

**Survey for  
Shared-Use Bicycle and Pedestrian Facility  
Design Issues**

**Prepared for  
NCDOT's Division of Bicycle and Pedestrian Transportation**

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## Survey Design and Methodology

### Background

In conjunction with WalkBikeNC, NCDOT is revisiting its policies, design standards, specifications and guidelines for shared-use bicycle and pedestrian facilities. In order to ensure that the revisions made address the issues that being experienced by those who are designing, constructing and maintaining these facilities, it is important to fully understand the issues, the underlying causes, the challenges and consequences, and range of possible solutions. This survey was initiated in May 2013 to assess the current perceptions about issues related to NCDOT's policies, design standards, specifications and guidelines for shared-use bicycle and pedestrian facilities.

Specifically, the questionnaire was designed to:

- identify the key issues that are problematic or hindrances to planning, designing, constructing and maintaining shared use multi-use facilities;
- ascertain the related consequences or impacts;
- identify possible solutions for consideration; and
- gauge survey respondent interest in participating in subsequent focus group discussion about key issues, impacts and solutions.

The information gathered through the survey is intended to be used to guide focus group discussion and technical work group deliberations to inform new and/or revise applicable policies, standards, specifications and/or guidelines that enable NCDOT and its partners to improve the delivery, construction and maintenance of shared-use facilities across the state.

The survey yielded a variety of input that not only provided insight into issues associated with design, standards, specifications, policies and guidelines for shared-use (off-road) bicycle and pedestrian facilities, but respondents also provided comments on other aspects related to NCDOT's Bicycle and Pedestrian Program. This summary report includes all the issues that were expressed, in addition to a more detailed breakdown of the design-related issues that will be carried forward and used to inform deliberations about potential changes to design guidelines, specifications and standards. The other issues that were identified are being provided to NCDOT's Division of Bicycle and Pedestrian Transportation for further consideration as continuous improvement opportunities.

### Administration

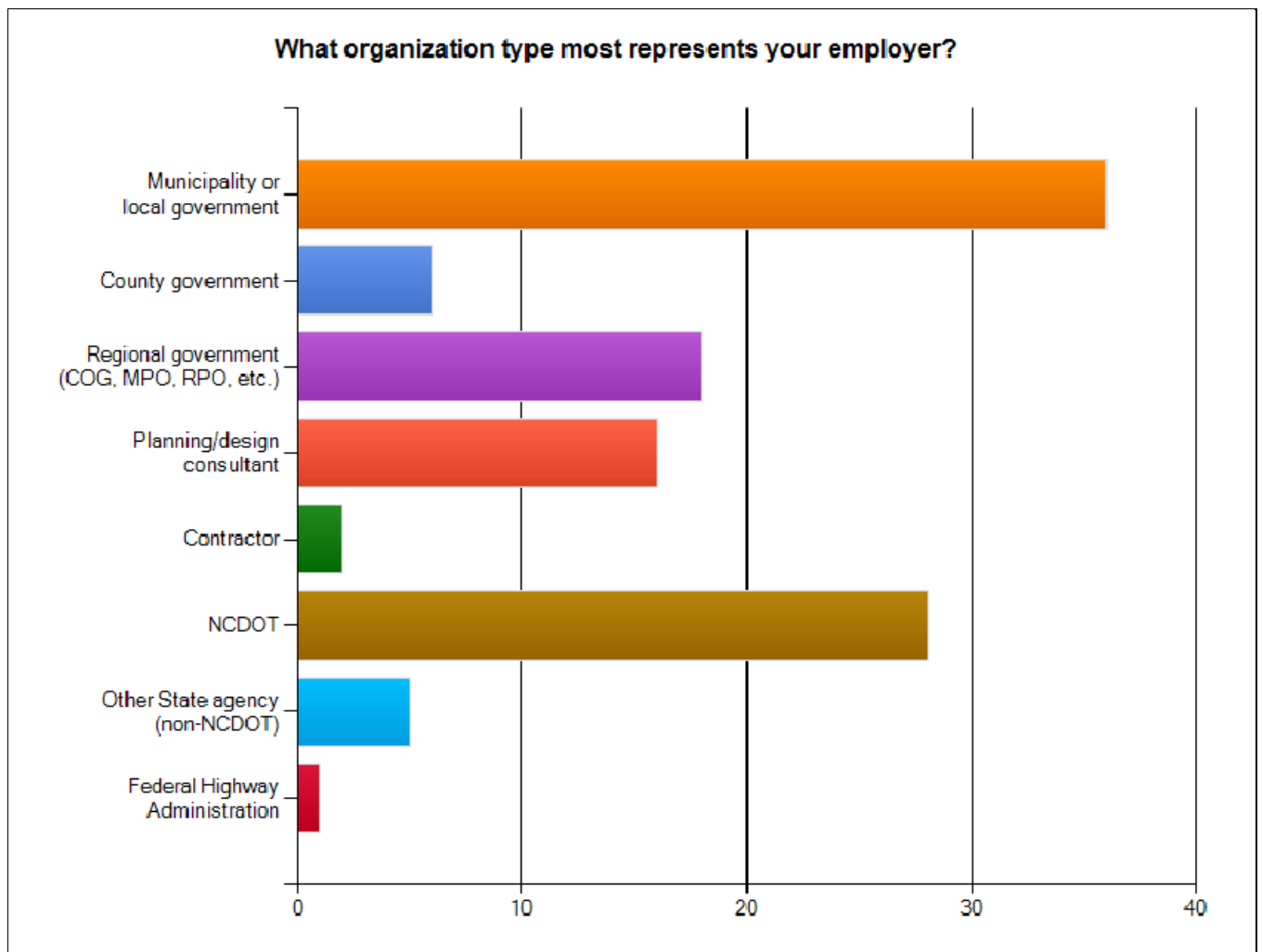
The survey was administered through an electronic questionnaire among a variety of professionals and practitioners responsible for bicycle and pedestrian planning, design, construction and maintenance of multi-use bicycle and pedestrian facilities. All questionnaires completed online were included for tabulation in the final survey data set.

