



# CORRIDOR STRATEGY

GRANDFATHER GATEWAY                      NC HIGHWAY 105  
WATAUGA COUNTY                      NORTH CAROLINA

PLANNING \* INSPECTIONS \* ECONOMIC DEVELOPMENT

*The aesthetic quality of the "Gateways" is vitally important to the economic future of the community. Incentives for property owners and the community should be developed to maintain attractive and compatible development that will enhance the total economic value of the community*

*Citizens' Plan for Watauga*

**Not a Regulatory Document**

Gateway Corridor Strategies represent 1 of 3 paths for managing change identified in the Citizens' Plan for Watauga. Creation of these documents is guided by the Planning Principles outlined therein and is intended to be supplementary.

# TABLE OF CONTENTS

I.	BACKGROUND	1
	History • Historic Resources • Corridor Planning Purpose • Process • Allies	
II.	STUDY AREA MAP	4
	Grandfather Gateway Study Area	
III.	ASSESSMENT	5
	Highway Classification • 2018-2027 STIP • Physical Characteristics • Surface Waters • Slope Characteristics Flood Hazards • Soil Characteristics • Geologic Hazards • Natural Resources	
IV.	CHALLENGES	8
	Infrastructure • Water Resources • Potential Threats	
V.	CONTEXT	9
	Local Planning • Foscoe Grandfather Community Council • 2013 CTP • Park-and-Ride • Bicycle & Pedestrian Planning Regional Planning	
VI.	LAND USE & REGULATORY ENVIRONMENT	12
	Land Use • Regulatory Environment • Development Checklist	
VII.	FOSCOE GRANDFATHER MASTER PLAN	13
VIII.	GOALS & STRATEGIES	14
	Sense of Place • Focus on Water Quality • Open Space Preservation • Appearance • Vitality • Economic Development Hazard Mitigation	
	APPENDIX A PREDOMINANT SOIL CHARACTERISTICS	16

## I. BACKGROUND

### History

Until the mid nineteenth century, rough wagon roads were all that connected small towns throughout Watauga County. In 1851, the North Carolina General Assembly granted approval to extend the Caldwell and Watauga Turnpike from Boone into the Watauga River Valley and Shull's Mill, and finally on to Tennessee. The Turnpike served as Watauga County's major transportation route until the turn of the century. In 1915, the Whiting Lumber Company extended the East Tennessee and Western North Carolina Railroad (ET&WNCRR) to Shull's Mill, establishing the first rail terminus within the current boundary of the County. In 1918, the line was finally extended on to Boone. The arrival of the railroad, and the beginning of the logging industry, brought profound change to the area on many levels. First, logging operations denuded virgin forests which increased the destructive force of natural occurrences resulting in rapid soil erosion, flood damage, landslide hazards, and wild fires. Second, introducing wage paying jobs on the railroads and lumber yards resulted in the transition from a subsistence economy to a cash-based, market economy. Finally, by connecting Watauga County to the outside world, external influences could easily find their way into the region, ushering in an era of industrialization and modernization.

The "Upper Watauga" region has been dominated by Grandfather Mountain. The original Cherokee name for the mountain was "Tanawha," meaning "a fabulous hawk or eagle." It was named "Grandfather" by pioneers who recognized the face of an old man in one of the cliffs. Notable early explorers to the region included Daniel Boone, who was known to hunt in this area in the 1760's. French botanist Andre Michaux climbed Grandfather in August of 1794 and believed he had reached the highest mountain in all of North America. Harvard botanist Asa Gray came to Grandfather in 1841 and discovered a rare lily that bears his name. Gray's Lily blooms in high grassy areas on Grandfather Mountain in June and July. John Muir, founder of the Sierra Club, visited Grandfather in September 1898. According to an article in American Museum Journal, Muir fell into "poetic raptures" over the view from the top, saying, "I couldn't hold in, and began to jump about and sing and glory in it all." In 1885, Samuel T. Kelsey, who founded the resort town of Highlands, bought options on 16,000 acres that included Grandfather, Sugar and Flattop Mountains (now Linville Ridge). Most of the tracts that encompass Grandfather Mountain were purchased from William Waighstill Lenoir, grandson of General William Lenoir, for whom the Caldwell County town is named. The MacRae family eventually acquired controlling interest in the project, and Donald's son Hugh was elected to head the Linville Improvement Company. He built the Yonahlossee Road from Blowing Rock to Linville in 1892 (now US 221) and developed North Carolina's first mountain golf resort at Linville. The humble beginnings of Grandfather Mountain tourism included a horseback trail winding its way up the slope of Grandfather to an overlook at "Cliffsides." In the early 1900s, the trail was widened to a one-lane road that could be traveled by automobiles. A wooden platform was constructed, and a nominal toll was charged to those who wished to drive up and see the view. After the dissolution of the Linville Company in 1952, Hugh MacRae Morton became the sole owner of Grandfather Mountain. He immediately widened the road to two lanes and extended it to the summit, where he built the Mile High Swinging Bridge. In 1968, Morton purchased one male and one female black bear with the intention of letting them loose into the wild. The female bear, named Mildred, refused to revert to the wild, and Grandfather Mountain was required to recapture her and keep her enclosed for her own safety. At first, Mildred met the public at a roadside amphitheater four times every day. Then, in 1973, a beautiful Environmental Habitat was built for Mildred and her family. The habitats have since been expanded to include river otters, deer, cougars and eagles. Grandfather Mountain has been an icon in North Carolina's landscape for generations, offering stunning scenery and unmatched ecological diversity. No longer privately held, Grandfather Mountain State Park opens the mountain's 2,456-acre backcountry to spectacular hiking and backpacking.

The Whiting Lumber Company (later the Boone Fork Lumber Company) established a single-band saw mill in Shulls Mill in 1915, employing many of the area's rural residents. As a result of the new mill, the area experienced sudden and significant economic prosperity. In just three years, the town had built a railroad depot, a movie theater, hospital, housing for rail and lumber workers, commissary, post office and barber shop. The mill was electrically driven by a power plant on Boone Fork, and had an auxiliary steam plant located at the mill. According to reports, some 300 persons were employed before the

timber ran out seven years later and the operation moved to parts of Tennessee and West Virginia. Most residents and businesses also moved out and the mill buildings were dismantled, the land returning to mostly agricultural pursuits. Tragically, the late summer rains of 1940 were stronger than average and a record rainfall fell on saturated ground. Storm water cascaded down the mountainsides swelling streams and rivers. The raging Watauga River virtually wiped out the entire community, including the railroad and power plant which were never rebuilt. Later in 1956, North Carolina Highway 105, connecting Boone and Linville, was built on the old ET&WNCRR railroad bed.

