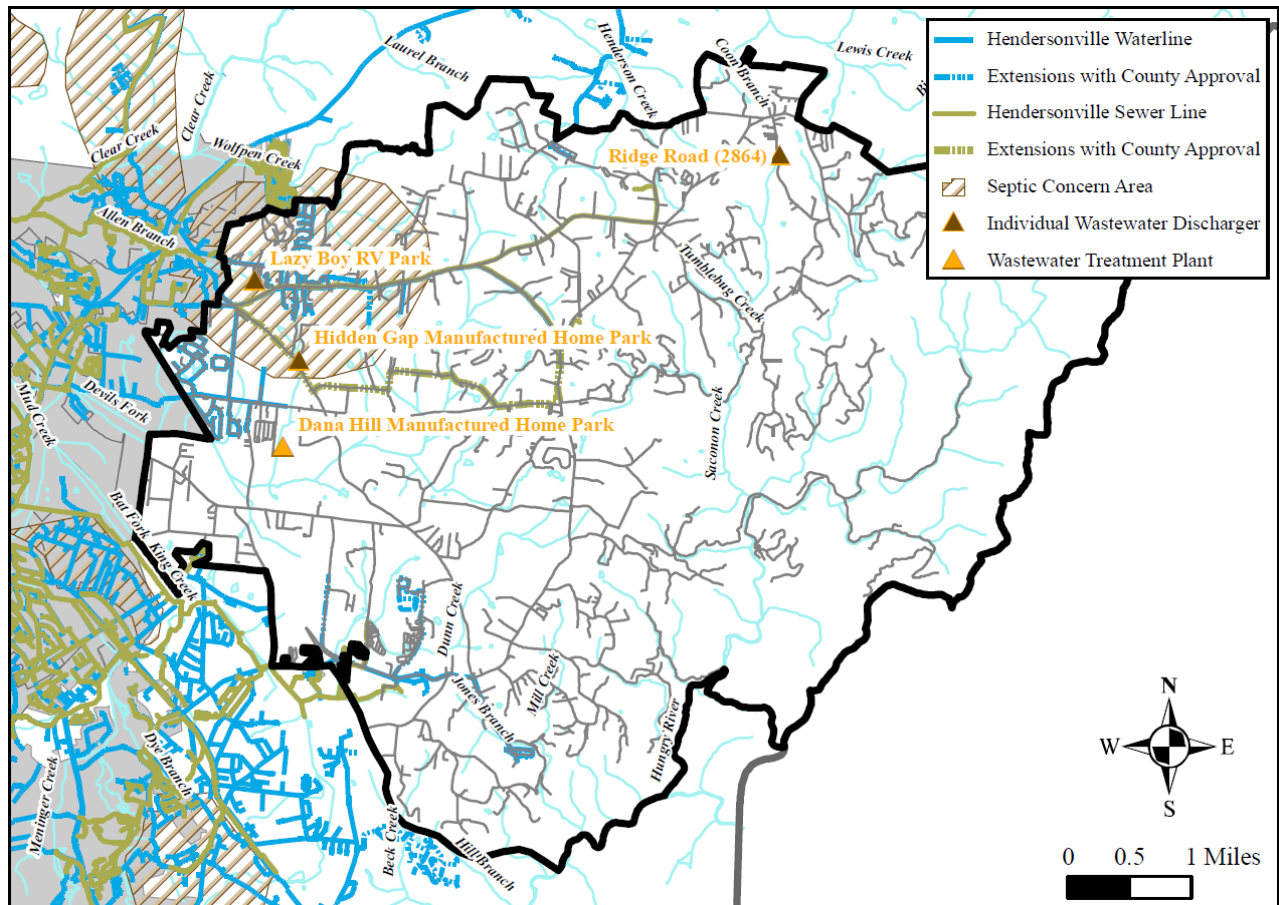
**Emergency Medical Services (EMS).** The Planning Area does not contain a separate EMS station.

**Law Enforcement.** There is no satellite Sheriff’s Office in the Planning Area. The Sheriff’s Department covers the Planning Area by allocating one (1) patrol officer within the general area 24 hours a day. Two (2) additional officers and one (1) supervising officer patrol the entire County. The 911 Emergency Center, servicing the entire County, has four (4) workers per 12-hour shift. Eighteen (18) employees work at the detention center, located in the City of Hendersonville.

**Public Water and Sewer**

**Public Water.** The City of Hendersonville supplies public water to portions of the Planning Area. The waterlines principally run along Sugarloaf, Dana, Upward and Howard Gap Roads, and the residential subdivisions adjacent to the roads (See Figure 3.4.2). Other limited private water systems may also exist. Private companies generally maintain the infrastructure for these systems, often supplying water through community wells.

Figure 3.4.2. Planning Area Water and Sewer



**Public Sewer.** The City of Hendersonville provides public sewer to portions of the Planning Area. The sewer lines run along Sugarloaf and Blue House Roads. A sewer line extension has been approved by the Henderson County Board of Commissioners that may extend sewer service to the properties surrounding the intersection of Dana/Upward/Ridge/Oleta Roads. Sewer lines are largely available west of the Planning Area.

The Planning Area also includes a large portion identified as a septic concern area (lands with significant concentrations of septic failures). One (1) permitted wastewater treatment plant and three (3) individual wastewater discharges are located in the Planning Area (two (2) individual wastewater discharges are found in the septic concern area). These facilities are permitted and annually inspected by the North Carolina Department of Environment and Natural Resources (NCDENR).

### ***Solid Waste***

There are approximately 30 private municipal solid waste haulers in Henderson County. The County contracts with Waste Management to transfer construction/demolition and municipal solid waste from the Stoney Mountain Transfer Station to a landfill in Palmetto, South Carolina.

**Recycling.** Planning Area residents may drop off recyclables at the Stoney Mountain Landfill. Recyclables are sent to private companies located in Greenville, South Carolina. Individual private waste collection companies may transport certain recyclables to Asheville, North Carolina as well. The County employs an Environmental Programs Coordinator whose responsibility it is to examine improvements to and expansion of the existing recycling program.

### ***Trends***

As the Planning Area continues to develop, demand for and on public services and community facilities will increase. Proper management of development is necessary to ensure community facilities and public services remain adequate in the future.

## ***Community Facilities and Public Services Goals and Objectives***

**Goal CFPS1. School outdoor recreation facilities should be available for community use when not being used by students or otherwise by the school system.** Protecting school grounds from damage and vandalism should be a priority. The County may wish to consider hiring staff to monitor the facilities when not being used by students or the school system.

**Goal CFPS2. Redevelop the Dana Community Park, as depicted in the Conceptual Master Plan, to serve as a focal point for the community.** The Dana Community Park redevelopment involves County participation but requires private donations and community support to implement the complete concept.

The redevelopment of the park in line with the Conceptual Master Plan (see Figure 3.4.3) will result in:

- Upgrades to the existing community building to increase its usefulness, including:
  - Wrap-around porch or patio,
  - Façade improvements,
  - Air conditioning,
  - Kitchen upgrades, and
  - Externally accessed restroom facilities adjacent (and in addition to) the existing internal restroom facilities.



- Varied recreational opportunities in defined areas of the park, including:
  - A large agricultural themed playground consistent with the community’s character,
  - Multi-sport hard court field,
  - Integrated walking trail,
  - Picnic tables, and
  - Open lawns.
- User safety improvements through:
  - Controlling points of access,
  - Separating and defining recreational uses,
  - Placing the playground and parking areas in close proximity to each other (and with visibility from the street), and
  - Installing additional lighting.
- Pedestrian connections that integrate the park with “Downtown Dana”.
- Opportunities for alternate use including community gatherings and events or community tailgate marketing.

The playground, walking trails, trees, and externally accessed restroom facilities should be considered phase one of the project and should be installed first.

**Figure 3.4.5. Dana Community Park Conceptual Master Plan**



Refer to Pg. 68 for a Large Scale Plan



***Goal CFPS3. Consider establishing a park on the grounds surrounding the Upward Community Center.*** The County should work with the Upward Community Club Incorporated, to develop the approximately 1 ½ acre site with a park oriented to young children. Playground equipment should be installed.

***Goal CFPS4. Consider providing sidewalks in commercially zoned areas within the Dana Planning Area.*** Sidewalks should be provided to encourage pedestrian friendly development, especially in the heart of Dana and near the Upward Road interchange. Sidewalks should also be extended to nearby schools and parks, even if located along properties with noncommercial zoning.

Note: Encroachment agreement with NCDOT would be required. Sidewalk maintenance would be required and may be provided by the County and/or the individual being required to install the sidewalk. The County should consider developing a plan to show the location of sidewalks for access to commercial areas, schools, and parks.

