



CORRIDOR STRATEGY

BLOWING ROCK GATEWAY

US HIGHWAY 321

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.

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I. BACKGROUND

History

The first road connecting the Towns of Boone and Blowing Rock, the Boone-Blowing Rock Turnpike, was completed in 1891. This road was essentially an extension of the Caldwell and Watauga turnpike and was Watauga County's major transportation route into Boone. Initially, the Town of Boone did not see much benefit from all the tourist traffic flowing into Blowing Rock from points south. As Watauga County historian John Preston Arthur noted in 1915, "there are but a few visitors to the town in the summer season, almost all stopping at Blowing Rock and seemingly unconscious of the fact that Boone is on the map at all." That began to change in the 1920's when the county's first hard surface roads started a transportation revolution. Improved roads, along with extension of rail service, fueled a transformation of the local agricultural economy. This unprecedented level of access also brought a dramatic increase in tourist traffic to the area, a trend that would continue to grow and soon arise as the mainstay of the local economy. From its humble beginnings, to its present-day highway capacity, US 321 continues to serve as a vital route for mobility in and through western North Carolina. Highway 321 provides an alternative north-south route to Interstate 77 and traverses through seven western North Carolina counties: Gaston, Lincoln, Catawba, Burke, Caldwell, Watauga, and Avery. US 321 also has six control cities: Gastonia, Lincolnton, Hickory, Lenoir, Blowing Rock, and Boone.

Historic Resources

Several properties with cultural or historical interest are within the US 321 corridor study area. These include:

- WT0261 – Shull House
- WT0265 – Coffey-Broyhill House
- WT0270 – Dougherty House - ASU Founders
- WT0010 – East Tennessee & Western North Carolina Railroad Locomotive #12
- WT0904 – Tweetsie Railroad Theme Park
- WT0757 – The Citadel
- WT0755 – The Main House
- WT0679 – Camp Catawba
- WT0756 – The Cottage
- WT0758 – Cottage in the Woods
- WT0571 – William Wallace Dixon Edmisten House



Gene Autry



Dougherty House

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 second corridor study: US Highway 221-321, the Blowing Rock Gateway Corridor. The three-member Corridor Planning Subcommittee began the planning process with an initial meeting on June 28th, 2017 to provide the direction-setting framework. Following the meeting, 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.

GIS - level planning was prepared with the assistance of Charles Robison, Appalachian State University Intern and Jessica Welborn, GISP, at the High Country Council of Governments. With this information, a number of recommended goals are efficient, more attractive and sustainable highway corridor, serving both visitors and local residents

Corridor Allies

The following partner organizations have already contributed, or expressed intent to contribute, to the realization of the Goals and Strategies outlined herein. Additional information on each of these organizations and their contributions is provided throughout the document.