Entities that were asked to take part in the survey were sent an initial email notification from Julie Hunkins on May 7, 2013, followed by an additional email reminder on May 29, 2013. The initial email explained the purpose of the survey and asked for completion of the questionnaire. The data collection phase of the survey was closed on May 31, 2013.

Among the approximately 151 individuals asked to participate in the survey, 116 people (77%) started the survey and 50 people completed the survey (33%).

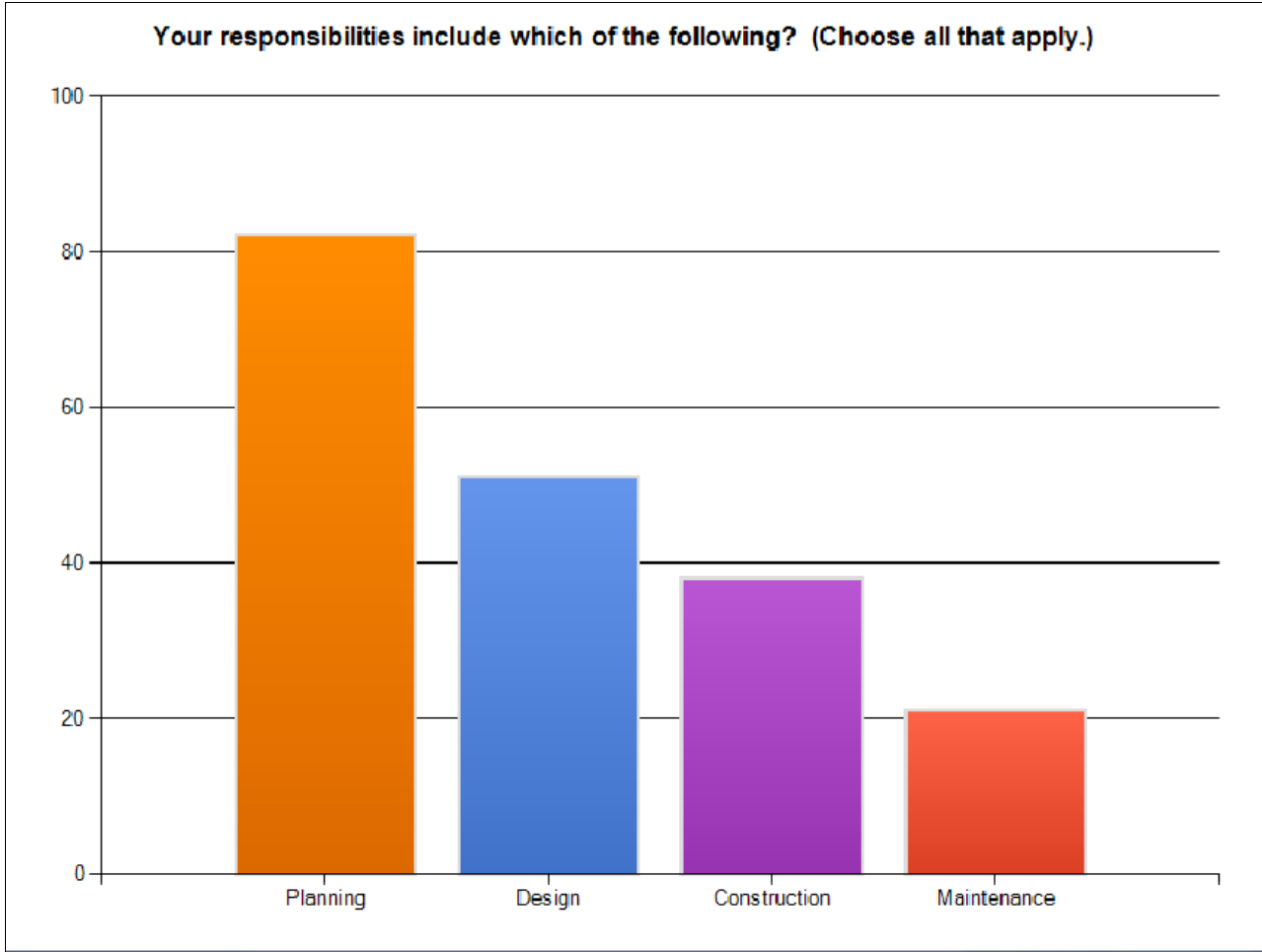
The breakdown of survey respondents with regard to the organizations they represent is:

Municipality or local government	32.1%
County government	5.4%
Regional government (COG, MPO, RPO, etc.)	16.1%
Planning/design consultant	14.3%
Contractor	1.8%
NCDOT	25.0%
Other State agency (non-NCDOT)	4.5%
Federal Highway Administration	0.9%



The survey respondents' area(s) of responsibility include the following (may have multiple areas of responsibility):

Planning	75.2%
Design	46.8%
Construction	34.9%
Maintenance	19.3%



## Response Categories

Survey input was analyzed, summarized and then grouped into the following categories:

Category	Number of Commenters	% of Responses
Design	36	40.9
Contract Administration	12	13.6
Funding and Cost-Sharing	12	13.6
Coordination	8	9.1
Planning, Policy & Prioritization	8	9.1
Education & Training	5	5.7
Maintenance	4	4.5
Technical Assistance	3	3.4

## Summary of Key Issues

### Design

- 1. Mixed-use bicycle and pedestrian facilities are required to be designed and built to the standards and specifications of roadways**
  - a. pavement and related compaction standards
  - b. geometric design criteria
  - c. bridge design and loading requirements
  - d. materials requirements
  - e. scour
- 2. Lack of clear, detailed information and conflicting protocols on what is required by the NCDOT**
  - a. Confusion on which set of rules applies or which is best to follow because there are multiple guidelines in play
  - b. Lack of guidance for path/roadway crossings
  - c. Requirement to use MUTCD is problematic when there are local system-wide wayfinding programs in place
  - d. Multitude of special provisions and frequency with which they change
  - e. Construction requirements for highway projects are not all applicable to greenway trail projects
  - f. Concern about the amount of value added for the required degree of inspection and materials testing
  - g. NCDOT's multi-use pathways design guidance seems to strongly advise against construction adjacent to highways which may limit the potential for critical bike/ped connections in some areas
- 3. Need for consideration of riparian buffers and the location of facilities in proximity to stream banks**