***Goal CFPS5. Support extensions of public water and public sewer into the Dana Planning Area.***

### 3.5: TRANSPORTATION

**North Carolina Department of Transportation (NCDOT) Public Roads.** NCDOT maintains the majority of public roads in the state (including over 79,000 miles of roadway and some 77% of the entire public road system). Most state departments of transportation do not maintain the majority of public roads and instead delegate road maintenance authority to municipalities and/or counties. Henderson County does not currently maintain any roads for public purpose.

**Regional Planning Process.** NCDOT coordinates much of its transportation planning efforts for the County through the French Broad River Municipal Planning Organization (MPO). Henderson County is part of this MPO which also includes Buncombe and Haywood Counties and the municipalities within each of the three (3) counties. Henderson County, like all local governments in the MPO, participates in the preparation and prioritizing of project lists for the:

- (1) “Comprehensive Transportation Plan for French Broad River MPO and Rural Areas of Buncombe, Haywood and Henderson Counties” (hereinafter “Comprehensive Transportation Plan”) which serves as a vision for the future transportation system (adopted January 18, 2008);
- (2) “Transportation 2030: The Long Range Multi-Modal Plan for Buncombe, Haywood, and Henderson Counties” (hereinafter “Long Range Multi-Modal Plan”) which identifies transportation improvements and programs to be carried out over the next 25 years; and
- (3) “Transportation Improvement Program” (hereinafter “TIP”) which lists projects proposed for the next seven (7) years.

Beyond the MPO process, Henderson County also works directly with NCDOT engineers (district and county) to provide feedback on and track progress of projects within the County.

Henderson County also has an appointed Transportation Advisory Committee (TAC). The TAC is comprised mostly of MPO representatives who meet regularly to: (1) discuss local transportation issues; (2) receive updates from the NCDOT district engineer regarding TIP and secondary road project progress; and (3) take public input regarding transportation related concerns and issues.

**Regional Transportation Network Challenges.** The regional transportation network faces challenges in that it is: (1) rural, (2) isolated from a major urban center, (3) under development pressure, and (4) restricted by scarce financial resources. The following are the major issues for the region:

Shortfall in Revenues. A shortfall in revenues needed to implement an adequate pavement rehabilitation program and make needed improvements to roads, highways and bridges.

Addition of Substandard Roads. State maintenance funds are fiscally impacted when already substandard roads are added to the maintained roadway inventory.

Lack of Transportation Services. There is a need for transportation services to ensure mobility and reasonable access for all age and income groups. This needs to be addressed despite limited funding sources, extensive travel distances and high regional operating and fuel costs.

Lack of Bicycle and Pedestrian Facilities. There is a need for bicycle and pedestrian facilities to provide safer environments and better connectivity for non-motorized travel.

**Recommended Potential Improvements to Roadway Facilities.** The recently completed Comprehensive Transportation Plan recommends potential improvements to roadway facilities affecting the Planning Area. These are not necessarily included in the Long Range Multi-Modal Plan or TIP. The following are those recommended road improvements by the Comprehensive Transportation Plan (See Map 6, NCDOT Comprehensive Transportation Plan (Pg. 65)):

Highway Project C1

Interstate-26: US Highway 25 to Interstate-40. Recommendation is to widen Interstate-26 to 6 lanes along the length of the corridor with associated interchange improvements as warranted (coordinate with highway project C4, among others).

Highway Project C4

Upward Road (SR 1783): US Highway 176 to Howard Gap Road. Recommendations are to widen the corridor to four (4) lanes with a median and maintain a high level of access management and traffic signal optimization (coordinate with highway projects C1 and C9 and bicycle project C19).

Highway Project C9

Howard Gap Road (SR 1006): Upward Road (SR 1783) to US Highway 25. Recommendations are to: (1) widen substantial portions of Howard Gap Road to four (4) lanes with a median; (2) make necessary significant geometric improvements (including construction on new alignment) at many locations; and (3) improve intersections and access management. With the addition of turn lanes (where necessary), some segments may be able to retain a 2-lane cross-section temporarily or indefinitely (coordinate with highway project C4, among others).

Highway Projects C20 & C21 – Inner Loop.

(C20) Airport Road (SR 1755): US Highway 176 to Tracy Grove Road (SR 1793). Recommendations include adding turn lanes, widening shoulders, improving geometrics and intersection operations as appropriate, and possible reconfiguration of the intersection of Airport Road with New Hope Road to eliminate the dogleg (coordinate with highway project C21 and bicycle project C12, among others).

(C21) Tracy Grove Road (SR 1793): Airport Road (SR 1755) to Dana Road (SR 1525). Recommendations include adding turn lanes, widening shoulders, and improving geometrics and intersection operations as appropriate (coordinate with highway project C20 and bicycle project C12).

Highway Project C30

Sugarloaf Road (SR 1734): US Highway 64 to Pace Road (SR 1726). Recommendations include adding turn lanes, widening shoulders, and improving geometrics and intersection operations as appropriate (coordinate with highway project C9 and bicycle project C20).

Bicycle Projects C3, C10, C11 and C20. Recommendations include upgrading the facilities with wide shoulders or striped lanes and appropriate signage.

(C3) Howard Gap Road (SR 1006): Upward Road (SR 1783) to US Highway 25.

(C10) Crest Road (SR 1803), Upward Road (SR 1783), Ridge Road (SR 1783), et. al.

(C11) New Hope Road (SR 1757), Airport Road (SR 1755) & Tracy Grove Road (SR 1793).

(C20) Sugarloaf Road (SR 1734): US Highway 64 to Ridge Road (SR 1783).

**Vehicle Crashes.** Vehicle crashes may indicate congestion problems and/or be associated with the physical characteristics of a roadway. Inadequate turn bays, sight distance, pavement width and traffic control devices can all contribute to a vehicle crash. Crash data available from January 1, 2004 to December 31, 2006 were analyzed to identify intersections with a high frequency of vehicle crashes

(10 or more). A total of 75 intersections were identified and ranked. The Planning Area contained four (4) of these identified intersections (See Table 3.5.1).

Table 3.5.1. Planning Area Intersections with a High Frequency of Vehicle Crashes		
Rank (of 75)	Intersection	Number of Crashes
3	Interstate-26 and Upward Road (SR 1783)*	39
17	Sugarloaf Road (SR 1006) and Howard Gap (SR 1734)**	21
30	Dana Road (SR 1525) and Upward/Ridge Road (SR 1783)***	15
46	Dana Road (SR 1525) and Mid Allen Road (SR 1893)****	12

\*Highway Project C4 includes intersection improvements at this site.

\*\*This intersection was improved (signalized) in early 2007 (immediately following crash data collection).

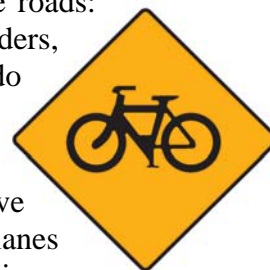
\*\*\*NCDOT anticipates traffic signalization at intersection when funding becomes available (anticipated March 2011).

\*\*\*\*According to NCDOT, improvement to this intersection would require lowering Dana Road which may have significant impacts to adjoining property owners.

Source: Comprehensive Transportation Plan adopted January 18, 2008; NCDOT District Engineer.

**Bike Routes.** NCDOT designated bike routes in the Planning Area include all or portions of: Crest, Upward/Ridge, Pilot Mountain, Staton, Tracy Grove, Airport, and New Hope Roads (See Map 5, Recreation and Multimodal Transportation (Pg. 64)). These designated bike routes contain no dedicated bike facilities (bike lanes or paved shoulders) because most of these roads:

(1) are rural in nature, (2) have a low volume of traffic, (3) lack adequate shoulders, and (4) have poor geometrics. NCDOT cautions route users that these roads do not contain special accommodations. The most heavily traveled road segments include “Share the Road” signs.



Improvements to the roads may be recommended as noted in the Comprehensive Transportation Plan (See Bicycle Projects C10 and C11 above). Painted bike lanes along road shoulders may be added when a roadway is widened, geometrics are improved, or road resurfacing is scheduled. The designation of a bike facility (bike lane) should occur during the design phase for a planned improvement to a road.

**Public Transportation.** An existing fixed-route transit system serves the County (See Map 5, Recreation and Multimodal Transportation (Pg. 64)). Three (3) of the existing four (4) fixed routes travel through the Planning Area: Red, White and Green. The Red, White and Blue Routes operate on weekdays between the hours of 6:30 a.m. and 6:30 p.m. The Green Route is a one (1) vehicle fixed-route service transit system operating on weekdays between the hours of 9:00 a.m. and 5:00 p.m.



