GATEWAY CORRIDOR STRATEGY
DEEP GAP

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

BACKGROUND

Purpose

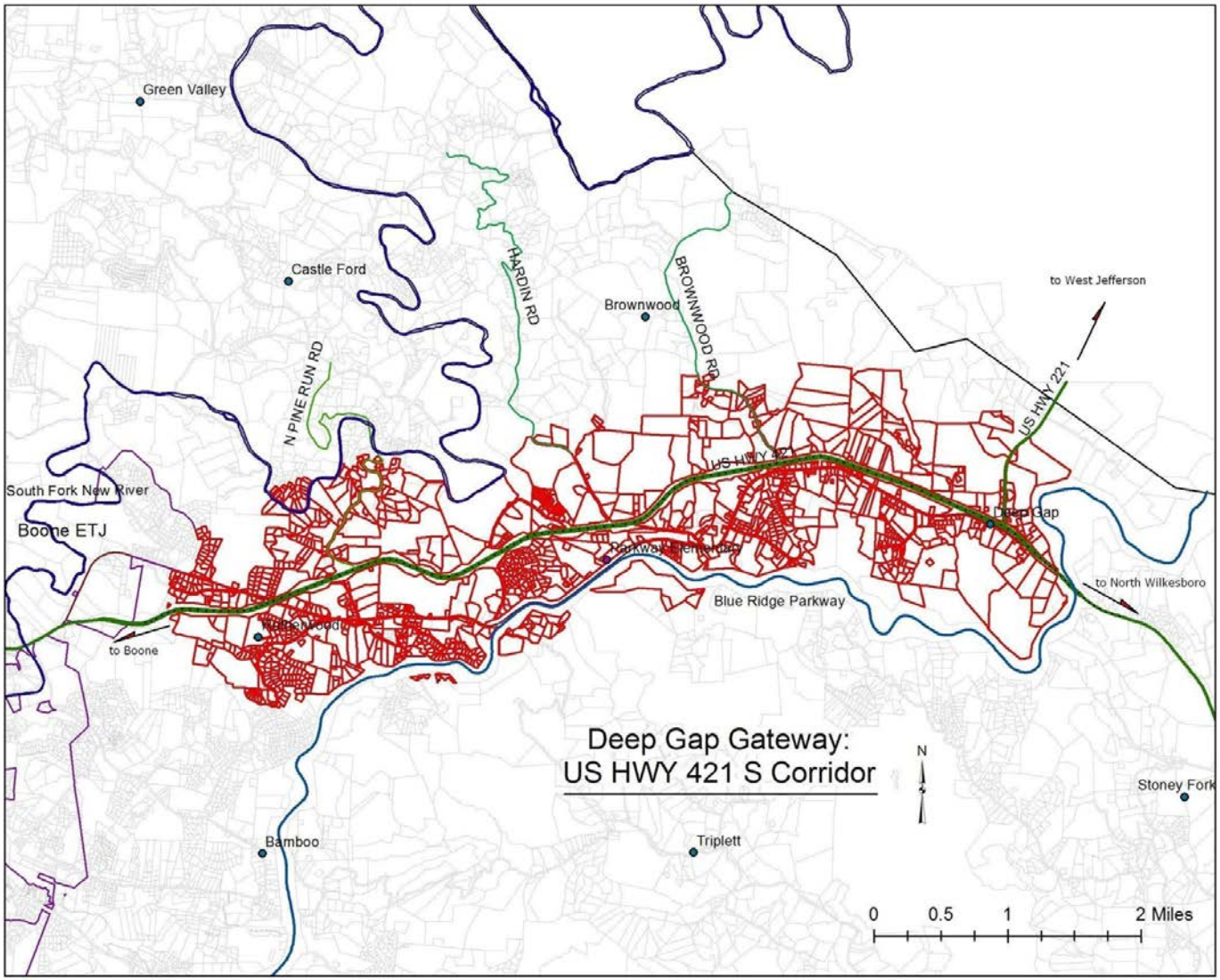
Rural corridors have a little-recognized but critical relationship to the economic health and quality of life in Watauga County. Rural corridors link the region's more urbanized areas and serve as lifelines for rural residents travelling to major employment centers, educational institutions, regional medical facilities, recreation areas and other desired destinations. These corridors provide visitor access to the regions ski resorts, outdoor recreation areas, restaurants, overnight accommodations, choose-n-cut operations, and other favored 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 and, at the same time, support local community growth and corridor improvements that protect environmental quality and preserve our unique rural character. According to a survey taken for the 2013 Watauga County Comprehensive Transportation Plan (CTP), the majority of surveyed residents preferred rural/country living, were most often destined for the Town of Boone, and most commonly utilized US-421 when travelling to their destination. The Highway 421 Corridor in Deep Gap becomes the logical choice to begin the county's corridor planning efforts.

Process

The Watauga County Planning Board's work program included taking on the task of corridor planning. In 2012, the Board appointed a four 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. This provided the corridor planning context. Then, an inventory of existing conditions was assembled to begin the process of identifying corridor assets and defining potential corridor issues. With this information, a number of recommended goals and strategies were developed to maintain the scenic value of the corridor while encouraging attractive and compatible development that will enhance the economic value of the Deep Gap Gateway Corridor.