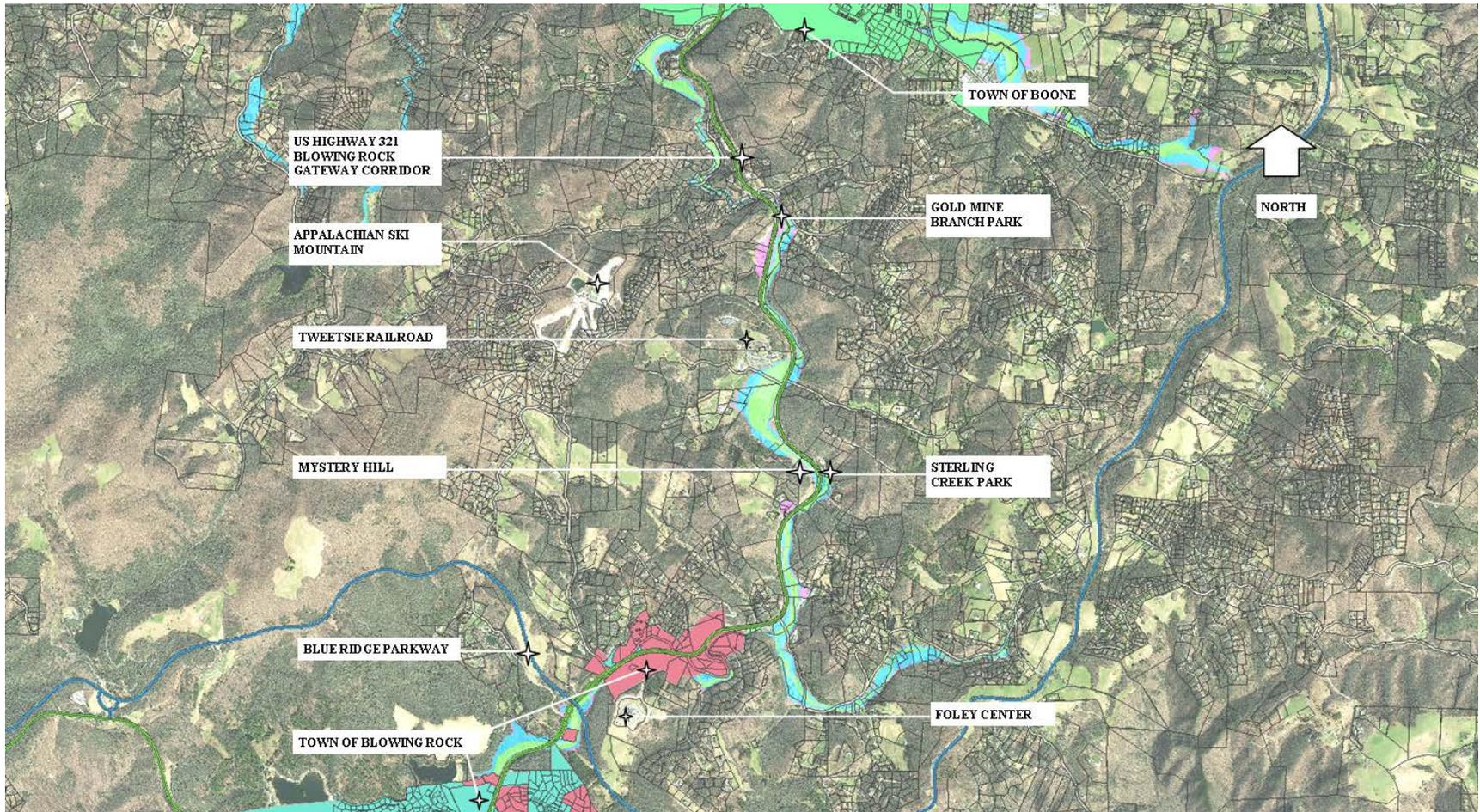
- Appalachian State University
- Appalachian Regional Healthcare
- AppalCart
- Blue Ridge Conservancy
- Faith Bridge United Methodist Church
- High Country Council of Governments
- High Country Pathways
- Middle Fork Greenway
- Mystery Hill
- National Park Service
- North Carolina Department of Transportation
- Town of Blowing Rock
- Town of Boone
- Tweetsie Railroad
- Watauga County



Crystal Wedding Chapel

II. STUDY AREA MAP

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



III. ASSESSMENT

Highway Classification

US 321 is part of the North Carolina Strategic Transportation Corridors Network, meaning it's a major facility that must function at high levels of service in order to continue moving high volumes of people and freight across the region. As development occurs along this corridor, every effort should be made to limit access in order to maintain mobility and connectivity. This facility is intended to provide mobility in Watauga County and, ultimately, connectivity between Johnson City, Tennessee and Gastonia, North Carolina. The posted speed limit is 55 mph.

US 321 is a four-lane undivided facility with 11 foot travel lanes. It is one of the county's most heavily traveled transportation corridors. The 2015 Annual Average Daily Traffic (AADT) volume is 17,000 vpd and capacity is 26,200 vpd (LOS D). The estimated 2040 volume is 22,800 vpd. A portion of this facility between the proposed Boone By-Pass and Niley Cook Road (SR 1532) is projected to be near capacity by 2040.