The new highway provided the means for regional travel and the beginning of the tourism industry. During the fall of 1962, pioneers Harry and Grover Robbins envisioned a golf course, clubhouse, and chalets perched on the hillsides above Claude Shore's farm. The Robbins family, which also created nearby Tweetsie Railroad, already had an established history in the town of Shulls Mill, owning a small hotel there. By April 1963, the golf course, designed by George Cobb, was launched along with the course clubhouse and three alpine style chalets designed by Architect Claus Moberg. In January 1964, "Hound Ears" Golf and Ski Resort, so named from the hillside rock formation that resembled a hound's ears, opened for its first season of skiing. Later that spring, the golf course opened and remains open to this day. Another early tourist attraction, Mill Ridge Ski Resort, operated from the late 1970s through the 1980's when larger resorts in Seven Devils, Sugar Mountain and Beech Mountain began to dominate the ski industry. Complementing the ski industry and dependent upon tourism, multiple shops currently operate along the Highway 105 corridor between Boone and Tynecastle.

### Historic Resources

A number of interesting historic and cultural resources are found within the study area:

- WT 251 Porch-Townsend House
- WT 253 Jestes House
- WT 272 Shulls Mill General Store
- WT 273 Shull Family House
- WT 300 Marjon's Antiques
- WT301 Bark House
- WT 302 James Aldridge House
- WT 303 Harrison Aldridge House
- WT 304 Prout-Atkins House
- WT 376 Hollars Family House



WT 272 - Shulls Mill General Store



WT 272 - Whiting Lumber Company Commissary, circa 1918

### Corridor Planning Purpose

Rural corridors have a critical relationship to economic health and quality of life in Watauga County. Rural corridors link the region's more urbanized areas and serve as lifelines for rural residents travelling to major employment centers, educational institutions, regional medical facilities, recreation areas and other desired destinations. These corridors also provide visitor access to the region's ski resorts, outdoor recreation areas, restaurants, overnight accommodations, choose-n-cut operations, and other local travel destinations. Rural corridors are essential freight routes for agricultural products, building materials, fuel and other supplies local residents rely upon. If we value our rural communities and the outdoor areas beyond that provide our sense of place, then we must care for the rural corridors that connect us to them. We must work strategically to meet personal safety and regional mobility needs while supporting local community growth and corridor improvements that protect environmental quality and preserve our unique rural character.

## Corridor Planning Process

The Watauga County Planning Board's work program continues the task of corridor planning with this third corridor study: NC Highway 105, the Grandfather Gateway Corridor. The three-member Corridor Planning Subcommittee to provide the direction-setting framework. The planning staff began the process of collecting and evaluating existing plans, policies, and implementation tools in play at the local, state, and federal levels. The staff also inventoried existing conditions to begin the process of identifying corridor assets and defining potential corridor issues.

## Corridor Allies

The following partner organizations contribute policy and regulatory strategies to various land and water resources within the study area. Information derived from these agencies has been incorporated into this document where possible.

NC DEQ Division of Water Resources  
NC Department of Agriculture  
NC Wildlife Resources Commission  
NC Department of Transportation  
NC Natural Heritage Program  
NC Clean Water Management Trust Fund  
Pisgah National Forrest & the National Park Service  
Trout Unlimited  
Watauga River Keepers



## North Carolina Ecosystem Enhancement Program

“ The EEP mission is to  
restore, enhance,

### 2009 NC EEP WATAUGA RIVER RESTORATION PRIORITIES

Restoration of DWQ-identified impaired waters through the implementation of strategically located stream, buffer and wetland restoration/enhancement projects.

Protection of high-quality in-stream and riparian habitat through the preservation of headwater areas (via permanent conservation easement agreements with willing landowners).

Implementation of multi-agency cooperative efforts (WRC, NHP, NC DOT, county SWCD, Land Trusts, CWMTF and private landowners) to protect and manage parcels that include rare mountain bogs and other high-elevation wetlands.

Increased implementation of agricultural BMPs (e.g., livestock exclusion fencing around riparian buffers) within rural sub-watersheds.