## Contract Administration

- 1. Lack of standardization and clarity on contract contents**
  - a) Lack of standardized NCDOT contracts
  - b) Lack of clarity on requirements for what to include in contracts (including availability of updated forms)
  - a) Takes too long for NCDOT to review and approve supplemental agreements
- 2. Contract requirements are too rigorous, stringent and complex and not always value-added**
  - a) Bid process is too complex
  - b) Requirements prohibiting the use of the same consultant to do design, construction and/or inspection is problematic, and the waiver process is too cumbersome and lengthy
  - c) Requirement to only use NCDOT prequalified/certified contractors eliminates the ability to use many qualified, local, small contractors who are more likely to bid on this type of smaller project
  - d) Smaller contractors sometimes lack the knowledge and understanding of the requirements associated with these type projects
  - e) The construction reporting and paperwork for a NCDOT-funded multi-use paths are too stringent
  - f) Requirement to have construction administrator on hand at all times, as well as daily inspection, is too costly and not warranted

## Funding and Cost-Sharing

- 1. Insufficient funding for bike/ped projects (includes multi-use paths)**
- 2. The federal funding that is funneled thru NCDOT is complicated, costly and time-consuming**

## Coordination

- 1. Lack of timely response by NCDOT at various stages of project development and delivery**
  - a) NCDOT is invited but often does not participate with RPO to review or comment on projects or assist the locals in determining if the project is viable or if the project estimates are reasonable
  - b) NCDOT takes too long for review of projects, contract approvals and authorization to proceed with construction
  - c) Often difficult or time consuming to get a decision on a design or construction issue from the NCDOT project contact person (in this particular case a contractor rather than an NCDOT employee).
- 2. Lack of clearly defined process and guidelines**
  - a. Unfamiliar and inconsistent plan formats between NCDOT and municipalities
  - b. Inconsistencies and a lack of communication observed in bridge design and construction and absence of local contact procedures for project development
- 3. Last minute changes or substitutions requested that area a result of design mistakes.**

## Planning, Policy & Prioritization

1. **Lack of clarity on the extent to which approved bike and/or ped plans are to be incorporated into CTPs**
2. **Land use is poorly tied to transportation infrastructure improvements**
  - a. Lack of elaboration about the criticality of the transportation-land use connection and how shared-use bicycle and pedestrian facilities can facilitate strengthening that connection
3. **NCDOT maintained roads are the largest barriers to bicyclist and pedestrian travel (can apply to multi-use paths)**
4. **Uncertainty as to whether greenways are allowed within the interstate ROW**
5. **Need for strategic prioritization for shared-use bicycle and pedestrian facilities**

## Education & Training

1. **Lack of knowledge and understanding of all of the new and updated guidelines and standards that exist**
  - a. Lack of NC guidance on how to apply national guidance that lacks sufficient detail for consistent implementation
2. **Lack of knowledge by design firms about ADA requirements**
3. **Lack of understanding on the laws regarding pedestrians, bicyclists, and vehicles all sharing the same roadway**

## Maintenance

1. **Confusion on who is to maintain greenways once constructed (some counties allow Parks and Greenways Departments to assume maintenance)**
2. **Lack of maintenance monies budgeted for this type of facility**

## Technical Assistance

1. **Limited staff within LGA's**
2. **Lack of expertise in rural counties and small towns to manage the design and construction of shared-use facilities**
3. **NCDOT Bike/Ped staff are centrally located and not available locally to provide technical support**



## Analysis of Design Issues

The purpose of this survey was to inform deliberations about possible changes to design standards, specifications, policies and guidelines for shared-use (off-road) bicycle and pedestrian facilities. While the information provided by the survey respondents is value-added to NCDOT's Bicycle and Pedestrian Program and are recommended to be considered as part of continuous improvement efforts, the issues raised specifically relating to design standards, specifications, policies and guidelines is the focus of the survey and related efforts to update design standards. A more detailed summary of design-related issues is provided as part of the survey summary to help guide near-term dialogues and deliberations about potential changes in design standards and guidelines.

Of the 37 responses about design-related issues, 29 (or 78%) were related specifically to shared-use, off-road bicycle and pedestrian facilities. Of those responses related to off-road multi-use bicycle and pedestrian facilities, 11 (or 30%) were related to general design issues associated with the requirement for these facilities to be designed and built to the standards and specifications of roadways. A common theme was the perception that these facilities are "over-designed" given that the usage of the facilities is targeted at bicyclists and pedestrians; these "over-designed" comments related to both the actual design requirements of the facilities and the process used to plan, design, contract and construct the facilities.