2018-2027 STIP

The following is a listing of Division 11 projects currently under construction or planned along the US 321 Corridor in Watauga County:



- R-2615** US321/421 Widen to multi-lanes from Vilas to Boone By-Pass.
- EB-5924** Middle Fork Greenway – Section 1
- R-5525** Access Road to Blowing Rock Post-Acute Care Facility. (built)
- B-5177** Replace bridge over Middle Fork New River/realign Tweetsie Railroad Road with Middle Fork Road.
- 17BP.11.R.118** Replace bridge over Middle Fork New River at Aho Road.

Physical Characteristics

Based upon review of available GIS data, the US 321 corridor is located within a public water supply watershed and in close proximity (within 300ft from centerline) of water treatment plants, sewer system discharge points, sewer treatment plants, sewer system and water distribution pipes, trout streams, lakes, wetlands, land trust priority areas, land trust conservation properties, lands managed for conservation, conservation tax credit properties and the Middle Fork Greenway.

Surface Waters

The corridor study area lies entirely within the South Fork New River Watershed. The area surrounding the corridor (Middle Fork of the South Fork) is classified by the NC Division of Water Resources (DWR) as a WS-IV Water Supply Watershed. WS-IV Watershed protection rules apply to all development activities to limit development density and influence the quality and quantity of storm water run-off. DWR's 'Trout Waters' designation limits stream buffer encroachment and controls the timing of and level of riparian buffer encroachment. Other agencies potentially involved in the permitting process include the [US Army Corps of Engineers](#) and the [US Fish & Wildlife Service](#). Multiple agency rules impact development activities, wastewater discharges, agricultural, and forestry practices to varying degrees. It is therefore important to know which agencies and rules are in play early in the planning and development process. A complete guide to surface water classifications is available at North Carolina DWR's website.

Slope Characteristics

Watauga County is generally rugged with diverse slope characteristics. The study area demonstrates these characteristics with elevations ranging from 3,100' along the Middle Fork sharply rising to over 3,750' near the Blue Ridge Parkway.

Flood Hazards

The majority of the level or gently sloping land within the study area lies within FEMA designated Flood Hazard Areas. Development activities within these areas are subject to the Watauga County Flood Damage Prevention Ordinance. Building and land development regulations are available to the public on the Watauga County Planning and GIS websites. Detailed floodplain mapping is available on the [Flood Risk Information System](#) (FRIS) website.

Soil Characteristics

Soil surveys provide information critical 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 and the limitations that affect viable land uses are listed in Appendix A. Additional information is available on the [Natural Resources Conservation Service](#) (NRCS) website.

Geologic Hazards

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.

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 that is 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.

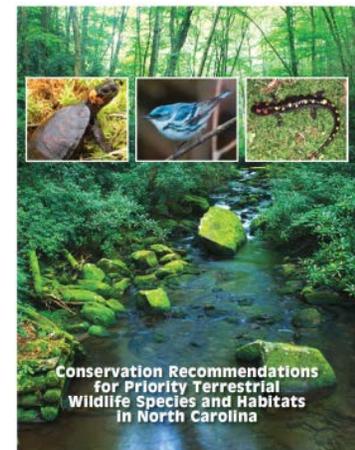


The NC Wildlife Resources Commission's [Green Growth Toolbox and Handbook](#) is a guide created to provide local governments with tools for growth management that conserves wildlife and natural resources.

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.



Wildlife & Natural Resource
Stewardship in Planning



IV. CHALLENGES

Infrastructure

Rural counties have historically relied upon private wells and septic systems to serve their low-density rural populations. In many instances, on-site systems remain the only option to serve Watauga County's rural residents and businesses. In contrast, rural municipalities have developed public water and sewer systems to serve higher density, urban and suburban populations. Today, as growth has expanded beyond traditional municipal boundaries, development pressures are mounting along highway corridors where rural methods of water supply and waste water disposal could compromise environmental quality. To analyze existing conditions and evaluate alternatives for viable solutions for the county's water supply and waste water disposal system needs, Watauga County hired engineering firm Draper Aden. Their 2001 evaluation of the Highway 321 corridor between Boone and Blowing Rock concluded that self-service (private systems) remain the most economical particularly for residential users. Although dated, the cost of providing municipal utility service for the US 321 corridor was the most significant issue in their analysis and the major factor in their determination that service from municipal systems would not be practical.