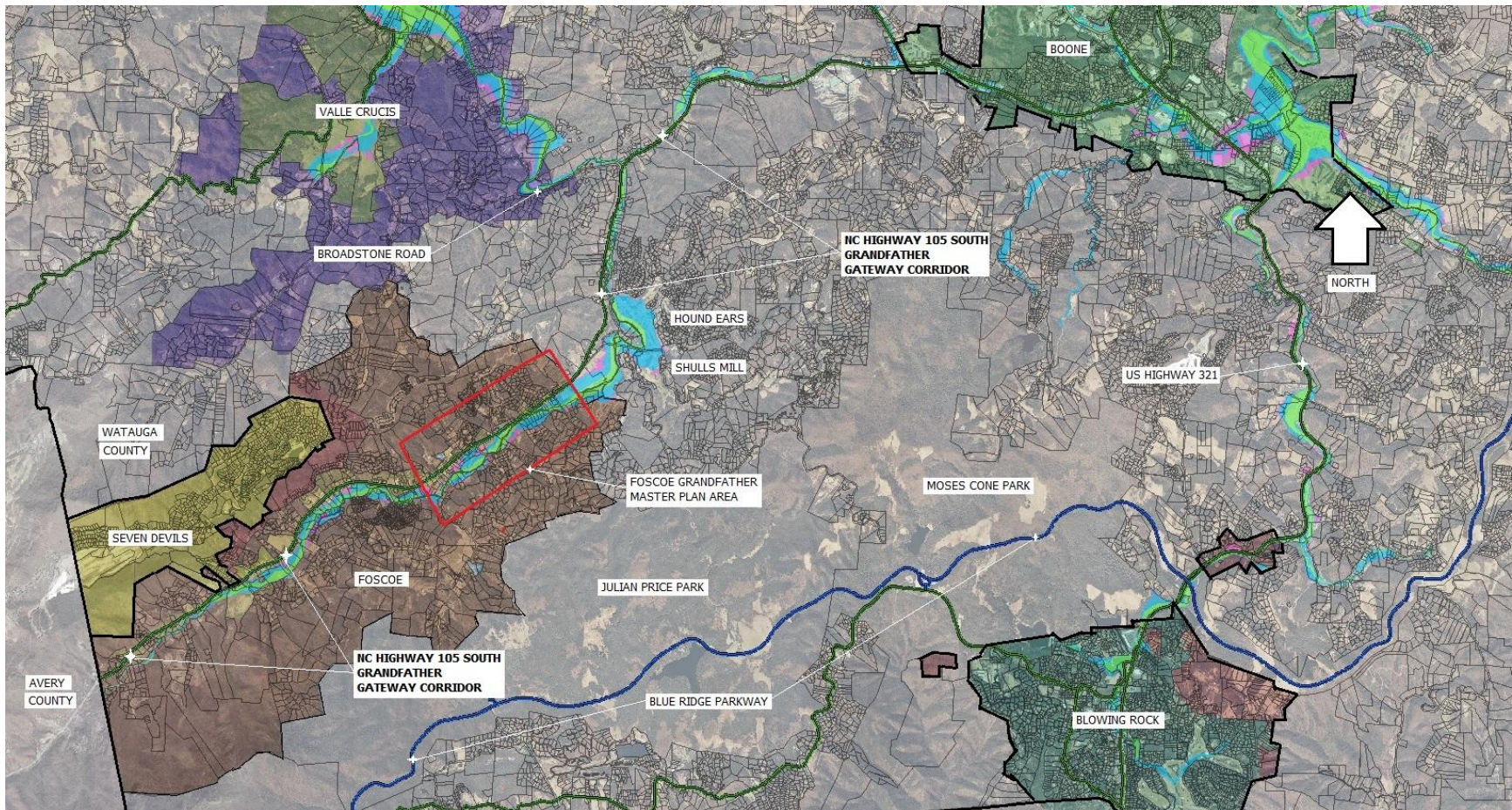
Continuation of local efforts to improve stormwater management within urban and suburban sub-watersheds, including the implementation of stormwater BMPs in and around the municipalities of Boone, Banner Elk and Elk Park.

Improved enforcement of state and local sediment/erosion control rules during new residential and commercial construction.



## II. STUDY AREA MAP

Detailed mapping information for the Grandfather Gateway Corridor is available [here](#).



### III. ASSESSMENT

#### Highway Classification

NC Highway 105 is classified as a ‘Boulevard’ providing moderate levels of volume and mobility at medium speeds. Posted speed limits are 30 to 55 mph and typical cross-sections have two or more lanes with medians having crossovers or turning lanes. From the Avery County line to Baird’s Creek Road, traffic volumes at last count (8/17) averaged 14,000 VPD, exceeding the roadway capacity of 12,100 VPD. From Baird’s Creek Road to the NC 105 By-pass in Boone, traffic volumes averaged 17,000 VPD with a capacity of 19,700 VPD.

#### 2018-2027 STIP

NC DOT District 11 projects currently in planning, design or construction within the corridor study area include:

R-2566	Section A:	NC 105 (SR 1566) Avery County line to Shulls Mills Rd (4.8 mi)	Unfunded
R-2566	Section B:	NC 105 (SR 1566) Shulls Mill Rd to NC 105 By-pass in Boone (6.5 mi) (Includes replacement of bridge north of Broadstone Rd)	Planning & Design in Progress
		Project link: <a href="https://www.ncdot.gov/projects/nc-105-widening/Pages/project-maps.aspx">https://www.ncdot.gov/projects/nc-105-widening/Pages/project-maps.aspx</a>	
R-5915	DB Parkway	New Route – Boone Bypass from Intersection old/new 421 east of Boone to 421/321 west of Boone (Draft STIP 2020-2029)	
WATAA0008-T		Potential Park & Ride Lot	

- Note: 1) Bicycle Facilities are planned concurrent with NC 105 improvements.  
2) Replacement of Bridge #55 on Shull’s Mill Rd (B-5118, SR 1557) has been completed.  
3) Bridge #6 on Church Rd (SR 1559), and Bridge #93 on Baird’s Creek Rd (SR 1109), have been identified as being structurally deficient.

#### Physical Characteristics

The NC 105 Corridor is extremely rugged. The terrain is steep and subject to slope movement. The land is rocky and the soils poor. Large wooded tracts with limited access are at substantial risk to wildfire damage. The steep and narrow Watauga River valleys are subject to flash flooding. The lowland floodplains through Foscoe and Shull’s Mill pose serious risks to life and property resulting from flood events.

#### Surface Waters

The corridor study area is within the Watauga River Watershed. Land cover within this watershed consists of significant amounts of forested and agricultural lands. Recent commercial and residential development, which accounts for a relatively small amount of land within the watershed, has been highly concentrated along the Highway 105 corridor and has encroached into riparian buffer areas along the Watauga and its tributaries. This concentration of development has unfortunately resulted in habitat degradation, nutrient and sediment loading, elevated water temperatures and a myriad of undesirable habitat and flood plain impacts. Despite the concentration of development, the Watauga and its tributaries remain rich in natural assets and are classified by the NC Division of Water Resources (DWR) as High Quality Waters and Trout Waters. Development activities within designated High Quality Waters are subject to density restrictions and storm water run-off rules. The Trout Waters designation limits stream buffer encroachment and controls the timing of and level of riparian buffer encroachment. A complete guide to surface water classifications is available at North Carolina DWR’s website. Overall River Basin Restoration Priorities (RBRP) document has been prepared by the North Carolina Ecosystem Enhancement Program (EEP) for the Watauga River Basin. This document provides an assessment of current watershed characteristics and establishes goals for watershed protection, enhancement and restoration. Additional information is available on NC DEQ website [2018 Watauga River Basin Water Resources Plan.](#)



### Slope Characteristics

Steep slopes are common throughout the region and prevalent within this corridor study area. Much of the undeveloped land along the corridor is steep and rocky. Adequate access is also a challenge.

