



Chapter 3: Opportunities & Constraints

Chapter Outline:

1. Overview
2. Opportunities
3. Constraints
4. Overall Opportunities & Constraints Map
5. Existing Conditions Maps

1. Overview

Opportunities and constraints were mapped both in the field and in-house using GIS mapping. The consultants generated base maps with data provided by the Town of Carrboro and the State of North Carolina. The project corridor is broken down into five sections for further analysis in this chapter. The sections are divided by the project study area as follows:

1. Estes Drive Extension to Carolina North Forest Boundary
2. Carolina North Forest (southern portion)
3. Carolina North Forest (northern portion)
4. Carolina North Forest Boundary to Winmore Neighborhood
5. Lake Hogan Farm to Jones Creek
6. Jones Creek to Ballentine Property

The specific purpose of this chapter is to define the opportunities and constraints found along the corridor, which will inform the proposed Bolin Creek Greenway alignment.

2. Opportunities

Bolin Creek is already recognized as a valuable environmental resource to Carrboro citizens. General opportunity categories for trail development along Bolin and Jones Creek corridors include:

Existing Trails and Utility Easements

Stretches of cleared corridor, utilized by the Orange County Water and Sewer Authority (OWASA), are found along the study area throughout different locations adjacent to the creek. These cleared areas lend themselves toward trail feasibility due to their ease of constructability. In addition, miles of foot trails exist throughout the corridor, presenting potential alternate routes for future greenway alignment.

Access for the Community

Connections to surrounding use in Carrboro provide a means for future users to safely, easily, and environmentally access the greenway and Bolin Creek. The proposed greenway offers a non-motorized transportation alternative between northern and southern Carrboro with significantly decreased interaction with motor vehicles than existing roadway routes. The Bolin Creek corridor has the potential to connect 5 public schools, up to 7 surrounding neighborhoods, several parks including the Community Park, Battle Park, and Umstead Park in Chapel Hill, Wilson Park, Adams Preserve, MLK Park, and Twin Creeks Park in Carrboro, open space within Carolina North Forest, and finally, other bicycle facilities within town.

Environmental Mitigation

A large part of the Bolin Creek trail corridor is run down by human use and is in need of vegetative restoration, erosion control, stream bank restoration and invasive species removal. Establishment of the greenway can help to mitigate some of these problems and permit a safe interaction between user and nature, potentially beautifying the corridor for future generations.

Education and Community

Carrboro's sense of community can be further enhanced with the establishment of a trail, encouraging residents to walk or bicycle throughout the town. The proposed trail has the potential to enhance town pride and create a sense of ownership among its residents. Programming opportunities for the proposed greenway are limitless, from environmental and interpretive education, athletic events, and parades to trail maintenance days among local nature clubs. By providing a paved trail that all user groups can access safely, the greenway could become a catalyst for community connection and involvement.

3. Constraints

While opportunities are numerous, constraints must be considered as part of a thorough examination. Constraints affect trail implementation, constructability and costs. General cost constraints include:

Topographic/Natural Landforms

Significant topographic features are found along the entire trail corridor creating constraints and increasing costs for trail development. Examples of these types of sites are:

- Steep Terrain
- Creek and Tributary Crossings
- Wetlands and Ponds

Private Property

Some of the tracts of land along the corridor are privately owned; however, a vast majority of the land owners have permitted existing access to their property for public recreational use. Regardless of this understanding, negotiations will need to occur between the private land owner and the Town of Carrboro to secure an easement and/or management plan for the proposed trail.

Use Conflict

Use along the creek corridor varies. Overlapping areas of hiking and jogging, mountain biking, commuting, picnicking, children playing, dog activity, and other adjacent private property use can create feelings of ownership along the corridor, thereby setting the stage for a conflict of interest.