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.



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.

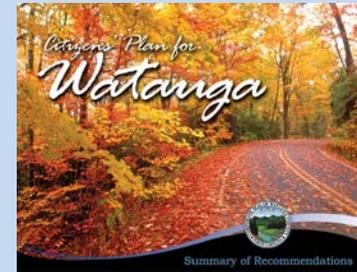
Environmental Consideration

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.



2013 Comprehensive Transportation Planning

US 321 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. 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.

Public Transportation Projects

US 321, WATA0001-T: The CTP proposes a new bus route between Boone and Blowing Rock utilizing US 321.



Park-and-Ride

The CTP proposes seven new park-and-ride locations along major routes. Coordination with transit stops provides residents with alternative modes of transportation to and from their work place, home, shopping or leisure activities.

Bicycle/Pedestrian

Middle Fork Greenway, Local ID WATA0001-M: The CTP proposes a new multiuse path between Boone and Blowing Rock parallel to US 321. Just under a mile has been constructed and is currently in use.

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 (and maximize limited available funding). The Middle Fork Greenway and the Mountains-to-Sea Trail are two such trails located within the study area.

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 improvements in support of regional connectivity and the establishment of County recreational routes designed for tourism and economic development purposes. Route Segment #21 connects the Towns of Blowing Rock and Boone.

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. Segments of the Viaduct Loop and the Blowing Rock Loop, both popular among avid road cyclists, are located within the study area.



The [Middle Fork Greenway Master Plan](#), prepared by High Country Pathways, creates the framework for completion of a multi-purpose trail connecting the Town of Blowing Rock to the Town of Boone. The plan is to follow the Middle Fork to the greatest extent possible.

The [High Country Hazard Mitigation Plan](#), prepared to identify and increase public awareness of natural hazards that present moderate to high risks to the public health and safety and recommend mitigation strategies to address those risks.



Statewide Planning

Strategic Transportation Corridor

[North Carolina's Strategic Transportation Corridors](#) provide a network of high-speed, safe, reliable highways throughout North Carolina. The designation as a SHC is based on mobility, connectivity to activity centers, connectivity to interstates, interstate relief routes, major hurricane evacuation routes and corridors that are part of a national or statewide highway system.

Strategic Corridors Vision

To provide North Carolina with a network of high-priority, multimodal transportation corridors and facilities that connect statewide and regional activity centers, to enhance economic development, promote highly-reliable, efficient mobility and connectivity, and support good decision-making.

Strategic Corridor Goals

Economic Prosperity

Invest NC's transportation resources to maximize economic opportunity.

Mobility and Connectivity

Promote efficient, reliable movement of people and goods between activity centers of statewide or regional strategic significance.

Decision Making

Preserve and enhance natural and cultural resources by maximizing the use of the existing transportation infrastructure to improve quality of life and ensure safety related to transportation activity.

Identify long-term high-priority investment needs to achieve Strategic Corridors Vision

VI. LAND USE & REGULATORY ENVIRONMENT

Land Use

Our study area runs from Tanger Outlets in Blowing Rock north to the Watauga Medical Center in Boone. Currently, there is a relatively even mix of residential and commercial land uses along this section of the highway. Most of the commercial uses are tourist related small businesses that compliment well-known attractions like Tweetsie Railroad, Appalachian Ski Mountain, and Mystery Hill. More recently, Docs Rocks and High Gravity Adventures have opened and rely heavily on visitors. Residential land uses include overnight accommodations, multi-family residential and single-family residential subdivisions.

Recently Appalachian Regional Healthcare (ARH) has expanded Institutional influence in the region with the opening of the Foley Center at Chestnut Ridge. ARH has graciously donated a 2,000 linear foot easement across the Foley Center property to Watauga County for future development of the Middle Fork Greenway.