### Flood Hazards

The majority of the level or gently sloping land along the Watauga River and its tributaries are FEMA designated Flood Hazard Areas. The county has many such flood prone areas, some located in much larger drainage basins, impacting a significant number of municipal and county residents. Though flooding may be the greatest natural hazard facing the corridor, tools are available to mitigate flood hazards through the National Flood Insurance Program (NFIP). It is worth noting there are more NFIP policies (and more NFIP claims) in Watauga County than any other county in the High Country. The county is committed to their flood plain management program and participates in the NFIP. Participation makes flood insurance available to county residents providing them the opportunity to recover losses from flood damage. In order to participate, the county has adopted local Flood Damage Prevention Ordinance regulating new development activities in designated areas. The Flood Damage Prevention Ordinance and Special Flood Area maps are available to the public at the Watauga County Planning & Inspections Department and County GIS website. Detailed floodplain mapping of Special Flood Hazard Areas is also available on the [Flood Risk Information System](#) (FRIS) website. The Planning & Inspections Department provides flood risk information free of charge upon request.

### Soil Characteristics

Soil surveys provide information useful for land use planning purposes. The survey provides a rating system for various land uses based upon the characteristics of the soil. Ratings are given for the suitability of the soils to accommodate agricultural uses, recreational uses, sanitary facilities and urban level development activity (residential/commercial/industrial). Predominant soil types are shown on the Study Area Map and the limitations affecting viable land uses are listed in Appendix A. Additional information is available on the [Natural Resources Conservation Service](#) (NRCS) website.

### Geologic Hazards

Steep topography throughout the county contributes to potential landslide hazards on both natural and modified slopes. Watauga has experienced more landslide activity than any other county in the High Country. Although many occurrences have been relatively minor, a 1940 landslide event in the Deep Gap community resulted in 14 fatalities and 32 structures being destroyed or damaged. Since 1940, 51% of the 2,253 identified landslides have occurred on modified slopes. Because the corridor study area is rife with modified slopes created by land development and roadway construction, geologic hazard mitigation planning is critical for protection of public health and welfare. The North Carolina Geological Survey has prepared [Landslide Hazard Maps](#) for Watauga County in order to better understand the underlying geology and the potential hazards associated with both natural and man-made occurrences. Areas along the corridor have been identified as having potential rock slope instability, having rock-slide history and areas of rock fall.

More information on mitigation of landslide and other natural hazards is available in the [High Country Regional Hazard Mitigation Plan Update 2017](#).

May 30, 2018 – A modified slope failure lead to a propane gas explosion that claimed two lives. (Right)



2004 – A modified slope failure at the White Laurel Subdivision resulted in severe damage to numerous structures. (Left)

## Natural Resources

By consolidating information about hundreds of rare species and natural communities, the [North Carolina Natural Heritage Program \(NHP\)](#) ensures that the public is able to get the information needed to weigh the ecological significance of various sites and to evaluate the ecological impacts of development. Their [Conservation Planning Tool](#) provides a valuable means for synthesizing and sharing the priorities of the state's conservation agencies and organizations with planners in government and the private sector to inform decisions and guide conservation efforts statewide.



Wildlife & Natural Resource  
Stewardship in Planning

The NC Wildlife Resources Commission's [Green Growth Toolbox and Handbook](#) is a guide created to provide local governments with tools for growth management that conserves wildlife and natural resources.

The [Preferred Development Design Guide](#) is another product of the NCWRC created for local governments to provide the development community with voluntary standards for conservation planning.

## IV. CHALLENGES

### Infrastructure

The Foscoe-Grandfather study area has developed at greater than average density due in large part to a significant number of private Waste Water Treatment Plants (WWTP). Subdivisions, condominiums, commercial strip centers, apartments and resorts from Tynecastle to Willow Valley treat large volumes of waste discharging effluent into the Watauga or its tributaries. According to NC DEQ Division of Water Resources, 16 private WWTP operators discharge a total nearing 1 MGD/Avg. ( 12 are in the immediate Foscoe area) Most of this infrastructure is aging, and aging equipment may be prone to failure. Such an event would cause untreated waste to enter the waterway resulting in serious impact to water quality. The residents of Foscoe have been concerned about this issue for quite some time. In addition to significant waste water discharges, an abundance of private water supply systems and residential users on private wells place significant water demands on the aquifer. To analyze these conditions and evaluate alternatives for water supply and waste water disposal needs for major highway corridors, the County hired Engineering & Environmental Consultants Draper Aden. Although dated, their 2001 evaluation quantified current and future demands, current capacities and potential solutions for addressing long term needs.

Based upon the study, the following Conclusions where reached relative to the NC 105 Corridor:

*Water service to the Foscoe region should be planned for near term implementation through a self supporting local water system. The initial installation should include frontage service with potential expansion.*

*Sewer service to the Foscoe region should be considered using a self supporting local sewer system. Development of service to frontage properties should be planned and a potential connection to the Town of Seven Devils facility should be investigated.*

Recommendations for the Foscoe region included:

*Conducting a detailed study to verify the feasibility of water and sewer system development.*

*Completing further engineering analysis to identify specific facilities and financing options.*

### Water Resources

A more recent comprehensive overview of water resources in the High Country Region was prepared by the High Country Council of Governments in 2010. This [High Country Water Resource Plan](#) is available to local governments for water resource planning, development, and protection. As most counties in western North Carolina are dependent upon wells from fractured-bedrock aquifers, local officials are concerned about the sustainability of the resource for support of economic development and population growth. In response to this growing concern, the US Geological Survey compiled more than 1,500 well records for Avery and Watauga Counties as part of a [Study of Ground-Water Resources](#). This study found a range of well yields in the two counties from 0 to 400 gallons per minute. Total depth of the wells ranged from 20 to 1,204 feet below land surface, and depth to primary fracture zones ranged from 25 to 1,000 feet. Additional information, mapping resources and an inventory of well yields is maintained by the NC Geological Survey.

### Potential Threats

Threats to the corridor include a reduction in the highway Level of Service (LOS) and safety, loss of rural character, fragmentation of wildlife corridors, the degradation of water quality caused by point source and non-point source pollutants, the potential for property damage and loss of life from flood hazards caused by heavy rains and/or dam failure, landslides, or wildfires.