In relation to the specific design aspects, some respondents acknowledged that motorized maintenance vehicles and emergency vehicles occasionally need to access the facilities while many questioned the need to provide higher design standards that result in increased project costs. One respondent noted that national standards explicitly define pedestrian and vehicle (emergency and or maintenance type) loads that are to be used.

The issues identified, coupled with the responses that detailed the associated challenges, revealed five design-related areas of particular concern. Respondents noted issues associated with:

- a. **pavement** standards and related **compaction** standards of the sub-grade where it is difficult to achieve based on the nature of soils in some of these sites, the topography in the vicinity, and constructability issues associated with linear/narrow work areas and impede the achievement of those standards (5 comments);
- b. **geometric design** criteria that can also increase costs by necessitating "softer" curvatures and lesser grades (4 comments);
- c. **bridge** design and loading requirements that require bridges to carry heavy motorized vehicles and, thus, results in more substantial bridge components and higher construction costs (2 comments);
- d. the requirement for **materials** to meet "highway" standards when they will be used for bicycle and pedestrian facilities that may not warrant such high standards due to the type of use (2 comments); and,
- e. the evaluation of **scour** impacts associated with bridges for more frequent and more severe storm events, which can also increase bridge costs (2 comments).

Another theme that emerged is the lack of clear guidance from NCDOT on what is required for the design and construction of these facilities, as well as potential conflicts and confusion with other guidelines (8 of the 29 responses for shared-use facilities, or 28%).

- One respondent noted confusion on which set of rules applies or which is best to follow because there are multiple guidelines in play (NCDOT Bike/Ped, AASHTO, ADAG for Outdoor facilities, etc.), which results in spending too much time and capital looking for the requirements or trying to find the “example projects” to mimic in order to meet the requirements.
- One respondent cited concern over the lack of guidance about roadway-path crossings.
- Another respondent stated that the requirement to use MUTCD is problematic when there are local system-wide wayfinding programs in place, and the important of maintaining consistency within a local system when it comes to messaging, branding, and maintenance.
- One respondent expressed concern about the multitude of special provisions and frequency with which they change (in particular related to Roadway Construction Standard Specifications and Special Provisions).
- One respondent noted that construction requirements for highway projects are not all applicable to greenway trail projects ('Control of Operations', 'Delays due to weather', etc.).
- Associated with the construction of these facilities, one respondent responded that the requirements for inspection and materials testing seems to be of marginal value (cost burden compared to the need for inspection/testing for these type of facilities).
- As a policy-related issue, one respondent noted that NCDOT's multi-use pathways design guidance seems to strongly advise against construction adjacent to highways which may limit the potential for critical bike/ped connections in some areas.
- Two respondents noted issues associated with the proximity of the facilities to streams. One respondent notes the importance of avoiding and minimizing impacts to riparian areas. Another noted that the location of facilities close to streams (within 10 feet) and create erosion of the stream banks, which can result in costly engineering solutions to rectify associated problems.

## Focus Group Interest

The survey also queried respondents to ascertain their interest in participating in a focus group to further discuss the key design issues related to multi-use facilities, the associated challenges, and to identify possible opportunities to address the issues. Twenty-seven individuals (or 51.9 % of respondents) expressed an interest in participating in a focus group.

County Government	1
Municipality or Local Government	11
NCDOT	4
Other State Agency (Non-NCDOT)	3
Planning/Design Consultant	4
Regional Government (COG, MPO, RPO)	3
Other (Chamber of Commerce)	1

These respondents represent the following areas (can have more than one area of responsibility):

Planning	20
Design	15
Construction	9
Maintenance	6
Other	2

Geographic Distribution of these potential focus group participants are as follows:

Eastern NC (along and east of the I-95 corridor)	3
Piedmont NC (between I-95 and I-77 corridors)	21
Western NC (west of I-77)	3