Eligible citizens of the Planning Area and County (senior citizens and disabled persons) may use paratransit (rural van service) upon request. Paratransit is available during the same operation days/hours as the fixed-route service. Federal and State grants and County and municipal contributions fund the transit system.

**Transportation Goals and Objectives**

**Goal T1. Improve the transportation network in the Dana Planning Area.**

**T1.1. The County, through its involvement in the French Broad River MPO, should prioritize projects within the Dana Planning Area in accordance with Plan goals. The**



Comprehensive Transportation Plan (CTP) recommends the following improvements in the Planning Area, which the Dana Community Plan supports:

1. C1 (Interstate-26 – US Highway 25 to Interstate-40);
2. C4 (Upward Road (SR 1783) – US Highway 176 to Howard Gap Road);
3. C20 (Airport Road (SR 1755) – US Highway 176 to Tracy Grove Road);
4. C21 (Tracy Grove Road (SR 1793) – Airport Road to Dana Road); and
5. C30 (Sugarloaf Road (SR 1734) – US Highway 64 to Pace Road).

With regard to CTP recommended improvements to Howard Gap Road (from Upward Road to US Highway 25), the Dana Community Plan supports:

1. Minor improvements in the short term\* (remaining two (2) lanes within the Planning Area with widening, straightening, improving alignment, and improving intersections); and
2. Significant improvements in the long term (including widening the portion within the Planning Area to four (4) lanes).

\*Note: Short term refers to the timeframe contemplated by this Plan, and understood to be approximately 15 years.

**T1.2. Improve identified intersections based on recommended studies.** The conditions of the following intersections pose automobile, bicycle, and pedestrian safety concerns and should be studied and improved:

1. Tracy Grove Road/Howard Gap Road (improvements to angles with the consideration of a roundabout or realignment);
2. Dana Road/Upward Road/Ridge Road/Oleta Road (the addition of signalization);
3. Dana Road/Mid Allen Road (improvements to site visibility including trimming vegetation, and the addition of intersection indicators (rumble strips, signage, signalization, etc.)); and
4. Dana Road/North Allen Road (the addition of intersection indicators (rumble strips, signage, signalization, etc.)).

**T1.3. Facilitate safer automobile movement and alleviate traffic stacking issues on Ridge Road, Academy Road, and Blue House Road during school peak hour traffic.** Improvements to Ridge Road, based on recommended studies, should address stacking issues at Dana Elementary School and alleviate congestion resulting from these issues along Academy and Blue House Roads. The addition of a turn lane to alleviate stacking concerns may be warranted.

**T1.4. Provide an additional Interstate 26 interchange between the existing interchanges at Upward Road and US Highway 64 East.** An interchange, located at either Tracy Grove Road or Dana Road would provide additional connectivity for the Dana Planning Area and County. The selected interchange road (Tracy Grove Road or Dana Road) should be widened at least from the interchange to its intersection with US Highway 64 East.

**T1.5. The County, through its involvement in the French Broad River MPO, should prioritize bicycle projects within the Dana Planning Area in accordance with Plan goals.** The Comprehensive Transportation Plan (CTP) recommends the following bicycle improvements in the Planning Area, which the Dana Community Plan supports: C10 (Crest Road (SR 1803), Upward Road (SR 1783), Ridge Road (SR 1783), and others); and C11 (New Hope Road (SR 1757), Airport Road (SR 1755) and Tracy Grove Road (SR 1793).

CTP recommended improvements to Howard Gap Road (C3) and Sugarloaf Road (C20) are supported but should not be prioritized over projects C10 and C11.

**T1.6. Review public transit periodically to identify service provision changes or increases.**

**3.6: ECONOMIC DEVELOPMENT<sup>3</sup>**

Economies are the result of two elements: (1) the physical element (natural resources, climate, and infrastructure (buildings, roads, utility provision) among others); and (2) the human element. People provide the economy with energy to develop and the necessary intelligence to maximize its potential. Future economic development with the Planning Area depends upon its workforce, employment opportunities, and employment projections.

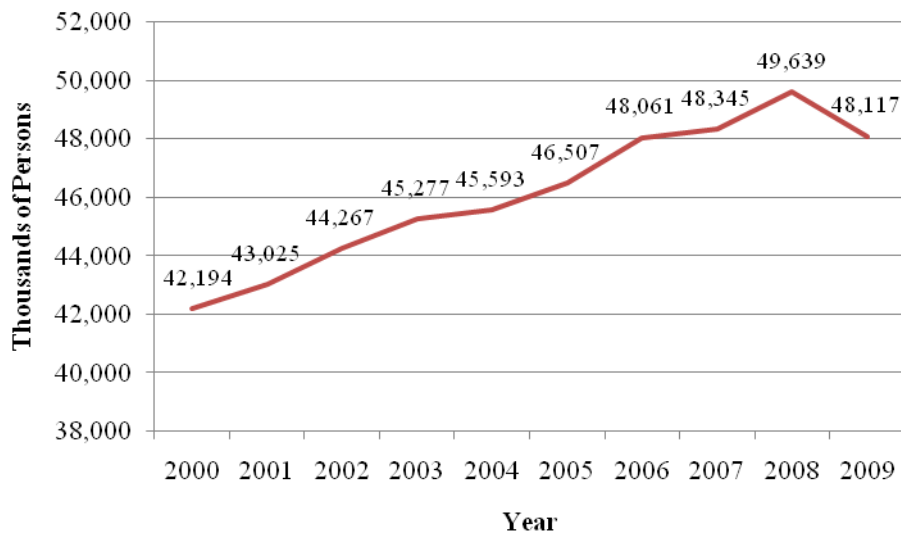
**Workforce.** The workforce includes employed and unemployed workers aged 16 years or older. In 2008, the Planning Area contained 9.6% of the County’s population and 10.1% of the County’s workforce. A larger percent of the Planning Area population participates in the workforce than is seen countywide (48.9% and 46.9% respectively) (See Table 3.6.1).

Table 3.6.1. Workforce Population 2008			
Place	Total Population	Workforce Population	Participation Rate
Henderson County	102,482	48,087	46.9%
Planning Area	9,916	4,845	48.9%

Source: Census data (2000 Block Group Data and 2008 American Communities Survey) with extrapolations by Henderson County Planning Staff.

Employment Securities Commission data suggest the Henderson County workforce population decreased from 2008 to 2009 by approximately 3% (or 1,522 persons) (See Figure 3.6.1). Data indicates that this is the only occurrence of workforce population decline during the past 10 years. A number of factors may have caused this reduction.

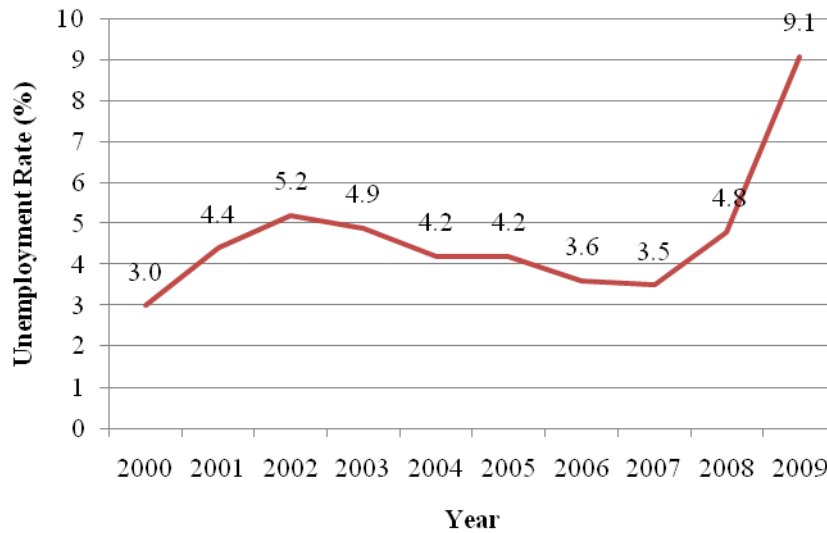
**Figure 3.6.1 Henderson County Workforce**



**Unemployment.** Unemployment is a significant concern given current economic conditions. According to Employment Securities Commission data, at no other time during the past 10 years has unemployment been: (1) lower than in 2000 (3%), or (2) higher than in 2009 (9.1%).

<sup>3</sup> Data were compiled from Census data (2000 Block Group Data and 2008 American Communities Survey) and the North Carolina Employment Securities Commission.

**Figure 3.6.2. Henderson County Unemployment Rate**



**Employee Skills.** In the current job market, an individual’s employment opportunities are increased or diminished based upon that individual’s skill set and skill level. Skills provide the competitive edge for job seekers, and represent a combination of education, training, and work experiences. In terms of educational attainment, the County has higher rates of diploma and advanced degree attainment than is seen in the Planning Area. This suggests a job seeker in the Planning Area may be at a disadvantage to citizens in the rest of the County based on educational experiences (See Table 3.6.2).