Grey Infrastructure

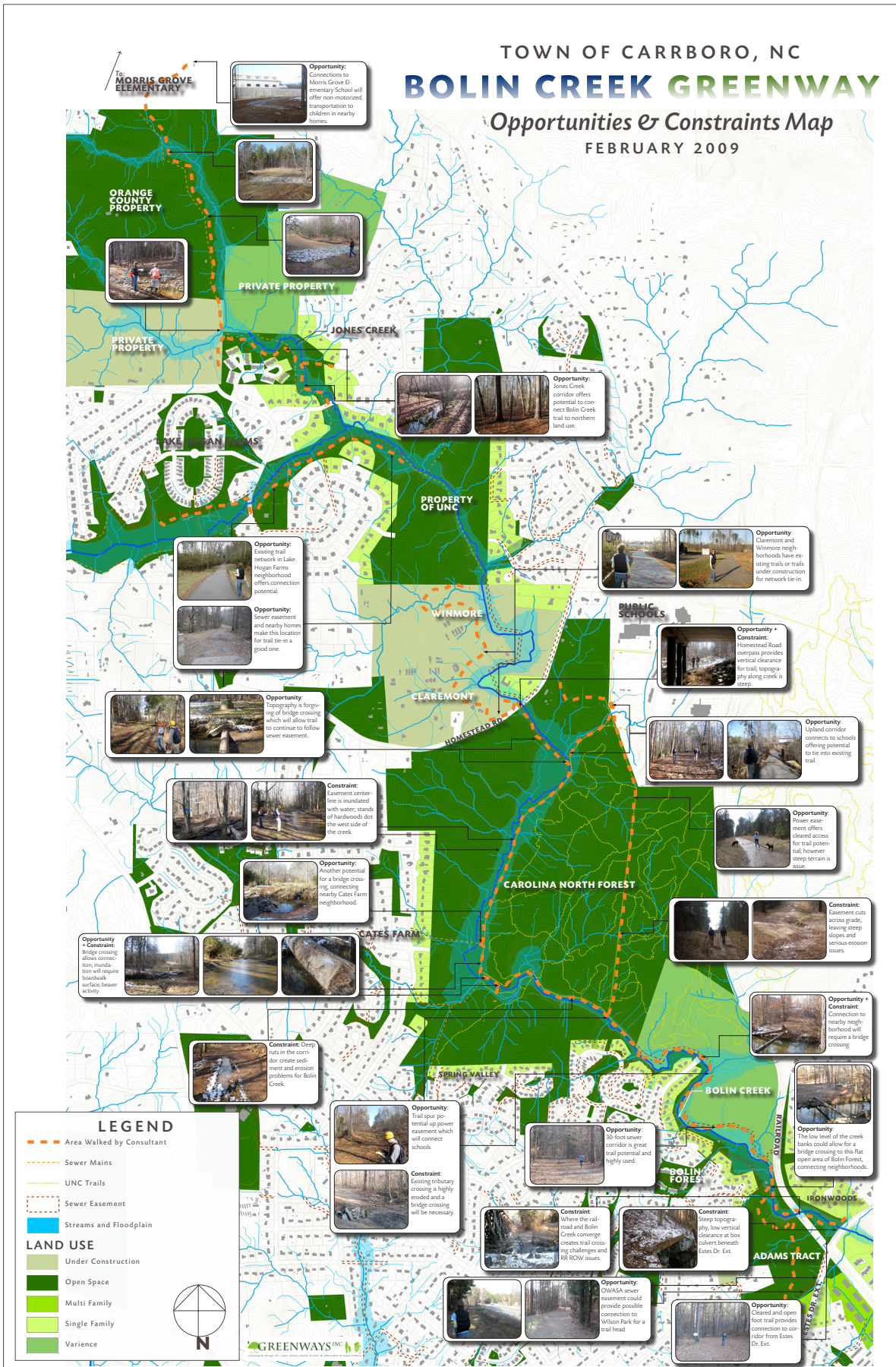
Despite the significant amount of natural undeveloped land along the study area, manmade infrastructure forms physical barriers for trail development. Grey infrastructure along the corridor includes:

- Existing Roadways – (Homestead Rd., Estes Dr., Turtleback Crossing)
- Existing Active Railroads – (Norfolk Southern)
- Hydro-Utility Lines (sewer and water)
- Drainage Structures (culverts and pipes)
- Electrical Utility Lines (electrical, telephone and cable)

4. Existing Conditions Maps

Maps beginning on page 27 contain opportunities and constraints symbols as well as corresponding images for reference. Opportunities are noted with blue numbers, constraints with red numbers, and areas that are both an opportunity *and* a constraint are noted with a grey number. The maps also show Bolin and Jones Creek, its floodway and floodplain, associated tributaries, land use, major roadways and railroads, mapped trails, utility corridors and rights-of-way, parcel lines, and finally, the orange dotted line illustrates the main areas the consultant teams walked in the field.

Overall Opportunities and Constraints Map



Existing Conditions: Estes Drive Extension to Carolina North Forest Boundary

- 1 Constraint:** The finished grade of Estes Drive extension is approximately 25 feet above Bolin Creek. Steep 3:1 slopes from the roadway to the creek will make both an at-grade crossing or a trail underpass a cost, safety and permit constraint.
- 2 Opportunity & Constraint:** Box culvert roof beneath Estes Dr. potentially lent itself to a benched trail condition early in planning; however communications with Chapel Hill greenway planners determined this connection was no longer feasible.
- 3 Opportunity:** Sewer easement continues after crossing the railroad tracks along Estes Dr. extension, providing a cleared, open corridor ideal for trail conditions.
- 4 Opportunity:** This unofficial parking area for the Adams Tract trails is highly eroded from vehicular use; trail enhancement could clean up this area's erosion issues.
- 5 Opportunity:** Sewer easement has the potential to connect Wilson Park and use along Estes Dr. extension via the proposed Bolin Creek trail.
- 6 Opportunity:** Wilson Park's existing facilities, which include ball fields, picnic areas, tennis courts, tot lots, and parking/restrooms are ideal for trail head conditions for the proposed trail.
- 7 Opportunity:** Rocky shoals of southern Bolin Creek are ideal low water bridge crossings, which are a low impact solution for crossing conditions.
- 8 Constraint:** The Norfolk Southern railroad crosses Bolin Creek at the southern portion of the corridor which presents a right-of-way constraint.
- 9 Constraint:** Steep topography and rocky creek conditions limit trail development on the south side of Bolin Creek.
- 10 Opportunity:** Easement on north side of Bolin Creek is much more accessible and will require minimal disturbance for trail preparation.
- 11 Constraint:** Trail surface must stay at least 10 feet away from all sewer manholes per OWASA regulations.
- 12 Opportunity:** Ladder bridge that extends to Bolin Forest HOA playground is feasible condition for bridge crossing. A bridge would provide access to nearby residents. Large boulder and low stream banks provide opportunity for a low water bridge.
- 13 Opportunity & Constraint:** First major tributary crossing will need a raised surface such as a boardwalk or low bridge which will require a permit and upfront costs. Opportunity exists to mitigate signs of erosion and provide a safe facility to accommodate users.
- 14 Opportunity & Constraint:** Exposed run-down pipes at the second major tributary crossing will need improvement to support a paved surface trail, which will be a cost and permit constraint. Opportunity exists to improve the drainage facility as well as beautify the crossing.