---

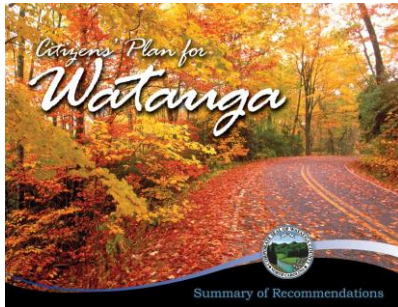
*Sediment, a nonpoint source pollutant, is the most widespread cause of stream degradation and potential impairment in the Watauga River basin.*

---

## V. CONTEXT

### Local Planning

The [Citizens Plan for Watauga](#), the Watauga County long-range plan, notes that our highway corridors are both distinct and constantly changing. In addition, because of their intrinsic value to the community, managing change within these ‘gateway corridors’ should be guided by the following principles, arranged categorically:



**Population Density**  
*Population densities are or will be substantially higher than in other unincorporated areas of the county.*

**Land Use**  
*Land use patterns are more complex with mixed residential densities & commercial concentrations, including industrial & institutional complexes.  
Strive to avoid incompatible land uses and maintain minimum standards of quality for development.*

**Economic Development**  
*Aggressively pursue economic activity within gateway corridors.  
Develop appropriate infrastructure to sustain an ongoing economic development program.*

**Essential Services**  
*Develop infrastructure cost/benefit analysis to adequately evaluate provision of essential services.  
Planning for essential services should be conducted within a regional framework.*

**Environmental Consideration**  
*Strive to identify and protect sensitive environmental areas.  
Incorporate natural assets into future preservation projects.*

**Planning & Organizational Structure**  
*All aspects of planning should reflect the quality of life theme.*

### Foscoe-Grandfather Community Council

Citizens in Foscoe established a Community Council in the late eighties to evaluate growth-related issues and recommend actions to address future growth and development within the community. The Council created a Community Plan representing the residents’ vision for future growth. The Plan’s goals included establishment of a community center, adoption of development regulations, protection of water quality, creation of a citizen’s communication network, plans for centralized waste water treatment, and traffic controls on NC 105.

The [Foscoe-Grandfather Community Zoning Ordinance](#) was adopted in 1990 and has provided the regulatory framework to address land use and growth related issues for nearly 3 decades. The ordinance created 4 zoning districts and established allowable land uses, development densities, and regulations governing land development and re-development activities.

### 2013 Comprehensive Transportation Planning

NC Highway 105 is one of several principal highways in Watauga County that form the backbone of the region’s transportation network. The 2013 [Watauga Comprehensive Transportation Plan](#) (CTP) is a multi-modal transportation planning document covering highway, public transit, bicycle and pedestrian planning needs through 2040. The NC Highway 105 widening project is included in this document. This multi-jurisdictional planning document was prepared by the NCDOT assisted by a local advisory committee, and adopted by Watauga County and all its municipal partners.

**IMPLEMENTATION OF THE PLAN IS GUIDED BY THE FOLLOWING GOALS:**

- Protect environmentally sensitive areas.*
- Be financially responsible with the transportation system.*
- Enhance transportation elements that are important to economic vitality.*
- Provide efficient movement of all transportation modes.*
- Pursue measures that reduce vehicular traffic and dependence.*
- Ensure connectivity within the County and Region.*
- Ensure all construction and improvements are compatible with the local character of the area by minimizing urban features of road projects.*
- Consider the needs and benefits of all stakeholders*



**MULTIMODEL TRANSPORTATION PLANNING**

Multi-modal planning refers to transportation and land use planning that considers diverse transportation options, typically including walking, cycling, public transit and automobile, and accounts for land use factors that affect accessibility.

**Park-and-Ride**

The CTP proposes park-and-ride lots at several locations along major routes. The intersection of NC 105 and Shulls Mill Road in Foscoe is one location identified within the corridor. Coordination of park-and-ride lots along transit routes provides residents with alternative modes of transportation to and from their work place, home, shopping or leisure activities.

**Bicycle/Pedestrian**

The CTP proposes incorporation of bicycle facilities as roadway improvements are made and funding is available. Recommended improvements depend upon the design of the roadways and may include provision of dedicated bike lanes, paved shoulders, or wider outside lanes. NCDOT project R-2566 proposes widening of NC 105 from Shulls Mill Road east to the NC 105 By-pass. Improvements include replacement of Bridge 5 across the Watauga River and construction of a turn lane at Broadstone Road. Paved shoulders (shown right) are recommended.



**Regional Planning**

Numerous long range plans have been created and updated over the years for the High Country region. These plans reflect a broad community vision for the future and are developed to influence local plans and policies on growth, development, natural resource protection and public safety.



The [High Country Regional Trail Plan](#), funded by the North Carolina Division of Parks & Recreation, is utilized by local governments for coordinated trail improvements. The plan identifies nearly 400 miles of proposed trails providing linkages between Mountains-to-Sea and Appalachian Trails, connections between public lands, routes along abandoned corridors and following river valleys. Within the corridor study area, the Laurel Creek – Watauga River Trail is a proposed river valley trail following Laurel Creek from Boone down and through the Watauga River Valley in Valle Crucis.

The [High Country Regional Bike Plan](#) was created to increase bicycle safety and mobility in the High Country region. The plan’s major objectives are to recommend facility improvements supporting regional connectivity and to establish recreational routes designed for tourism and economic development purposes. As noted above, the CTP encourages incorporation of new bicycle facilities as roadway improvements are made. The Regional Bike plan envisions 4-6’ paved shoulders along this segment of Highway 105.