**Table 3.6.2. Educational Attainment for the Population Aged 25+ (2000)**

Place		Planning Area	Henderson County	North Carolina	United States
<b>Total Population Aged 25+</b>		5,417	65,039	5,282,994	182,211,639
<b>Schooling</b>	<b>None</b>	103 (1.9%)	433 (0.7%)	62,106 (1.2%)	2,617,960 (1.4%)
	<b>Some, No Diploma</b>	1,324 (24.4%)	10,522 (16.2%)	1,092,618 (20.7%)	33,097,665 (18.2%)
	<b>High School Diploma*</b>	1,959 (36.2%)	18,972 (29.2%)	1,502,978 (28.4%)	52,168,981 (28.6%)
<b>Degree</b>	<b>Some College, No Degree</b>	1,026 (18.9%)	14,761 (22.7%)	1,080,504 (20.4%)	38,351,595 (21.0%)
	<b>Associate’s</b>	381 (7.0%)	4,655 (7.2%)	358,075 (6.8%)	11,512,833 (6.3%)
	<b>Bachelor’s</b>	417 (7.7%)	10,150 (15.6%)	808,070 (15.3%)	28,317,792 (15.5%)
	<b>Master’s</b>	138 (2.5%)	375 (5.8%)	253,794 (4.8%)	10,770,947 (5.91%)
	<b>Professional School</b>	49 (0.9%)	1,269 (2.0%)	78,279 (1.5%)	3,619,535 (2.0%)
	<b>Doctorate</b>	20 (0.4%)	522 (0.8%)	46,570 (0.9%)	1,754,331 (1.0%)

\* This category also includes those passing high school equivalency exams.

Source: Census data (2000 Block Group, State and National) with extrapolations by Henderson County Planning Staff.

**County Employment by Major Industry Group.** According to the Employment Securities Commission, Henderson County experienced a 5% increase in total employment from 2000 to 2007<sup>4</sup>. Relative to the original number of employees in the industry:

1. Significant growth occurred in: construction, education and health services, financial activities, and leisure and hospitality industries; and
2. Significant decline occurred in: manufacturing, federal government, natural resources/mining, and goods-producing domain industries (See Table 3.6.3).

<sup>4</sup> The Employment Securities Commission has not made available more recent data which would reflect any impacts of the recent economic challenges.

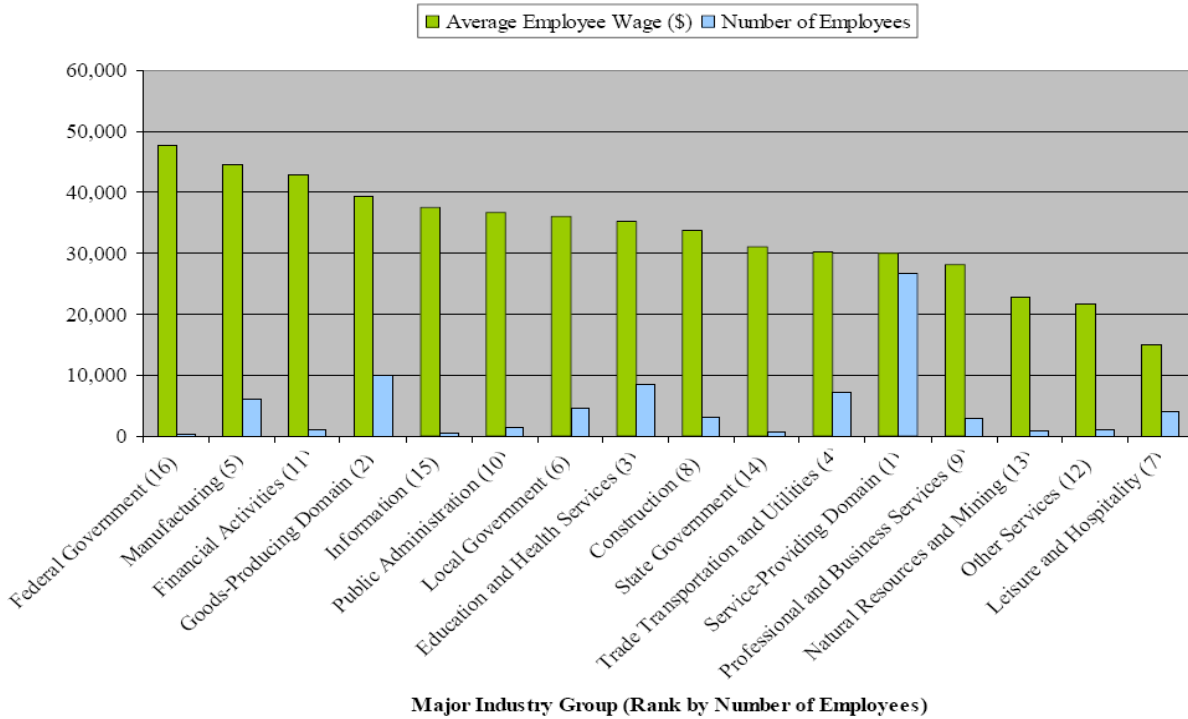
**Table 3.6.3. Henderson County Employment by NCEC Major Industry Group 2000 and 2007**

Major Industry Group	Total Number Employed		Percent Change (%)
	2000	2007	
Construction	2,184	3,130	43
Education and Health Services	6,819	8,455	24
Financial Activities	981	1,135	16
Leisure and Hospitality	3,492	4,060	16
Public Administration	1,261	1,433	14
Local Government (Total)	4,011	4,529	13
Service-Providing Domain	23,857	26,695	12
Other Services	978	1,063	9
State Government (Total)	616	673	9
Information	363	393	8
Trade, Transportation and Utilities	6,996	7,029	<1
Professional and Business Services	2,969	2,957	>-1
Goods-Producing Domain	11,137	10,000	-10
Natural Resources and Mining (includes Agriculture)	965	812	-16
Federal Government (Total)	283	224	-21
Manufacturing	7,988	6,059	-24

Source: North Carolina Employment Securities Commission (2008).

Declines in manufacturing, federal government, and goods-producing domain industries’ employment is significant for the County as these have been among three (3) of its top four (4) highest paying industries (See Table 3.6.3 and Figure 3.6.3).

**Figure 3.6.3. Henderson County Average Wage by NCEC Major Industry Group 2007**



The average wage for County employees increased in all major industry groups through 2007. The service-providing domain, which is ranked first in number of employees, saw a 20% increase in wages, to an average wage of \$29,928. The federal government industry, which employs the fewest County citizens, experienced the most significant wage increase to \$47,736 (See Table 3.6.4).



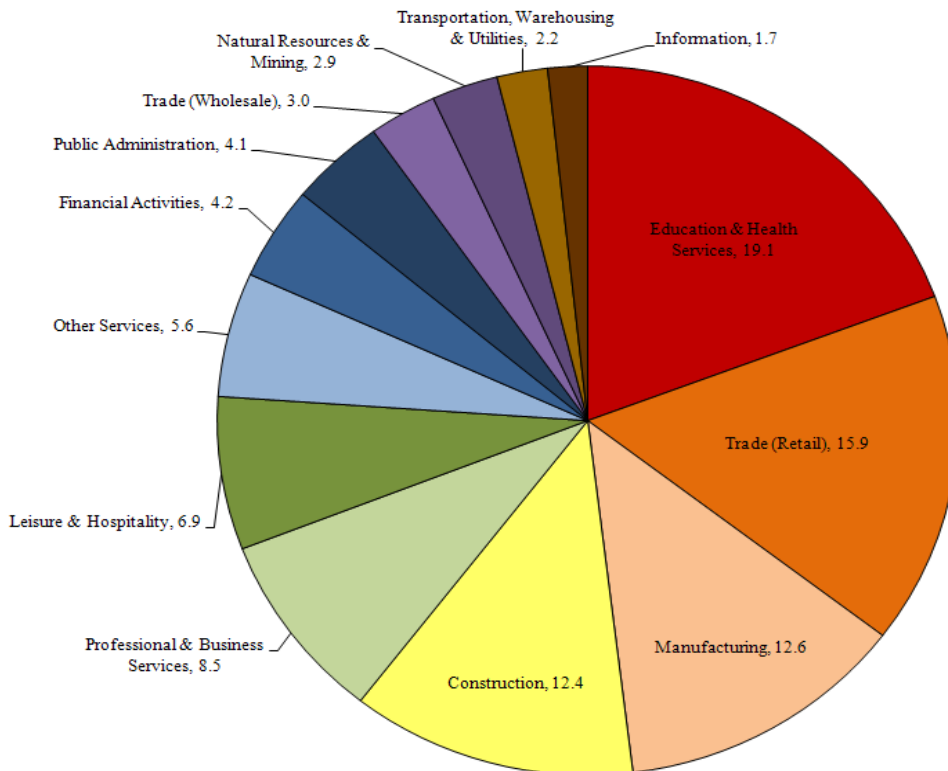
**Table 3.6.4. Henderson County Average Wage by NCESC Major Industry Group 2000 and 2007**

