
TOWN OF CARRBORO GREENWAYS COMMISSION

Background Material for Discussion on Greenway Surface



MARCH 18TH, 2008



Overview

Current transportation funding for the Bolin Creek greenway requires compliance with AASHTO standards, which could presume asphalt or concrete, as well as trail bed standards to support transportation use. The interest in exploration of alternative surfaces has prompted staff to pursue preliminary investigations of potential alternatives. Please note that this memo does not address the many other greenway planning and design issues for this section besides surfacing.

Findings

Staff recommend two websites for helpful background. The first is a general website sponsored by the national organization American Trails:

<http://www.americantrails.org/resources/trailbuilding/index.html>. This website provides a fairly comprehensive compilation of links from an organization with a national perspective for trail advocacy. The second website is

<http://atfiles.org/files/pdf/AltaTrailSurface.pdf>. This website presents surface material options from ALTA, a firm specializing in progressive transportation planning, particularly bicycle, pedestrian and trail systems. (The selection of this site in no way is an endorsement of this firm; the link is presented because it provides a concise summary of many of the potential materials for a greenway surface, with relevant information compiled on considerations for material selection.) Some of the materials presented by ALTA include:

traditional and permeable asphalt and concrete
chip seal
crusher fines
organic surfaces, e.g. bark mulch, wood planer shavings

agricultural by-products, such as filbert shells
wood, in the form of boardwalks
commercial soil stabilizers, geotextile confinement systems, and limestone treated surfaces

In addition to recognition of funding considerations, staff recommend that the Commission reflect on several questions and weigh the relative importance of the following factors with respect to alternative surfacing materials:

Balancing Multiple Objectives and Defining Fundamental Principals: Is the greenway envisioned primarily for recreation, transportation, or an even mix of both? What are, and how important are, other fundamental objectives, such as access for maintenance vehicles, and accessibility/ADA compliance?

Existing Soil Conditions: Soil conditions are a given and play a critical role in surfacing selection. Generally, bottomland soils have lower permeability relative to upland soils. Traffic and use also affect soil permeability—heavier use causes more soil compaction. Construction of a proper trail bed and drainage control are therefore important design and construction steps, and the lack of attention to these steps can be anticipated to compromise the integrity of the surface and lead to higher maintenance requirements.

Floodplain considerations: As with any transportation corridor, water management (drainage, downslope/downstream impacts, and erosion control) is an essential consideration for successful greenway design. There is a special challenge for greenways located in floodplains because of the amount of energy conveyed during flood events. What are the appropriate design considerations, including surfacing, for greenways in floodplains given the need to address environmental impacts associated with flooding as well as special maintenance needs in floodplains?

Anticipated/Desired Use/Functionality—How should the greenway surface balance needs of bicyclists (road and offroad), walkers, runners, skaters, skateboarders, scooters, wheelchairs, canes and crutches, and maintenance vehicles? Multiple use trails attempt to meet the needs of all anticipated trail users. This may not be feasible with a single trail surface. One option is considering the shoulder area as a usable surface, making it wide enough for use by those preferring a softer material. Also, how should the surface selection consider/balance users who are more destination oriented and time constrained—going to work or school (commuting), or more recreationally oriented?

Initial Capital Cost—Trail surface costs vary dramatically: Construction costs include excavation, subbase preparation, aggregate base placement, and application of the selected trail surface.

Maintenance and Long Term Durability - Each trail surface has varying maintenance needs and costs.

Aesthetics – Each trail surface has varying aesthetic characteristics that should fit with the overall design concept desired for the project.

Flexibility – To what degree can/should different materials be considered for different sections of the greenway between Estes Drive and Homestead Road?