The [Boone Area Outdoor Recreation Plan](#), produced by the Watauga County Tourism Development Authority, creates a unified vision for the establishment of outdoor recreation infrastructure and is a leveraging tool for local funding. Multi-use greenway trails are one of the major initiatives of this plan. The “Grandfather Valley Greenway” is 1 of the 5 area greenway projects proposed. As envisioned, this multi-use facility would follow the Watauga River from Grandfather Mountains popular Profile Trail to the Highway 105 crossing at Broadstone Road. The plan states “a greenway trail along the Watauga River corridor will link a growing assortment of communities and businesses and provide a pedestrian friendly alternative to the increasing traffic of NC 105.” In addition, the Bear Paw State Natural Area is identified as “ideal” for hiking trails and a plan for trail creation is a near-term objective. Paddle Trails, another major outdoor recreation plan initiative, offer recreational opportunities for kayakers and canoeists on local navigable rivers. However, access can be very difficult due to steep terrain, lack of parking, lack of public land or formal public facilities. To help address issues with access, the plan provides an overview of 6 proposed paddle access points, stretching across 15 river miles, from Shulls Mill to Guy Ford Road. To date, several access areas have either been completed or are in process. Access to one of the most popular areas, the “Upper Gorge Section”, has been secured by the WCTDA with funding provided by the NC Recreation Trail Program. The Upper Gorge access, located at the intersection of Highway 321 and old Watauga River Road, provides public parking facilities, boat launch area, picnic shelter, and an informational kiosk. Efforts are well underway for similar access areas for the “Lower Gorge Section”, renowned Class IV and Class V rapids, located at Guy Ford Road.

The [High Country Hazard Mitigation Plan](#) is an extensive regional plan that identifies and profiles a number of natural and human-caused hazards in the area that threaten public health and safety. Natural hazards such as floods, landslides, winter storms, severe thunderstorms, and wildfires have the potential to damage or destroy public and private property, disrupt the economy, and impact quality of life. The region is also susceptible to human-caused hazards, including chemical releases and hazardous material spills. Though we cannot eliminate all hazards, we can lessen the potential impact upon our community and our citizens. By minimizing the impact of multiple hazards upon our built environment, we can prevent such events from resulting in complete disasters. The Hazard Mitigation Plan provides an assessment of community vulnerability to all hazards and recommends mitigation tools and strategies to help prioritize mitigation actions which present the greatest risk to lives and property.



May 18, 2018 – Adams Apple Drive, a private roadway, collapsed leaving 25 homeowners with no access to their property.



May 18, 2018 – one of several bridges over the Watauga River is over-topped impeding access residents and emergency personnel.



November 22, 2016 – A state of emergency was declared as the Horton wildfire consumed nearly 800 acres in Watauga County near Blowing Rock.

## VI. LAND USE & REGULATORY ENVIRONMENT

### Land Use

Our study area runs approximately 9 miles, from the Avery County line to the NC 105 By-pass in Boone. Currently, there are numerous residential and small commercial land uses situated along the 3-lane section of the corridor (Avery Co line east into Foscoe). Foscoe is dominated by commercial small business development from the Country House Village at the bottom of the 3-lane east to Twin Rivers. From Twin Rivers east to Baird's Creek Road, there are a few small businesses converted from and inter-mixed with, residential dwellings. Medium and large tracts remain undeveloped through this area and further east along the corridor leading into Boone due to access difficulties, steep slopes, poor soils and /or lack of interest. Just outside of Boone, a number of much larger commercial/industrial land uses have been established. Many of these uses are now regulated under the county High Impact Land Use Ordinance. As such, there are regulatory requirements governing their expansion, reconstruction, discontinuance, and permitting. Asphalt Plants, Redi-Mix Concrete, Quarry/Stone Crushers, Bulk Storage Facilities, and Commercial/Industrial uses having an aggregate footprint 50,000 S.F. and above, are all subject to the High Impact Ordinance.

### Regulatory Environment

Beginning in the early 70's, the county began planning for its growth by creating long-range plans and adopting ordinances governing specific land uses and land development activity.

Ordinances developed to control specific land uses include:

- 1) Wireless Communication Towers Ordinance
- 2) Sexually Oriented Businesses Ordinance
- 3) High Impact Land Use Ordinance (numerous categories of Commercial & Industrial land use)
- 4) Ordinance Governing Subdivisions and Multi-Unit Structures
- 5) Foscoe-Grandfather Community Zoning Ordinance
- 6) Valle Crucis Historic District Ordinance
- 7) Wind Energy Systems Ordinance
- 8) Manufactured Home Parks Ordinance

Ordinances containing standards for controlling land development activities include:

- 9) Height of Structures Ordinance
- 10) Sign Ordinance
- 11) Flood Damage Prevention Ordinance
- 12) Erosion & Sedimentation Control Ordinance
- 13) Watershed Protection Ordinance

### Development Checklist

In the mountains, site preparation costs have a significant impact on overall project costs and tend to trickle down to the end user. In Watauga County, due diligence demands a complete understanding of site constraints regardless of the type of development proposed. This document, coupled with a good land development guide, such as the National Association of Home Builders' [Land Development Checklist](#), will aide in the site selection process and becomes a valuable tool for property owners, realtors, site developers, builders, and government agencies alike.



## VII. FOSCOE GRANDFATHER MASTER PLAN

A more detailed and comprehensive master plan for the Foscoe Highway 105 Corridor properties is in order. A master plan would encourage further investment and future growth that meets the goals and expectations of Foscoe residents. While the scope of such a plan is yet to be determined, but would likely include Highway 105 properties between Seven Devils and Twin Rivers.

Working in concert with other corridor allies, a master plan reflecting the vision of Foscoe's future would include elements such as highway traffic calming devices, intersection improvements, a signage and wayfinding program, and enhanced streetscapes including pedestrian, landscape and stormwater amenities.

A master plan would incorporate adopted regional plan elements such as transportation improvements, bike plans, greenways and recreational trails. Hazard Mitigation Plan goals and recommendations would be included as well within a single document.



San Juan Capistrano Master Plan



Town of Stanley, NC CBD Master Plan Workshop



Town of Stanley, NC Citizen Participation



Highway 105 Looking East @ Church Street Intersection



## VIII. GOALS & STRATEGIES

New development, redevelopment, agricultural, and forestry activities shall be guided by planning principles established in the Citizen's Plan and the following Grandfather Gateway Corridor Goals and Strategies:

### **GOAL #1: SENSE OF PLACE**

Strategies: Create a strategy to identify and promote historic and cultural resources related to extension of the ET & WNCRR, establishment of logging operations in Shull's Mill, and the era of early industrialization.

Create a strategy to promote the history of NC Highway 105 from "Turnpike" to modern highway providing regional traffic to a growing and thriving tourist destination.

Recognize Grandfather Mountain, Hound Ears Golf & Ski Club, Mill Ridge Ski Resort and other early pioneers of the tourism industry.

Support current tourist-oriented business and attractions and encourage development of complimentary land uses.