Major Industry Group	Wages		Percent Change (%)
	2000	2007	
Federal Government (Total)	\$32,084	\$47,736	49
State Government (Total)	\$23,816	\$31,096	31
Public Administration	\$28,298	\$36,712	30
Professional and Business Services	\$22,494	\$28,072	25
Information	\$30,248	\$37,562	24
Natural Resources and Mining (includes Agriculture)	\$18,473	\$22,802	23
Local Government (Total)	\$29,224	\$36,088	23
Education and Health Services	\$28,981	\$35,271	21
Financial Activities	\$35,832	\$42,885	20
Other Services	\$17,992	\$21,625	20
Service-Providing Domain	\$25,035	\$29,928	20
Construction	\$28,590	\$33,799	18
Manufacturing	\$37,966	\$44,595	17
Goods-Producing Domain	\$34,438	\$39,451	15
Trade Transportation and Utilities	\$26,427	\$30,295	15
Leisure and Hospitality	\$13,903	\$14,942	1

Source: North Carolina Employment Securities Commission (2008).

**Planning Area Employment by Major Industry Group.** The Employment Security Commission does not provide Planning Area specific data; however, the Census (2000 County and 2008 American Communities Survey) provides information on employment by major industry group. Census major industry groups vary from Employment Security Commission classifications.

**Figure 3.6.4. Planning Area Population Aged 16+ within Workforce by Census Major Industry Group 2008**



According to Census data, 47.6% of the Planning Area workforce is working within one (1) of three (3) major industry groups: education and health services, retail trade, or manufacturing (See Figure 3.6.4).

Education and Health Services. Approximately 19.1% of the Planning Area workforce is involved in education and health services. This industry ranks eighth in the County in terms of average employee wage (\$35,271) (See Figure 3.6.3). Projections for the region indicate approximately 26% more individuals will be employed in education

and health services by 2016 (See Table 3.6.5).

Retail Trade. Approximately 15.9% of the Planning Area workforce is involved in retail trade (which usually is categorized under the service-providing domain). This industry ranks twelfth in the County in terms of average employee wage (\$29,928 in the service-providing domain) (See Figure 3.6.2). Projections for the region indicate approximately 22% more individuals will be employed in the service-providing domain (which includes retail trade) by 2016 (See Table 3.6.5).

Manufacturing. Approximately 12.6% of the Planning Area workforce is involved in manufacturing. This industry ranks second in the County in terms of average employee wage (\$44,595) (See Figure 3.6.3). Projections for the region indicate approximately 8% of positions currently available in the manufacturing industry will be eliminated by 2016 (See Table 3.6.5).

**Employment Projections.** The Employment Securities Commission provides projected employment by major industry group for a four (4) county area (Henderson, Buncombe, Madison, and Transylvania). Regionally, most major industry groups anticipate expansion (See Table 3.6.5).

Projections indicate three (3) major industry groups (information, natural resources and mining, and manufacturing industries) will reduce employment by 2016. Among these, the manufacturing industry and information industry are currently ranked among the top five (5) highest average wage industries in Henderson County (See Figure 3.6.1). Reduction of employment opportunities in the manufacturing industry group could have a significant impact on the Planning Area workforce given the portion of residents working in this industry (12.6%).

Industries within the region projected to expand 25% or more by 2016 are professional and business services, leisure and hospitality, education and health services, and construction industries. None of these industries ranks among the top five (5) highest average wage industries in Henderson County. The education and health services industry employs the largest percentage of the Planning Area workforce (19.1%). Construction ranks fourth in Planning Area employment (12.4% of the workforce). The expansion of these industries may increase:

1. Demand for employees in these industries,
2. Opportunities for those employed/experienced in these industries, and
3. Wages as employers compete to attract the most qualified employees.

Growth in the professional and business service and leisure and hospitality industries will affect the Planning Area less given that only 8.5% and 6.9% (respectively) of the Planning Area workforce participates in these industries. The benefits from the expansion of these industries will be limited as they are among the bottom four (4) lowest average wage industries (See Figure 3.6.3).

<b>Table 3.6.5. Projected Employment by NCESC Major Industry Group for Henderson, Buncombe, Madison and Transylvania Counties</b>			
<b>Major Industry Group</b>	<b>Total Employed</b>		<b>Percent Change (%)</b>
	<b>2006</b>	<b>2016</b>	
Professional and Business Services	15,390	21,230	38
Leisure and Hospitality	20,460	26,180	28
Education and Health Services	38,910	48,950	26
Construction	10,190	12,710	25
Services-Providing	132,390	161,370	22
Financial Activities	5,590	6,690	20
Other Services (Nongovernment)	7,650	8,870	16
Trade, Transportation and Utilities	31,540	35,590	13
Government	10,760	11,780	9
Goods-Producing	31,570	32,490	3
Information	2,090	2,080	-0.5
Natural Resources and Mining (includes Agriculture)	1,650	1,610	-2
Manufacturing	19,730	18,170	-8

Source: North Carolina Employment Securities Commission, 2008

Industries expanding employment will help offset reductions in other industries; however, growing industries may not provide wages equivalent to or better than shrinking industries.

**Trends.** The Planning Area has a long economic history because of the area's entrepreneurial citizens. From the late 1800s through the early 1900's many Planning Area residents panned for gold along Big Hungry and Little Hungry Creeks, produced charcoal when the growing season ended, and/or operated mills. These early economic activities have ended many years ago largely due to external factors that drive market trends and industries in the current economy.

The Planning Area has several significant advantages in the current economy. First are its advantages of connectivity. The Planning Area is strategically located along Interstate-26, surrounding one (1) of only three (3) interchanges in the County, and offering one of the County's most interconnected local road networks. Economic development aggregates and the Planning Area's existing commercial and industrial businesses make it more attractive to potential future development. Finally, the Planning Area contains a more diversified workforce than occurs in other areas of the County. This diversity makes the Planning Area more attractive to a variety of businesses as the economy continues to evolve. Economic development can be properly managed to prevent negative impacts on the Planning Area.

### ***Economic Development Goals and Objectives***

***Goal E1. The Upward Road interchange along Interstate 26 should be recognized as a principal gateway into Henderson County, Dana, Hendersonville, and Flat Rock.*** This interchange and surrounding area should be developed to draw businesses, tourists, County residents, and the residents of the surrounding region.

**E1.1. Economic development at a regional scale should be focused at the interchange and in the surrounding area.**

**E1.2. Aesthetic improvements to the interchange should be considered.** Improving the aesthetics of the interchange will encourage economic growth at the interchange and will promote a positive perception of the Dana Community, Henderson County, and nearby municipalities. The County should consider:

1. Participating in a joint effort with NCDOT, municipalities, business owners, and citizens to make aesthetic improvements to the interchange,
2. Employing design professionals to develop a plan for landscaping, lighting, and signage treatments at the interchange and in surrounding areas, and
3. Encouraging consistent land development regulation application by the County and City of Hendersonville for properties located at the interchange and in surrounding areas.