STUDY AREA MAP

Detailed mapping information for the Deep Gap Gateway Corridor is available **here**.



ASSESSMENT

Highway Classification

US 421 is classified by NCDOT as an Expressway, meaning that this facility is designed to function with high level, high volume, medium-high speed traffic. The posted speed limit is 55 mph. This is a four-lane, median divided facility with partial control of access. Median breaks are only allowed at intersections with minor roadways or to allow U-turns. Private driveway connections are allowed at a maximum of one connection per parcel. The use of shared drives is highly encouraged.

Projected Traffic Volumes

2015 ADT = 11,970 2035 ADT = 20,400

The NCDOT maintains urban and rural area traffic volume data on their statewide mapping website.

Physical Characteristics:

Surface Waters

The corridor study area lies entirely within the South Fork New River drainage basin. Almost 1,400 acres of the South Fork Aquatic Habitat, some of which lies in the study area, are designated Significant Natural Areas in Watauga County by the North Carolina Natural Heritage Program. The Deep Gap Bog, 11 acres adjacent to US 421 west of the Blue Ridge Parkway, is also a designated Significant Natural Area.

Because surface waters of the state are classified by the Division of Water Resources (DWR) based upon differing uses and characteristics, multiple water quality protection rules often apply. For example, portions of the South Fork New River and some of its tributaries carry the DWR's

'Trout Waters' designation as well as the 'Outstanding Resource Waters' designation. In addition, DWR's 'Water Supply Watershed' rules apply to portions of the river as a result of the Town of Boone's planned raw water intake in Brownwood. 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

Although Watauga County generally has very rugged and diverse slope characteristics, the topography of the study area exhibits very little diversity. The overwhelming majority of the land within the study area exhibits rather gentle 0-30% slope characteristics. The study area elevations also are a bit unique for Watauga County where elevations can range from 1,400' to over 5,000' above sea level. Here, within the study area, the overwhelming majority of the land lies between the elevations of 3,000' to 3,500'. Soil types are most generally high in mica content and, as a result, are highly erosive and not easily compacted.

Soil Characteristics

Specific soil types along the corridor vary by elevation and include:

WaC ***Watauga loam***. Generally found in areas with 8 to 15 percent slopes between elevations of 2,880' to 3,400' feet. These soils are well suited to pasture, hay land, Frazier Fir, cropland, and woodland production as well as building site development. Soils in this class are also well suited for septic tank absorption fields.

WaD ***Watauga loam***. Generally found in areas with 15 to 30 percent slopes between elevations of 2,800 to 3,400 feet. These soils are well suited for pasture, hay land, and woodland management. Others uses include Frazier Fir production and building site development. These soils are poorly suited for septic tank absorption fields.

CdE ***Chandler fine sandy loam***. Generally found in areas with 30 to 50 percent slopes between elevations of 1,700 to 3,200 feet. These soils are suited for woodland management and Frazier Fir production. Others uses include pasture and building site development. These soils are poorly suited for septic tank absorption fields.

SnC ***Saunook loam***. Generally found in areas with 8 to 15 percent slopes between elevations ranging from 1,400 to 4,200 feet. These soils are well suited to pasture, hay land, Frazier Fir, cropland, and woodland production as well as building site development. Soils in this class are also well suited for septic tank absorption fields.

Geologic Hazards

The U.S. 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. Understanding soil types and the underlying geology is very valuable when evaluating the suitability of land to accommodate specific land uses.

Potential Threats

Threats to the corridor include the future siting or development of incompatible land uses, the loss of rural character, and disruption or loss of quality short-range and long-range views.

Challenges:

Infrastructure

The four-lane upgrade of US 421 through the Deep Gap area opened up access to significant acreage for commercial and industrial development. But, lack of water service in

Deep Gap is a major hurdle to attracting higher density development. In 2012, the Economic Development Commission retained McGill Associates to explore the feasibility of extending water services to strategic areas along the corridor. Due to the complexity and expense of developing an independent water system, McGill's Water Service Evaluation recommends the County seek opportunities to partner with the Town of Boone to provide water service to the corridor. However, the Town's water intake project on the New River faces an uncertain future and construction of water storage facilities necessary to meet peak demand for service and fire protection is difficult to justify without specific development opportunities in mind.

Water Resources

A 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 U.S. 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 U.S. Geologic Survey.

CONTEXT

Local Planning
The Citizens Plan for Watauga, the county's 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 counties.

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 421 is one of several principal highways in Watauga County that form the backbone of the regions' transportation network. Watauga's overarching transportation planning goal is to achieve an efficient and balanced transportation system combining both motorized and non-motorized modes of transportation. Park-n-Rides lots, with expanded AppalCart service, would help achieve these goals by reducing auto dependency and congestion. 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 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.

Regional Planning

Numerous Regional Plans have also been developed over the years for the High Country. A number of multi-use trails, cycling routes, hiking and paddling trails are planned within the Deep Gap study area.