Encourage deployment of a countywide way-finding system highlighting tourist destinations and unique community identities.

Develop a detailed Master Plan for the Foscoe-Grandfather Community as described within this document.

Support implementation of regional bike and hiking trails in addition to multi-purpose greenways and paddle trails.

### **GOAL #2: FOCUS ON WATER QUALITY**

Strategies: Maintain support and investigate the potential expansion of the county's existing program for proper disposal of chemicals and toxic substances likely to end up in the water supply.

Rigorously enforce storm water quality measures required for new development and re-development activities within the Watauga River basin.

Participate in multi-agency efforts (NC DEQ Division of Water Resources, NC Wildlife Resources Commission, NC Clean Water Management Trust Fund, Trout Unlimited, Watauga River Keepers) and private landowners to protect and manage water resources.

Consider and support educational program opportunities.

Rigorously enforce flood plain management rules and discourage development activities within Special Flood Hazard Areas.

Encourage new development to connect to existing community wastewater treatment systems where possible. At the same time, explore alternatives to multiple private systems.

**GOAL #3: OPEN SPACE PRESERVATION**

Strategies: Recognize the ecological and environmental value of land that may be deemed “undevelopable” by preserving natural environmental hazards such as steep slopes or floodplains and sensitive wildlife habitat and riparian buffers.

Support efforts of local land trusts and similar environmental organizations dedicated to land conservation by targeting areas for conservation.

**GOAL #4: ECONOMIC VITALITY**

Strategies: Promote the use of shared access, access from adjacent roadways, and connectivity between adjacent land uses.

Explore options for multi-modal transportation throughout the corridor.

**GOAL #5: APPEARANCE**

Strategies: Encourage new construction to utilize architectural styles and materials that positively reinforce the area’s traditional rural character and compliment surrounding land uses.

Orient new construction toward the corridor with side or rear parking and low intensity lighting for building exteriors and parking areas.

**GOAL #6: HAZARD MITIGATION**

Strategies: Adhere to Watauga County Mitigation Action Plan

## APPENDIX A - PREDOMINANT SOIL CHARACTERISTICS

**AcD:** Ashe-Chestnut complex, 15 to 30 percent slopes, very rocky.

Land Use Suitability

Agricultural: Unsuitable for Cropland/Orchards/Hay  
Poorly Suited for Pasture  
Suited for Woodland Management

Recreation: Severe limitations due to slope  
Moderate limitations for Paths/Trails

Septic: Severe limitations due to slope/depth to bedrock

Building Site: Severe limitations due to slope/depth to bedrock

**AcE:** Ashe-Chestnut complex, 30 to 50 percent slopes, very rocky.

Land Use Suitability

Agricultural: Unsuitable for Cropland/Orchards/Hay  
Poorly suited for Pasture/Woodland Management

Recreation: Severe limitations due to slope

Septic: Severe due to slope/depth to bedrock

Building Site: Severe due to slope/depth to bedrock

**AcF:** Ashe-Chestnut complex, 50 to 95 percent slopes, very rocky.

Land Use Suitability

Agricultural: Unsuitable for Cropland/Orchards/Hay  
Poorly suited for Pasture  
Poorly suited for Woodland Management

Recreation: Severe limitations due to slope

Septic: Severe limitations due to slope/depth to bedrock

Building Site: Severe limitations due to slope/depth of bedrock

**ArF:** Ashe-Cleveland Rock outcrop complex, 50 to 95 percent slopes, extremely bouldery.

Land Use Suitability

Agricultural: Unsuitable for Cropland/Orchards/Hay  
Unsuited for Pasture  
Unsuited for Woodland Management

Recreation: Severe limitations due to slope

Septic: Unsuited due to slope/depth to bedrock/extensive rock outcrops

Building Site: Unsuited due to slope/depth to bedrock/extensive rock outcrops

**CsD:** Cullasaja very cobbly loam, 15 to 30 percent slopes, very stony.  
Land Use Suitability  
Agricultural: Unsuitable for Cropland/Orchards/Hay  
Poorly suited for Pasture  
Poorly suited for Fraser Fir  
Suited for Woodland Management  
Recreation: Poorly suited due to slope  
Septic: Poorly suited due to slope/rock fragments/seeps and springs  
Building Site: Poorly suited due to slope/rock fragments/highly erosive soil/overland water

**CkD:** Chestnut-Edneyville complex, 15 to 30 percent slopes, stoney.  
Land Use Suitability  
Agricultural: Poorly suited for Cropland/Orchards/Hay  
Suited for Fraser Fir  
Suited for Pasture  
Suited for Woodland Management  
Recreation: Poorly suited due to slope  
Septic: Poorly suited due to slope/depth to bedrock  
Building Site: Poorly suited due to slope/highly erosive soils/ depth to bedrock

**CkE:** Chestnut-Edneyville complex, 30 to 50 percent slopes, stoney.  
Land Use Suitability  
Agricultural: Poorly suited for Cropland/Orchards/Hay  
Suited for Fraser Fir  
Poorly suited for Pasture  
Poorly suited for Woodland Management  
Recreation: Severe limitations due to slope  
Septic: Poorly suited due to slope/depth to bedrock  
Building Site: Poorly suited due to slope/highly erosive soils/ depth to bedrock

**CtD:** Cullasaja very cobbly loam, 15 to 30 percent slopes, extremely bouldery.  
Land Use Suitability  
Agricultural: Unsuitable for Cropland/Orchards/Hay  
Poorly suited for Fraser Fir  
Poorly suited for Pasture  
Suited for Woodland Management  
Recreation: Poorly suited due to slope  
Septic: Poorly suited due to slope/rock fragments/highly erosive soil/overland water/seeps  
Building Site: Poorly suited due to slope/rock fragments/highly erosive soil/overland water

**CtE:** Cullasaja very cobbly loam, 30 to 50 percent slopes, extremely bouldery.  
Land Use Suitability  
Agricultural: Unsuitied for Cropland/Orchards/Hay  
Poorly suited for Fraser Fir  
Unsuited for Pasture  
Poorly suited for Woodland Management  
Recreation: Severe limitations due to slope  
Septic: Poorly suited due to slope/rock fragments/highly erosive soil/overland water/seeps  
Building Site: Poorly suited due to slope/rock fragments/highly erosive soil/overland water