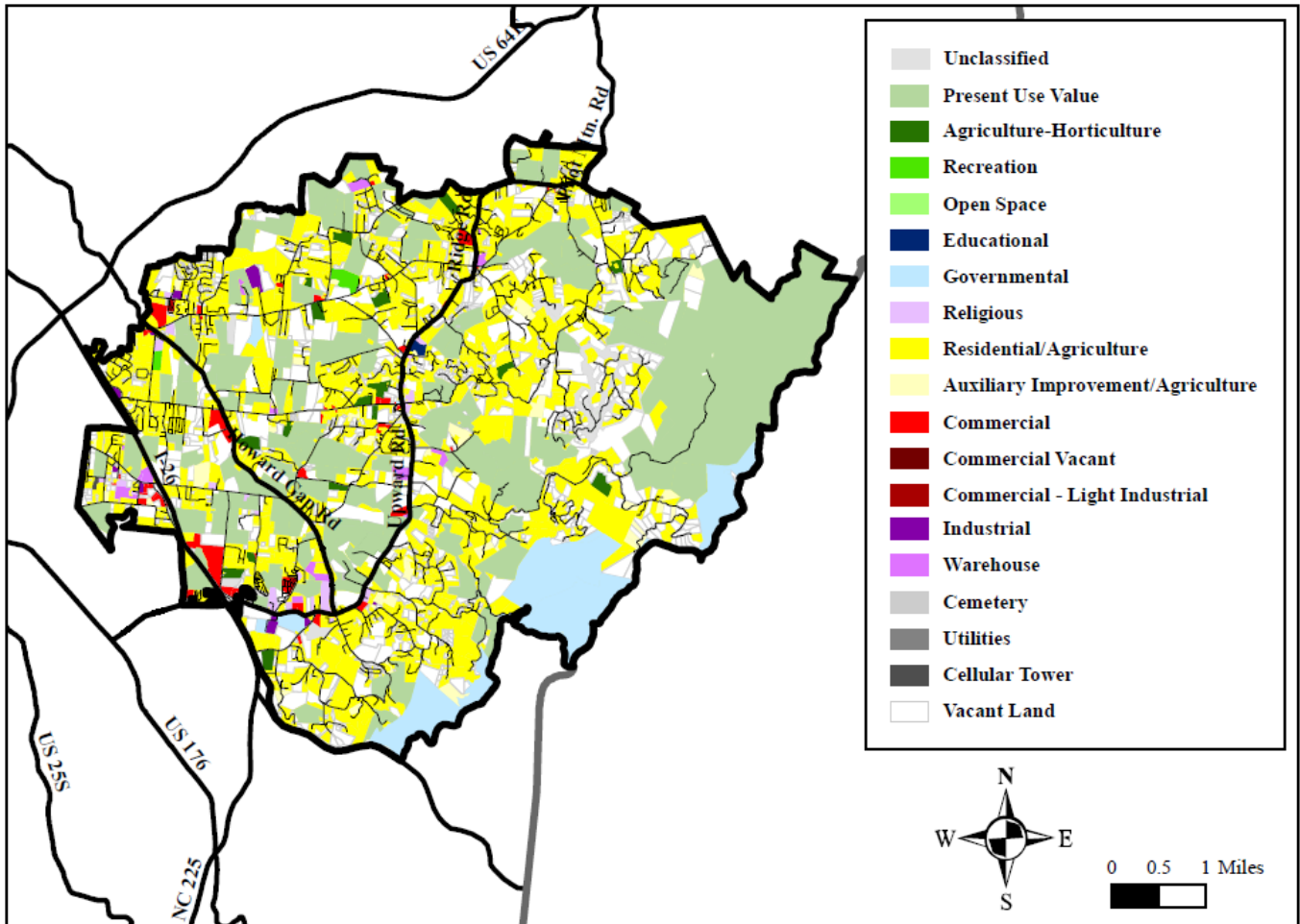
***Goal E2. Encourage higher density residential development in the areas near and mixed within nonresidential development at the interchange.*** Residential development of this type will provide consumers for and employees of the nonresidential development at the interchange.

***Goal E3. Promote high-tech and research and development operations in the Dana Planning Area in light of the Planning Area's adjacency to Blue Ridge Community College.***

**3.7: LAND USE AND DEVELOPMENT**

**Existing Land Use and Development and Current Zoning.** The Planning Area contains various land uses as classified by the County Tax Assessor’s Office (See Figure 3.7.1).

**Figure 3.7.1. Land Classification**



The principal class of Planning Area land is single family residential. Together all residential land uses (including single-family and other) comprise 48.84 percent of all lands within the Planning Area. Approximately one (1) in every five (5) acres in the Planning Area is classified as vacant by the Tax Assessor’s Office.



<b>Table 3.7.1. Acreage by Land Use Classification</b>		
<b>Land Use Classification</b>	<b>Approximate Acreage</b>	<b>Percent of Total Acreage (%)</b>
Residential (Single Family Traditional and Modular)	6,756.95	32.94
Vacant Land	4,288.71	20.91
Residential (Other)	3,261.66	15.90
Auxiliary Improvement	2,663.67	12.99
Present Use Value (Agriculture-Horticulture)	1,254.95	6.12
Governmental (Green River Game Lands)	1,221.31	5.95
Commercial/Commercial Vacant	290.16	1.41
Agriculture-Horticulture	258.15	1.26
Warehouse	115.45	0.56
Religious	107.43	0.52
Governmental (Other)	69.31	0.34
Unclassified	60.11	0.29
Industrial	59.85	0.29
Recreational	44.68	0.22
Cellular Tower	41.41	0.20
Educational	12.76	0.06
Cemetery	4.88	0.02
Open Space	0.77	<0.01
Utilities	0.51	<0.01

Source: Henderson County Tax Assessor data (July 2010).

<b>Table 3.7.2. Residential (Other) Land Use Subclasses</b>		
<b>Residential (Other) Land Use Subclass</b>	<b>Approximate Acreage</b>	<b>Percent of Total Acreage (%)</b>
Manufactured Home	1,770.66	54.29
Manufactured Home (Real Property)	745.31	22.85
Manufactured Home Park	482.49	14.79
Leasehold	222.80	6.83
Duplex	18.06	0.55
Townhome	16.25	0.50
Multifamily	5.54	0.17
Condominium	0.55	0.02

Source: Henderson County Tax Assessor data (July 2010)

The Planning Area includes nine (9) zoning districts (See Map 7, Official Zoning (Pg. 66) and Table 3.7.3). Zoning districts include four (4) residential, three (3) commercial, office institutional and industrial zoning districts.

<b>Table 3.7.3. Current Zoning Composition</b>		
<b>Zoning District</b>	<b>Total Acreage</b>	<b>Percent of Total Acreage</b>
Residential District One (R1)	1,115.93	5.36%
Residential District Two Rural (R2R)	11,149.55	53.58%
Residential District Three (R3)	6,110.31	29.37%
Residential District Four (R4)	1,256.87	6.04%
Office Institutional (OI)	68.12	0.33%
Local Commercial (LC)	304.27	1.46%
Community Commercial (CC)	141.14	0.68%
Regional Commercial (RC)	137.97	0.66%
Industrial (I)	523.84	2.52%

Source: Henderson County Official Zoning Map (July 2010).

**Residential Land Use and Development.** Approximately 94.35% of the Planning Area is zoned residential (See Table 3.7.3). Planning Area residential lots average 2.87 acres in size, indicating a low-density development pattern.

There are 2,338 single-family (traditional and modular) residences in the Planning Area (2010). Single-family (traditional and modular) residential uses account for 67.44% of all residential uses. Single-family residential use is permitted in all residential zoning districts and the LC zoning district.

Manufactured home and manufactured home park residential uses account for approximately one-third (29.93%) of all residential uses, making this residential use the second most prevalent. All residential zoning districts applied in the Planning Area allow multisection manufactured homes. The R2R and R3 zoning districts also allow singlewide manufactured homes and manufactured home parks.

**Commercial and Industrial Land Use and Development.** The Planning Area contains 113 commercial and industrial land uses, each falling within one (1) of 21 specified categories of land use. Planning Area commercial uses include retail sales and services, warehousing and storage, and offices, among other uses (See Table 3.7.4). Manufacturing and production operations where the principal industrial use of land within the Planning Area.

Table 3.7.4. Commercial and Industrial Uses within the Planning Area		
Land Use*	Occurrence	Locations**
Retail Sales and Services	24	A(2,3,7,9,10,12,15,16), B(1,7,9,15,16,17), F(4,8,10), H1, I1
Warehousing and Storage	23	A(3,17,23,24), B(11,12,18), C(1,3,4,5), E(1,14), F(15,16), G(2,5,6,10,11), H2, I(3,5)
Office	19	A(1,2, 3,15,20,25), B(2,3,4,14), F9, G(3,9)
Automobile and Equipment Service	12	A(5), B(5,6), F(5,11,12), G1, I2, J(1,2)
Manufacturing and Production Operations	7	A(13,18), B8, D1, G(4,8), I4
Convenience Store	3	F(4,6), I2
Kennel	3	A26, B13, C6
Self-Storage Warehousing	3	B10, F13, G13
Food Manufacturing	2	C2, G12
Fuel Pumps	2	F6, I2
Junkyard	2	F(2,3)
Motel/Hotel (Includes Cottage Rentals)	2	A8, H4
Physical Fitness Center	2	A(2,3)
Recreational Vehicle Park	2	A14, G7
Childcare Facility	1	A1
Governmental (Post Office)	1	F5
Indoor Recreation Facility	1	B7
Motor Vehicle Sales or Leasing	1	A4
Produce Stand	1	A10
Product Processing & Storage Facility	1	A19
Under Construction	1	A11

\* Identified by June 2010 windshield survey. Categorized based on LDC Table of Permitted/Special Uses (§200A-62).

\*\* Locations identified on in *Dana Community Plan Supplemental Materials*, Commercial, Industrial and Warehouse Land Use Inventory Maps.