One notable plan includes the High Country Regional Trail Plan. This document was funded by the North Carolina Division of Parks & Recreation and is intended to be utilized by local governments for coordinated trail improvements (and maximize limited available funding).

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. Segments of the plan have a bearing within the Deep Gap study area.

Finally, the Boone Area Outdoor Recreation Plan, was produced by the Watauga County Tourism Development Authority. This Plan creates a unified vision for the establishment of outdoor recreation infrastructure and is a leveraging tool for local funding.

Statewide Planning: Scenic Byway

From NC Scenic Byways, Fourth Edition - "*The N.C. Department of Transportation has designated 51 scenic byways to give visitors and residents a chance to experience North Carolina's history, geography and culture, while also raising awareness for the protection and preservation of these treasures. Byways are carefully selected to portray the diverse beauty and culture of the Tar Heel State and provide travelers with safe and interesting alternate travel routes*".

The US 421 Scenic Byway runs between Boone and Deep Gap, the home of Grammy Award winner and cultural icon Doc Watson. This area offers sweeping views of Snake Mountain and Elk Knob, the New River Valley, and numerous Frazier Fir Christmas Tree farms. Watauga County is s a leading national producer of Frazier Firs.

Strategic Highway Corridor

North Carolina's Strategic Highway 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***

Scheduled Improvements

NCDOT proposes widen US 221 from US 421 in the Deep Gap community of Watauga County to the US 221 Business/NC 88 intersection in the town of Jefferson in Ashe County. The project is approximately 16.1 miles in length. This project, R-2915, is scheduled for construction in 2015 beginning at the intersection of US 421 with the construction of a grade-separated interchange. Watauga County's Corridor Subcommittee attended the design public hearing in Ashe County requesting a number of design considerations relating to planned signage, lighting, landscaping, striping, and retaining walls.

Regulatory Environment

The region has experienced significant amounts of growth over the past few decades. Responding to that growth, the County has developed a number of plans and regulations for land development and land use. Most land development standards are applicable countywide and include Watershed Protection, Floodplain Development, and Erosion & Sedimentation Control ordinances. Land use standards apply to specified land uses and include Subdivision & Multi-Family Housing, Building Height, Signs, Wind Energy Systems, Wireless Communication Towers, Sexually Oriented Businesses, and the High Impact Land Use (HILU) ordinance, among others. High Impact Land Uses are those that require large amounts of land or by the

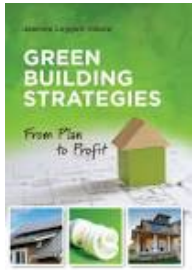
nature of their operation produce smoke, odor, noise or similar impacts, or otherwise have the potential to impact surrounding properties if not carefully designed and sited. Specifically included in the HILU ordinance: Asphalt Plants, Electricity Generating Facilities, Propane or Gasoline Bulk Storage Facilities, Chip Mills, Explosives Manufacturing, Chemical Manufacturing, Chemical Storage Facilities, Fuel Oil Bulk Storage Facilities, Electric Substations, Cement Mixing Facilities, and Commercial/Industrial development with aggregate building footprint 50,000 square feet or greater.

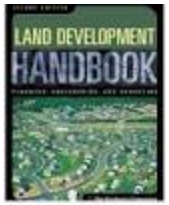
All of Watauga County's ordinances pertaining to land use and land development are available here.

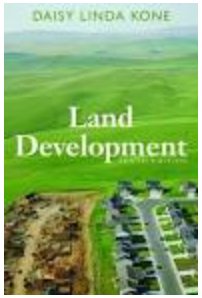
Development Checklist

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.







RECOMMENDATIONS

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

GOAL #1: **Maximize Preservation of Scenic Views**

Strategies:
- Place utilities underground
- Preserve mature trees
- Site buildings in a manner that avoids disrupting scenic views
- Re-use existing buildings/Re-develop previously developed property
- Avoid non-native or invasive plant materials
- Utilize low-intensity exterior/parking lot lighting
- Consider conservation easements
- Consider land trusts

GOAL #2: **Encourage Compact Development Patterns**

Strategies:
- Site development in to planned growth areas w/potential transit service
- Concentration of new development is preferred
- Mixed land uses are preferred
- Preserve farm land and sensitive environmental areas (steep slopes, floodplains, wetlands)
- Preserve long range views
- Participate in the Farmland Preservation Program as appropriate

GOAL #3: **Preserve Vitality of the Existing Highway**

Strategies:
- Connectivity between adjacent land uses is encouraged
- Use shared drives to minimize the number of driveways
- Ingress and egress from adjacent roadways is encouraged

GOAL #4: **Encourage Appropriate Appearance Standards**

Strategies: Use architectural styles that positively reinforce the area's traditional character & compliment the pastoral-agrarian theme of the scenic by-way
Use appropriate signage for commercial & industrial development
Screen outdoor storage & utility areas
Avoid chain-link fence material
Avoid prototypical chain-store franchise architecture
Orient new construction toward the corridor
Avoid flat roofs
Avoid large/expansive parking areas adjacent to the corridor
Avoid wireless towers within identified scenic view areas

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