## Appendix A: Issues, Associated Problems, and Possible Solutions

### Design

Issue	Associated Problems	Possible Solutions
<i>Shared use lanes should be for streets with prevailing speeds of less than 35 mph. Streets posted 35 or greater should have bike lanes.</i>		
<i>Bike lanes should be carefully designing on approach to intersections so as to avoid the right-hook type collisions when motor vehicles overtake a bicycle.</i>		
Bike/ped greenway trails designed and built to the standards and specifications of roadways.	Building to roadway design standards which significantly impacts cost.	Greenway standards and specifications that match the use. Roadway standards are too strict for a bike/ped greenway use.
Compaction standard for earth/stone material beneath bike/ped facilities (95% density)	Difficult to achieve compaction level shown in spec book on some of these facilities due to nature of soils in some of these sites, topography, linear/narrow work areas, etc.	Work team consisting of Construction, M&T, Geotechnical Unit led by Ron Hancock. This is in the works already. Develop reduced standard and identify other ways to determine if satisfactory compaction is achieved for type of facility.
Density requirements.	Very difficult if not impossible to obtain roadway standards in a flood plain.	Different specifications for greenways vs roadways.
Design criteria can and should be less stringent than for roadway traffic. While some municipalities use small pickup trucks and other maintenance equipment on these facilities, the overall loading is not comparable to roadway traffic.	Overdesign causes increase costs for construction.	Examine pavement structures construction standards that rely more on long term issues such as drainage and pavement oxidation.
<i>Do bicyclists ride with traffic in edge of travel lane, on paved shoulder, or both. Some widening projects require a rumble strip (with or without skips) for vehicular safety. It is reported that cyclists do not like the paved shoulder because of the debris on the paved shoulder that could flatten a tire.</i>	This can be a challenge to plan and design for. Rumble strips designed for vehicular safety are requested to have skips so bikes can swerve in and out from travel lane to paved shoulder.	Earlier coordination is a start. It maybe that there is no clear solution that covers all instances; however safety should trump all other issues. Maybe something that can be discussed through this process.

Issue	Associated Problems	Possible Solutions
During construction the implementation of construction procedures used for highway projects is not applicable to greenway trail projects. Specific examples are 'Control of Operations,' 'Delays due to weather,' etc.	This results in LGA being in the middle - arguing the basis of time delays or weather delays or others because the trail is 10' wide with one-way in one way out. Construction sequencing is different than highway projects.	Revise specs to match one of several local jurisdictions standards that would be much more suitable to the construction of multi-use trails
geometric design criteria and path/roadway crossings	<ul style="list-style-type: none"> <li>• geometric design criteria may be overly restrictive (design speed, horizontal curvature, etc.) causing undue construction impacts</li> <li>• guidance is limited on path/roadway crossings</li> </ul>	Look to the 2012 AASHTO Bike Guide
Lack of greenway design standards.	The default design standard for greenways is the same as roadway standards, which drives up costs and makes it difficult to design and construct greenways.	Creation of greenway design standards.
Materials requirements are too stringent.	Difficult to certify project.	Create materials policies for bike and ped projects that are reasonable and account for long term durability without being too stringent.
NCDOT specifications are for roads. Multi-use paths are not roads and don't need to be built to road standards. Multi-use paths are usually located in area with less than suitable subgrades. NCDOT specifications do not address these conditions well and enforce a product that cannot be reasonably achieved in these areas.	We created a specification that deals with undercut in less than suitable subgrades. We also have discussed using lower testing requirements.	NCDOT standards are intended for roads from interstates to local two lane rural roads. Multi-use paths are in a different class altogether and new specifications are needed.
NCDOT's multi-use pathways design guidance seems to strongly advise against construction adjacent to highways. I think while under most circumstances this is true, there are a few circumstances where construction may be warranted.	Not really applicable to NCSU, but could be generally important for the state as a whole particularly as new connections are made.	Outline situations where construction of a pathway adjacent to a highway may be applicable -- albeit likely very infrequently -- but at least address it. Such cases may be where infrequent crossings exist, where crossings could be grade separated, or the section of path is relatively short in distance and provides a critical connection.