The Planning Area has significant commercial/industrial heated square footage, with just less than 1.6 million heated square feet (See Table 3.7.5). The estimated Planning Area population for 2010 (10,470 persons) indicates there are over 152 square feet of commercial/industrial space per resident. Approximately 50 of the 152 square feet are commercial.

<b>Table 3.7.5. Heated Square Footage by Nonresidential Use Type: Commercial, Industrial, Warehouse, or Vacant</b>	
<b>Nonresidential Use Type</b>	<b>Total Heated Square Footage</b>
Commercial	526,745 sq. ft.
Industrial	361,253 sq. ft.
Warehouse	698,216 sq. ft.
Vacant	12,732 sq. ft.
<b>Total</b>	<b>1,598,946 sq. ft.</b>

Source: Henderson County parcel data (July 2010).

This 1.6 million square feet of commercial/industrial space is divided among 92 sites located throughout the Planning Area (See Table 3.7.6). Two (2) out of each five (5) sites contain 10,000 heated square feet of commercial/industrial space or more.

<b>Table 3.7.6. Heated Square Footage of Commercial and Industrial Structures containing Commercial and Industrial Uses Located on Parcels Identified as Nonresidential within the Planning Area</b>	
<b>Heated Square Footage (sq. ft.)</b>	<b>Number of Properties</b>
0 to <10,000	55
>10,000 to <30,000	25
>30,000 to <80,000	7
>80,000	5

Source: Henderson County parcel data (July 2010).

Commercial. Commercial lands account for approximately 1.41% of classified lands in the Planning Area (See Table 3.7.1). The most significant concentration of Planning Area commercial uses occur near Interstate-26, along both Upward and Tracy Grove Roads. Additional commercial uses are scattered throughout the Planning Area, primarily along Dana, Ridge, and Sugarloaf Roads (See Figure 3.7.1).

Many Planning Area commercial uses are within commercial zoning districts. The Planning Area contains an OI, CC, RC and seven (7) LC zoning districts (See Table 3.7.7 for general district descriptions and requirements). These zoning districts were originally designated on September 19, 2007 (though some have been expanded through rezoning processes).

<b>Table 3.7.7. Commercial, Office Institutional and Industrial Zoning Districts within the Planning Area</b>					
<b>District</b>	<b>Allows for and Provides...</b>	<b>Scale</b>	<b>Maximum Size (sq. ft.)</b>		
			<b>Single Tenant Structure or Secondary Tenant in Multitenant Structure</b>	<b>Principal Tenant in a Multitenant Structure</b>	<b>Multitenant Structure (Total All Tenants)</b>
OI	Office, institutional and residential development	Compatible with the surrounding community	Unlimited	Unlimited	Unlimited
LC	Retail sales and services, public and private administrations, offices, other uses done primarily for sale or profit, and residential development	Local or neighborhood	10,000 sq. ft.	30,000 sq. ft.	80,000 sq. ft.
CC		Local and community	30,000 sq. ft.	80,000 sq. ft.	Unlimited
RC		Local, community and regional	Unlimited	Unlimited	Unlimited
I	Industrial and heavy commercial development	Compatible with the surrounding community	Unlimited	Unlimited	Unlimited

Source: Henderson County Land Development Code, Adopted September 19, 2007, as amended through July 6, 2009.

**Industrial.** Ten (10) parcels in the Planning Area contain industrial uses of which six (6) are zoned Industrial (I) (See Figure 3.7.1). The I zoning district minimizes conflict between land uses because its regulations seek to minimize the impact industrial uses have on the environment and surrounding uses (See Table 3.7.8).

Two (2) of the identified industrial uses are within the LC zoning district. Manufacturing and production operations smaller than 10,000 square feet are permitted within the LC zoning district. Site D1 currently exceeds, but site G4 appears to be within the maximum square footage applied. Given preexisting status in the zoning district, these operations may expand but may have some limitations.

The remaining two (2) identified industrial uses are located in residential zoning districts (R1 and R2R). Industrial uses are not permitted in the R1 district (B14 is located in the R1 district). The R2R allows manufacturing and production operations and machining and assembly operations provided the operations are 10,000 square feet in size or smaller. It appears site A25 exceeds the maximum square footage; however, the preexisting status in the zoning district may allow for expansion of the operations with some limitation.

**Vacant Lands.** Vacant lands account for approximately 20.91% of Planning Area classified lands, making it the second most prevalent land use. Vacant lands occur throughout the Planning Area with the largest contiguous tracts located in eastern portions of the Planning Area (See Figure 3.7.1). The majority of Planning Area vacant lands (2,445.81 acres) are located in the R2R Zoning District (See Table 3.7.8).

<b>Table 3.7.8. Zoning Districts and Vacant Land</b>			
<b>Zoning District</b>	<b>Total Acreage</b>	<b>Vacant Land Acreage by District</b>	<b>Percent of Zoning District Acreage Vacant</b>
R2R	11,148.99	2,445.81	21.94
R3	6,109.69	1,465.42	23.99
R1	1,116.60	144.93	12.98
I	547.62	111.85	20.42
LC	304.27	65.12	21.40
RC	140.12	42.62	30.42
R4*	1,242.01	6.07	0.49
CC	141.14	5.46	3.87
OI	68.12	0.25	0.37
<b>Total</b>	<b>20,818.56</b>	<b>4,288.71</b>	<b>20.59</b>

\* The remainder of the lands in this tract is within the Green River Gamelands which, while vacant, is classified as “Governmental” by the Tax Assessor’s Office.  
 Source: Henderson County Tax Assessor data (July 2010).



**Residential Build-Out Scenario.** The Planning Area provides a low-density residential development pattern. Existing residential zoning districts contains lots which average 4.08 acres in size and a density (the number of residential dwelling units divided by total acreage in lots) is less than one (1) unit per every five (5) acres (See Table 3.7.9).

<b>Table 3.7.9. Existing Residential Zoning, Lots, Residences, and Density</b>					
<b>Residential Zoning District</b>	<b>Total Acreage in Lots*</b>	<b>Total Number of Lots</b>	<b>Average Lot Size</b>	<b>Number of Residences</b>	<b>Density (units/acre)</b>
<b>R1</b>	1,040.02	638	1.63	647	0.62
<b>R2R</b>	11,318.83	3,703	3.05	2,838	0.25
<b>R3</b>	5,990.46	541	11.07	318	0.05
<b>R4</b>	1,227.38	8	153.42	0	0
<b>Total</b>	<b>19,576.69</b>	<b>4,800</b>	<b>4.08</b>	<b>3,803</b>	<b>0.19</b>

\*Total acreage in lots is less than zoning district total acreage as lands within right-of-way are excluded from total acreage in lots and included in zoning district total acreage.

Source: Henderson County Official Zoning Map (July 2010), Henderson County data (parcel data and Building Services data) (July 2010) with extrapolations by Henderson County Planning Staff.

Projecting future development in the Planning Area involves considering existing conditions and applying specific assumptions. The following apply to the residential build-out scenario provided herein:

- (1) Existing zoning boundaries remain unchanged;
- (2) Existing lot configuration remains unchanged;
- (3) Standard density (which does not account for higher densities available through conservation efforts or development of multifamily structures) is applied;
- (4) Special subdivision regulations, when applicable, are assumed to be used to maximize density;
- (5) Development is assumed to include both principal and accessory residences to maximize density;
- (6) Existing site-specific conditions and limiting factors (topographical considerations, a parcel’s ability to provide adequate water supply or sewage disposal systems, or deed restrictions, restrictive covenants or conservation easements) are unknown and are not considered; and
- (7) Commercial and office institutional zoning districts, while permitted various types of residential development, are assumed to be developed into nonresidential uses (commercial or office institutional).

Build-out scenarios should be used for informational purposes only and are not intended to accurately predict the future development or population of the Planning Area.

<b>Table 3.7.10. Projected Build-Out at Standard Residential Density</b>				
<b>Residential Zoning District</b>	<b>Permitted Standard Density (units/acre)</b>	<b>Principal and Accessory Residences Permitted</b>	<b>Existing Residences</b>	<b>Unbuilt Potential</b>
<b>R1</b>	4	8,010	647	7,363
<b>R2R</b>	1	11,634	2,838	8,796
<b>R3</b>	0.66	8,682	318	8,364
<b>R4</b>	0.20	520	0	520
<b>Total</b>		<b>28,846</b>	<b>3,803</b>	<b>25,043</b>

Source: Census data (1970 County and 2007 American Communities Survey) and Henderson County data (parcel (July 2010) and structure (July 2010)) with extrapolations by Henderson County Planning Staff.