Public land ownership is also a big part of the land use along the corridor. The National Park Service, North Carolina Department of Transportation (NCDOT), Appalachian State University, Town of Blowing Rock and Watauga County all hold and manage corridor properties. All support continued greenway development. The NCDOT has recently constructed a trailhead parking area in Blowing Rock that also includes a crosswalk and greenway trail section connecting commercial corridor properties to downtown Blowing Rock. The Town of Blowing Rock and Middle Fork

Greenway have received a federal grant to extend the trail through the Blue Ridge Parkway and north through Foley Center property. Tweetsie Railroad, Mystery Hill and Faith Bridge United Methodist Church are among the first privately held properties to actively support greenway development by donating easements along the Middle Fork on which the first Middle Fork Greenway trail section was constructed.

The non-profit Blue Ridge Conservancy is supporting future trail construction by purchasing 12 acres along the Middle Fork New River. This property will provide a vital link between the existing trail at Tweetsie Railroad and Goldmine Branch Park while simultaneously protecting of a mile of riparian stream buffer.



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

All of Watauga County's ordinances contain development standards for residential, commercial and industrial property that are consistent with the municipal jurisdictions of Blowing Rock and Boone.

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 aid in the site selection process and becomes a valuable tool for property owners, realtors, site developers, builders, and government agencies alike.

VII. CONCEPTUAL MASTER PLAN

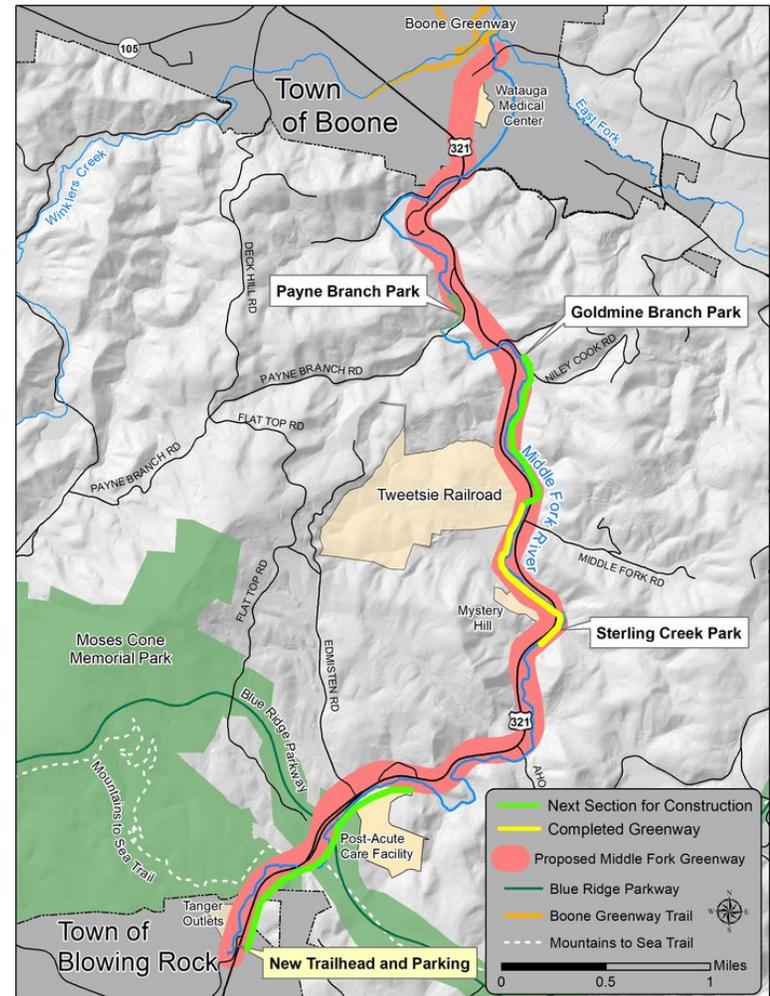
To help understand the build-out potential over time, it is necessary to study the land use potential of corridor properties on a parcel-by-parcel basis. At the same time, key wildlife corridors can be identified and avoided, key wildlife corridors can be studied for potential habitat loss, and public infrastructure projects, such as transit, can be planned. Working in concert with other corridor allies, a master plan and public infrastructure projects, could be created.