Issue	Associated Problems	Possible Solutions
Projects need to avoid and minimize impacts to riparian buffers as much as possible.	Approval of applications to access the riparian buffer without excessive impacts to the buffer.	Avoid zone 1 (inner 30 feet of buffer) and design the trail to be 10 feet wide with a two-foot grassed maintenance corridor on either side of the trail when possible.
Requiring the design of a bike path to be to the same standard as a local street.	It is often difficult to make the horizontal and vertical design fit in the limited space available. It sometimes requires excessive grading and tree removal. In short, it is OVERKILL.	Greatly reduce or even eliminate the design requirements. No one is going to install a bike path that doesn't meet their needs.
Riparian buffer requirements	Often enough, trails are located in floodplains and buffer zones with restrictions or prohibitions against any trail development. Sometimes these buffer zones are the only way to make connections without going out to roadways.	Allowing greenway trail construction within these buffers as a permitted use. If needed, a paved surface is best for long term maintenance and longevity but a natural trail surface is better than no trail at all.
Signage: NCDOT typically requires that signage adhere to the MUTCD.	The requirement to use MUTCD is problematic when there are local system-wide wayfinding programs in place. Consistency within a local system is important when it comes to messaging, branding, and maintenance.	Allow some flexibility to get local wayfinding programs approved for use.
Subgrade compaction requirements need to take into consideration the fact that the traffic loads on these facilities will be mainly pedestrian and bicycle.	Current compaction standards are very difficult to achieve in the locations that most greenways are built, i.e. beside streams and creeks.	Develop greenway specific compaction standards.
The greenways are built in accordance to NCDOT Standard Specifications.	Hard to build following these strict specifications.	Write new specifications that are used for greenways.
There is a lack of specifications as far as density requirements for subgrade for these type facilities. FHWA says that NCDOT Standard Specifications are to apply, but there is nothing in our Spec book that will permit a reduced but satisfactory subgrade preparation for greenways, bike paths, etc. Certainly, if developed, special provisions can be used in the contract to replace Standard Specifications as appropriate.	These areas are frequently along creek bottoms or areas subject to flooding. Generally, poor soils are prevalent. It is very costly and impractical to enforce normal density requirements in such areas considering the "traffic load" that will be experienced on a greenway or bike path.	We need special provisions specifically addressing greenway construction with regards to density requirements, pavement structure, etc. that have been specifically approved by FHWA so we can eliminate costly construction practices that are not needed. We are not building an Interstate highway along a creek bottom. Also, we currently can lose significant time resolving these issues after a contract is let and the contractor is experiencing difficulties trying to achieve the current Standard Specifications requirements.

Issue	Associated Problems	Possible Solutions
<p>These facilities do not need to be built to the same standards and specifications of highways, they do not carry comparable loads. Cost can be reduced and facilities can be built for the desired purpose without such stringent specifications.</p>	<p>Due to the limited right of way and environmental concerns, where a lot of these facilities are constructed, current standards cause additional impacts.</p>	<p>A design standard that is applicable to the actual users.</p>
<p>Use of Roadway Construction Standard Specifications - Particularly Special Provisions</p>	<p>The multitude of special provisions and the frequency with which they change in relation to how many of them apply to this type of projects is one issue. The cost to continually update during reviews to Advertise to Bid, particularly for a small sidewalk project, can require unreasonable consultant time compared to the overall design. Also the roadway standards often do not fit well for this type of project.</p>	<p>Create Construction Standard Specifications that are appropriate for these projects.</p>
<p><i>Wide outside lanes</i></p>	<p>It increases vehicular speeds creating more hazardous conditions for bicyclists</p>	<p>Striped shoulder - 4 feet +</p>
<p>Design Standards</p>	<p>The imposition of Roadway design standards is not appropriate for these projects. Even bicycle design standards are often not appropriate for a multi-use trail. Things like minimum horizontal radii, loadings for bridges, etc. can compromise the design and drive up the cost unnecessarily.</p>	<p>Develop some minimum standards but allow for flexibility to address particular circumstances. Example: An emergency vehicle rated bridge can be appropriate when access is only available via the trail but other times no.</p>
<p><i>Inconsistency in the application of complete streets standards across the divisions in the State.</i></p>	<p>Currently, it appears that many at the Division/District levels, as well as in the Transportation Building, don't feel it is their job to find ways to successfully accommodate bicycle-pedestrian facilities into every project. This mindset pushes that responsibility down to the overworked staff of the Division of Bicycle Pedestrian Transportation, an unusual situation in the other states which I've interviewed/discussed this matter with in the past.</p>	<p>1. Set out a clear mandate that every project planned and designed by NCDOT or with cost-sharing provided through NCDOT incorporate bike-pedestrian accommodations, including underpasses/overpasses with freeway facilities. 2. Any project that does not have both bicycle and pedestrian accommodations included should have a thorough (template is fine) explanation of why that project does not have bike-pedestrian accommodations submitted as part of the project record.</p>