**ChF:** Chestnut Ashe complex, 50 to 95 percent slopes, very stoney.  
Land Use Suitability  
Agricultural: Unsuitied for Cropland/Orchards/Hay  
Poorly suited for Fraser Fir  
Unsuited for Pasture  
Poorly suited for Woodland Management  
Recreation: Severe limitations due to slope  
Septic: Unsuitied due to slope/depth of bedrock  
Building Site: Poorly suited due to slope/highly erosive soil/depth of bedrock

**DeB:** Dellwod cobbly sandy loam, 1 to 5 percent slopes, occasionally flooded.  
Agricultural: Poorly suited for Cropland/Orchards  
Poorly suited for Fraser Fir  
Suited for Pasture/Hay  
Well suited for Woodland Management  
Recreation: Suited  
Septic: Unsuitied due to flooding/wetness/poor filtering  
Building Site: Unsuitied due to flooding

**RdA:** Reddies loam, 0 to 3 percent slopes, frequently flooded.  
Land Use Suitability  
Agricultural: Well Suited Pasture/Hay/Woodland Management  
Suited for Cropland/Fraser Fir  
Recreation: Severe limitations due to flooding/wetness  
Moderate limitations for Paths/Trails/Picnic Areas  
Septic: Unsuitied due to flooding/wetness/poor filtering  
Building Site: Unsuitied due to flooding/wetness

**UkE:** Unaka-Porters complex, 30 to 50 percent slopes, very rocky.

Land Use Suitability

Agricultural: Unsuitable for Cropland/Hay  
Poorly suited for Orchards/Woodland Management  
Recreation: Poorly suited due to slope  
Septic: Unsuitable due to slope/depth to bedrock/extensive rock outcrops/large stones  
Building Site: Poorly suited due to slope/depth to bedrock/extensive rock outcrops

**UkF:** Unaka-Porters complex, 50 to 95 percent slopes, very rocky.

Land Use Suitability

Agricultural: Unsuitable for Cropland/Hay  
Poorly suited for Orchards/Woodland Management  
Recreation: Unsuitable due to slope  
Septic: Unsuitable due to slope/depth to bedrock/extensive rock outcrops/large stones  
Building Site: Unsuitable due to slope/depth to bedrock/extensive rock outcrops/highly erosive soils

## BIBLIOGRAPHY

“Citizens’ Plan for Watauga” 2010

[http://www.wataugacounty.org/App\\_Pages/Dept/Planning/Forms/WataugaPlan.pdf](http://www.wataugacounty.org/App_Pages/Dept/Planning/Forms/WataugaPlan.pdf)

“Watauga County Comprehensive Transportation Plan” 2013/2017

[http://www.watgov.org/main/App\\_Pages/Dept/BOC/Forms/Watauga%20CTP\\_Final\\_Report.pdf](http://www.watgov.org/main/App_Pages/Dept/BOC/Forms/Watauga%20CTP_Final_Report.pdf)

NCDOT “Traffic Volume Maps” 2016

[https://xfer.services.ncdot.gov/imgdot/DOTSUMaps/AADT\\_COUNTIES\\_2016/Watauga/Watauga\\_County\\_AADT\\_2016.pdf](https://xfer.services.ncdot.gov/imgdot/DOTSUMaps/AADT_COUNTIES_2016/Watauga/Watauga_County_AADT_2016.pdf)

NCDENR “North Carolina Natural Heritage Program” 2000

<http://www.ncnhp.org/>

NCGS “Landslides” [NCGS GHMS-3] 2008

<https://deq.nc.gov/about/divisions/energy-mineral-land-resources/north-carolina-geological-survey/geologic-hazards/wataunga-county-hazards-maps>

High Country Regional Hazard Mitigation Plan 2017

[http://www.wataugacounty.org/App\\_Pages/Dept/Planning/links.aspx](http://www.wataugacounty.org/App_Pages/Dept/Planning/links.aspx)

Watauga County Economic Development Commission 2017

<https://wataugaedc.org/>

US Army Corps of Engineers

<http://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/>

US Fish & Wildlife Service - Raleigh

<http://www.fws.gov/raleigh/>

Flood Risk Information System

<http://fris.nc.gov/fris/>

Natural Resource Conservation Service

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/survey/>

HCCOG “High Country Water Resource Plan” 2010

[http://www.regiond.org/FINAL\\_WATER\\_RESOURCE\\_PLAN.pdf](http://www.regiond.org/FINAL_WATER_RESOURCE_PLAN.pdf)

USGS “Inventory of Well Yields in Avery and Watauga Counties, North Carolina” 2008  
<http://pubs.usgs.gov/of/2008/1104/>

North Carolina Conservation Planning Tool  
<https://www.ncnhp.org/conservation/conservation-planning-tool>

North Carolina Wildlife Resources  
<http://ncwildlife.org/Conserving/Programs/Green-Growth-Toolbox>

AppalCart  
<http://appalcart.com/>

HCCOG “High Country Regional Bike Plan” 2014  
<http://www.regiond.org/Bike-Plan-2014-final.pdf>

Middle Fork Greenway Master Plan 2013  
<https://www.middleforkgreenway.org/master-plan/>

HCCOG “High Country Regional Trails Map” 2008  
<http://www.regiond.org/RegionalTrailsMap.pdf>

Boone Area Outdoor Recreation Plan 2011  
[https://envisionbooneareaoutdoors.files.wordpress.com/2011/03/plan\\_web\\_version.pdf](https://envisionbooneareaoutdoors.files.wordpress.com/2011/03/plan_web_version.pdf)

NCDOT “Strategic Transportation Corridors” 2014  
<https://connect.ncdot.gov/projects/planning/Pages/NCTransportationNetwork.aspx>

WCTDA “The Watauga County Outdoor Recreation Plan” 2011  
<https://envisionbooneareaoutdoors.wordpress.com/the-plan/>

Watauga County Land Use/Land Development Ordinances 2014  
[http://www.watgov.org/main/App\\_Pages/Dept/Planning/ordinances.aspx](http://www.watgov.org/main/App_Pages/Dept/Planning/ordinances.aspx)

National Association of Home Builders “Land Development Checklist” 2013  
<https://www.nahb.org/research/land-development/land-use-101/land-development-checklist.aspx>