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 Blowing Rock Gateway Corridor Goals and Strategies:

- GOAL #1: Creating a Sense of Place**
 Strategies: Actively support the Middle Fork Greenway as a focal point of the corridor
 Encourage complementary land uses such as bike shops, cafes, outfitters, and micro-breweries
 Actively support current tourist-oriented attractions and small businesses
 Support efforts to create a countywide way-finding system that highlights TDAs as visitor destinations
- GOAL #2: Encourage Compact Development Patterns**
 Strategies: Site development in planned growth areas w/potential for transit service
 Concentrate new development in appropriate locations to minimize the extent of land disturbance and promote efficient land use
 Encourage residential and mixed land uses with density and design supportive of transit service
 Support the re-use of existing buildings and the re-development of previously developed property when feasible
- GOAL #3: Create an Open Space Network**
 Strategies: Create an open space network with the goal of preserving sensitive environmental areas such as steep slopes, floodplains, riparian areas, and critical wildlife habitat corridors
 Target areas for conservation easements
 Support the efforts of local land trusts and similar organizations dedicated to land conservation
 Recognize the ecological and environmental value of land that may be deemed “undevelopable” due to flood hazards, riparian buffer requirements, steep slopes or poor soils



GOAL #4:

Encourage Appropriate Appearance Standards

Strategies:

- Use architectural styles that positively reinforce the area's traditional rural character
- Use appropriate signage for commercial & industrial development
- Place utilities underground
- Preserve mature trees
- Utilize low-intensity lighting for building exteriors and parking lots
- Screen outdoor storage & utility areas
- Avoid chain-link fence material
- Avoid prototypical chain-store franchise architecture
- Orient new construction toward the corridor
- Avoid large/expansive parking areas adjacent to the corridor
- Avoid non-native or invasive plant materials

GOAL #5:

Preserve Vitality of the Existing Highway

Strategies:

- Encourage connectivity between adjacent land uses
- Promote the use of shared access to minimize the number of driveways and lesson the impacts to the Middle Fork
- Ingress and egress from adjacent roadways is encouraged when possible
- Promote walkability and accessibility in all new development activities
- Promote bicycle access and multi-modal transportation

GOAL #6:

Economic Development

Strategies:

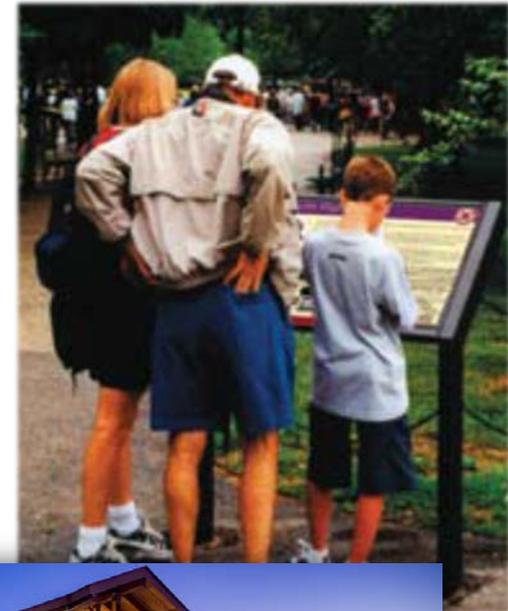
- Maintain the area's competitive advantage by preserving the rural, small-town character of the area
- Priority for corridor development should be to maintain the natural environment and enhance the area's high quality of life
- Support the development of quality housing for the local workforce
- Partner with adjacent jurisdictions to define regional needs and priorities
- Coordinate goals, plans and programs across jurisdictional boundaries

Goal #7:

Hazard Mitigation

Strategies:

- Full implementation of 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: Unsuit 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: Unsuit 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: Unsuit 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

CtE: Cullasaja very cobbly loam, 30 to 50 percent slopes, extremely bouldery.