Approximately 25,043 additional residential units would be required to reach standard residential density within existing residential zoning districts. By the year 2065 (within 55 years), the Planning Area would reach full build-out with 28,846 residences and a population of 62,018 persons. This would be an average density of one (1) unit per each 0.68 acres of land.<sup>5</sup>

**Land Use Trends and Zoning Application.** Large tracts of agricultural and rural lands have comprised the Planning Area since the early 1800's. During the last several decades, development pressure has converted these agricultural and rural lands to use for residential, commercial, and industrial purposes.

The Planning Area's Interstate-26 interchange and interconnected local road network accommodate and encourage continued residential, commercial and industrial growth. The Community Plan's support of the proposed improvements to Interstate-26, Howard Gap Road, and Sugarloaf Road, combined with the improvements to Upward Road which are underway, will continue to support development in the Planning Area.

The availability of public water and sewer within the Planning Area will also make it appealing to development. The City of Hendersonville provides public water service mainly along the westernmost portions of Upward, Dana and Sugarloaf Roads. Public sewer is currently available within the Planning Area, running along Sugarloaf Road and Blue House Road. Where these systems expand development can more easily be accommodated.

The expansion of residential land use is most prevalent in the Planning Area. Over one-half of the Planning Area's existing residential units were built within the last 29 years. It is estimated that by the year 2025 an additional 7,765 individuals will move to the planning area, occupying an additional 4,206 residences. Commercial and industrial development will likely keep pace with this residential growth as these individuals demand goods, services, and jobs in the Planning Area.

Topographical impediments to development exist, specifically in the eastern portions of the Planning Area. Lands with steeper slopes are prevalent which may discourage development in the short term but not prevent development permanently. Careful application of land use regulations in the areas east of the Ridge may provide additional protection to the area in the face of development pressure. Land use regulations should also be carefully applied to the Green River Gamelands in the event that the State of North Carolina no longer retains these lands.

Identifying key areas to focus services and infrastructure coupled with careful application of residential, commercial, office institutional, and industrial zoning district designations will guide land use and development trends in the future.

### *Land Use and Development Goals and Objectives*

**Goal LUD 1. Industrial (I) Zoning District Map Amendment.** To increase opportunities for industrial development within the Planning Area and in the vicinity of the Interstate-26 interchange at Upward Road, I zoning should be applied to those properties bounded by McMurray Road and Ballenger Road and located between the existing Regional Commercial (RC) and Industrial (I) zoning (See Map 8, Land Use Recommendations (Pg. 67)).

**Goal LUD 2. Residential One (R1) Zoning District Map Amendment.** To provide for increased residential density in the vicinity of existing commercial and industrial development, where

<sup>5</sup> Assuming the following: (1) persons per household remains constant from 2020 forward (2.15 persons per household); (2) population growth continues to trend based on Census data (See Table 2.16); and (3) each residential unit accommodates only one (1) household;

water and sewer infrastructure are anticipated, R1 should be applied to those properties located along Howard Gap Road and South Orchard Road and between Upward Road and Orchard Road (See Map 8, Land Use Recommendations (Pg. 67)).

### 3.8: COMMUNITY CHARACTER AND DESIGN

**Existing Community Character.** The citizens of the Planning Area uphold its “rural character”. Defining rural character is difficult given that different people have different interpretations of the meaning of “rural”. When an area has rural character it generally contains a large amount of farmland, woodland, and undeveloped open spaces combined with lower-density residential development patterns and nonresidential development that is usually small and locally owned. The Planning Area’s rural character is unique from other areas of the County, resulting from both its natural setting and the historical interaction of its citizens with the environment.

The Planning Area’s natural setting is unique because of its topography, streams, and climate. Its most defining natural feature is “The Ridge” which follows the crest of the Blue Ridge Mountains along Upward Road and Ridge Road. The rolling hills to the west of the Ridge and more rugged mountain ranges to its east provide scenic views unique to the area. Early settlers recognized the area’s climate as ideal for farming. Apple and other types of farming remain central to the rural character of the Planning Area. The rolling hills, which are more easily developed, contain a significant portion of the County’s residential and nonresidential development. The more rugged terrain east of the Ridge remains largely undeveloped with extensive woodlands, particularly in the Green River Game Lands.

Another defining characteristic of the Planning Area’s rural character is its strong sense of community and the community gathering places that facilitate interaction and community building. The community has also established its own community centers and gathering places including the Dana Park (currently leased by the County) and Upward Community Center.

Businesses also play a key role in keeping the community connected. Nonresidential (commercial, office institutional, and industrial) development has long been a part of the Planning Area. Existing nonresidential uses are scattered primarily along Upward/Ridge Road, Dana Road, Tracy Grove Road, and Sugarloaf Road. These include a mix of strip developments, manufacturing and production operations, and warehouses. Many of the nonresidential uses are located in traditionally industrial structures (metal prefabricated buildings). Still other nonresidential uses are located in more architecturally traditional structures with similar building materials (brick, stucco, horizontal siding, and metal roofs) and color palettes (beige, white, red and blue). The Planning Area’s more extensive nonresidential development patterns reflect the



economic significance of the Planning Area to the County.

The Planning Area also surrounds several additional nonresidential uses, primarily composed of formula businesses (McDonalds, Zaxby's, Cracker Barrel, and other stores and restaurants that have standardized services, décor, methods of operation, and other features that make them virtually identical to businesses elsewhere), which have been annexed by the City of Hendersonville.

**Preserving Community Character and Accommodating Development.** Preserving the rural character of the Planning Area will become more challenging given development pressure the community will continue to experience. The community's definition of rural character is essential to its preservation. By identifying the qualities that create the rural character of the area, a community can then seek to identify how it may be preserved. Rural character preservation in the Planning Area can be achieved by identifying target areas for higher-density residential and nonresidential development, applying appropriate design standards, protecting open spaces and agricultural lands, and identifying target areas for low-density residential development with limited nonresidential activity.

**Existing Design Standards.** Rural community character is impacted by residential and nonresidential (commercial, office institutional and industrial) uses and developments. The LDC provides limited regulations that address landscaping, buffering, and signage. Many of the existing nonresidential developments and uses in the Planning Area were developed prior to the implementation of these regulations and were not required to conform to these standards. Any new development must comply with any requirements outlined in the LDC, and include:

Buffers: required to separate industrial, commercial (including office institutional), and residential development.

Parking Lot Landscaping: required where ten (10) or more spaces are proposed (the amount of plant material increases for each additional five (5) parking spaces).

Planting Strip: required where parking is proposed within 20 feet of the property line.

Street Trees: required where a major subdivision of land occurs.

Screening and Fencing: required for specific nonresidential uses

Prohibited Signs: include signs (1) placed in the right-of-way; (2) resembling and/or obscuring traffic signals; (3) obstructing access to drives, doors, walks, windows, fire escapes or fire escape routes; (4) which are animated and/or flashing; (5) on the surface of lake/river water; (6) on vehicles parked and located for the purposes of displaying such sign, where such vehicle is either a part of the sign or sign structure; and (7) billboards (380 feet in area or greater).

Sign Area and Height Limitations: determined based on sign type and applicable zoning district.



**Community Character and Design Goals and Objectives**

**Goal CCD1. Community character should be protected for the Dana Planning Area, with particular attention to the “Downtown Dana” area and Interstate-26 interchange at Upward Road.** The County should consider providing guidelines, standards and regulations for nonresidential development in the Planning Area.

The following should be addressed throughout the Planning Area, with various methods, and with variations by area (i.e. Downtown Dana and the I-26 interchange at Upward Road may address these issues differently from one another or use different methods to achieve the same goals):

- Building orientation (fronting the street and located proximate to the street);
- Façade articulation (changing alignment and/or building material used);
- Glazing (preventing long facades without windows);
- Parking orientation (locate in the side or rear of the business);
- Provision of pedestrian access within and between developments; and
- Signage (in scale with building) and landscaping installation.

The County should also consider addressing the following for the “Downtown Dana” area (see Figure 3.8.1) specifically:

- Architectural character consistent with rural residential development of the area including: building materials (wood siding, stone, brick), porches and covered walks, and roofs (pitched roofs and metal roofs); and
- Preservation of the views of Refuge Baptist Church (addressing building height and setback to achieve visibility)

Finally, the County should consider addressing the following for nonresidential development located at the I-26 interchange at Upward Road (See Figure 3.8.2): interconnectivity/traffic flow management (through the addition of street connections and roundabouts or other traffic calming measures) and architectural character including building materials (wood siding, stone, brick), porches and covered walks, and roofs (pitched roofs and metal roofs).

Figure 3.8.1. Desired Downtown Dana Character

*Upward/Ridge Road Desired*



*Existing*



*Dana Road Desired*

*Existing*





Figure 3.8.2. Desired Typical Development Pattern at Interstate-26 Interchange at Upward Road