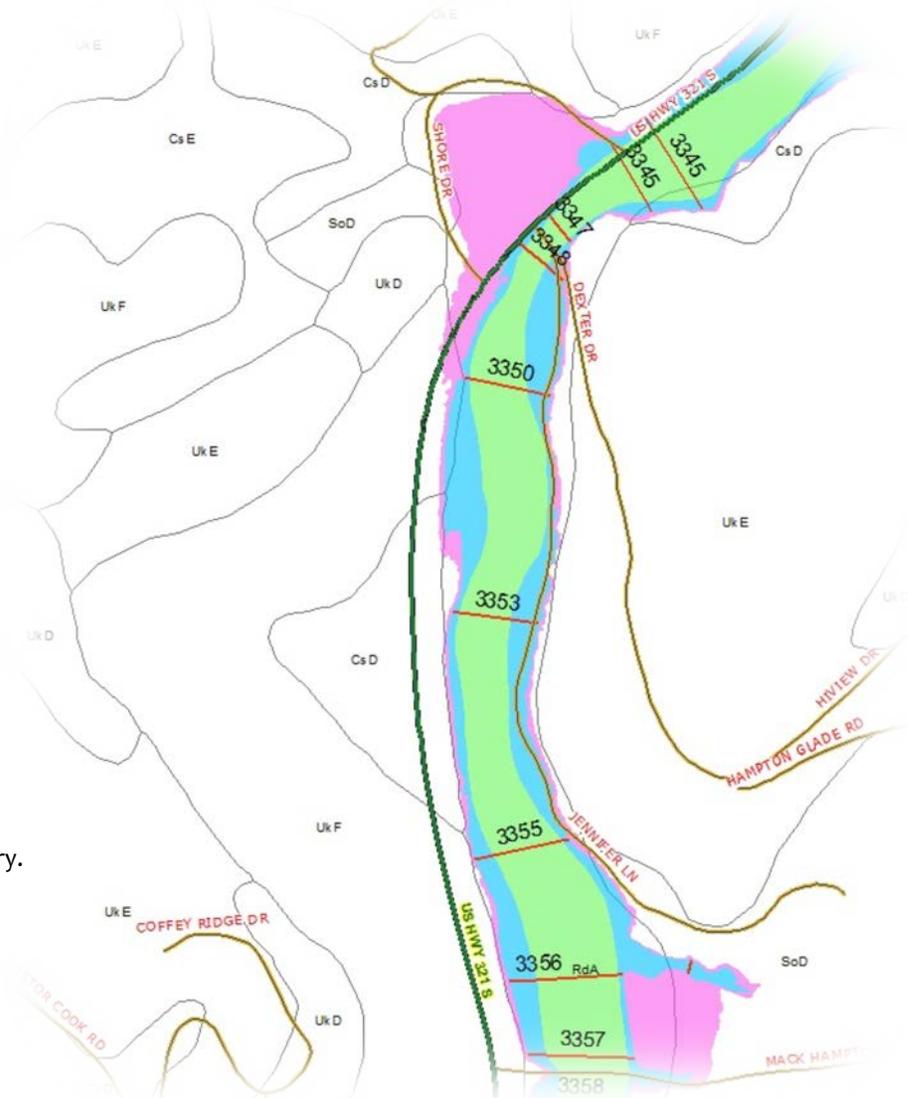
Land Use Suitability

Agricultural: Unsuit for Cropland/Orchards/Hay
 Poorly suited for Fraser Fir
 Poorly suited for Pasture
 Poorly suited for Woodland Management

Recreation: Severe limitations due to slope

Septic: Severe limitations due to large stones/slope

Building Site: Severe limitations due to large stones/slope



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: Severe limitations due to flooding/wetness/poor filter
Building Site: Severe due to flooding/wetness

UkE: Unaka-Porters complex, 30 to 50 percent slopes, very rocky.
Land Use Suitability
Agricultural: Unsited for Cropland/Hay
Poorly suited for Orchards/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 to bedrock

UkF: Unaka-Porters complex, 50 to 95 percent slopes, very rocky.
Land Use Suitability
Agricultural: Unsited for Cropland/Hay
Poorly suited for Orchards/Woodland Management
Recreation: Severe limitations due to slope
Septic: Severe limitations due to slope/depth of bedrock
Building Site: Severe limitations due to slope/depth to bedrock

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Watauga County Economic Development Commission 2017

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US Army Corps of Engineers

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

US Fish & Wildlife Service - Raleigh

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Flood Risk Information System

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Natural Resource Conservation Service

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