Issue	Associated Problems	Possible Solutions
Lack of clear, detailed information on what is required by the NCDOT	Spend too much time and capital looking for the requirements or trying to find 'example projects' to mimic in order to meet the requirements.	Provide detailed project requirements, sample documents, contact data for where information needs to be obtained.
Longitudinal slope requirements/limitations of trails	There are multiple guidelines in play: NCDOT Bike/Ped, AASHTO, ADAG for Outdoor facilities, etc. There is confusion on which set of rules applies or which is best to follow.	Can NCDOT adopt an existing set of appropriate guidelines (AASHTO?) rather than updating or creating another set?
The design requirements for bridges along these facilities is more expensive if there is a possibility that they will support vehicular traffic in the future.	Locals may not understand this, may think it is design overkill and lament the use of funding for what is actually the appropriate design based on national AASHTO standards.	In the scoping planning phase, have very specific conversations with stakeholders regarding whether service vehicles, EMS vehicles, fire trucks, etc. will be allowed on the bridges. If so, explain how that decision affects the design.
The standards of construction for a greenway trail should be adjusted from the current highway construction standards, i.e., the requirement to meet 500-year scour is ludicrous for a greenway trail built in a flood plain.	unwarranted cost	Common sense in construction standards is needed. A trail built in a flood plain will 'scour' before any driven pile immediately adjacent to it.
<i>Vehicular speeds too high</i>	Vehicle speed differentials are very high for residential and collector streets for bicyclists and pedestrians. This creates a safety issue.	Reducing speed limits on residential roads from 35 to 30 mph unless otherwise posted.
Applying Roadway criteria for Construction Inspection and Materials testing	The cost burden compared to the need for the degree of inspection and materials testing makes these projects much more expensive than seems necessary.	Develop inspections and materials testing requirements appropriate to the size and complexity of the project.
<i>Loop detectors</i>	Loop detectors don't often pick up bicyclists and there is often not a push button because there are no sidewalks. This means there is no trigger for the signal cycle to change when a motor vehicle is not present	Loop detectors that pick up bicyclists.
Trails within 10 feet of stream bank.	Stream bank erosion occurs when trails are right next to stream banks and this erosion requires costly solutions to address.	Keep trails at least 10 feet (or as far away as possible) from stream banks.



Issue	Associated Problems	Possible Solutions
<i>Pedestrian push buttons</i>	In areas where pedestrians are anticipated, pedestrians should not be required to push a button to get a WALK signal. They do not push the buttons, but instead just try to negotiate gaps and dart across the street when motor vehicles are not expecting them to do so.	Do not require pedestrians to push buttons to get a WALK signal and use short signal timing in areas where high pedestrian traffic is anticipated.
Design Plan Requirements	Imposing a uniform requirement for plan development for all projects creates unnecessary design effort compared to the value. An example is a multi-use or greenway trail that is essentially conforming to the existing topography but having to provide cross-sections, elaborate drainage plans, etc.	Develop a uniformly applied set of standards for the various types of these non-vehicular projects.
Review of specific material/material suppliers is needed. Is the grade of structural lumber necessary for a greenway project	Cost	Review each material and determine whether it is necessary for pedestrian/bicycle transportation
There is sometimes a lack of awareness on design standards for pedestrian bridges.	Lengthens review process. Sometimes leads to perception that Department is requiring these types of bridges to be overdesigned- leading to excessive costs.	The national standards explicitly define pedestrian and vehicular (emergency and/or maintenance type) loads that need to be used. The governing specification is the AASHTO LRFD Guide Specification for the Design of Pedestrian Bridges.

## Contract Administration

Issue	Associated Problems	Possible Solutions
contract administration portions	instruction on how to compile the Contract data is not very clear. Recent examples of approved compiled data would be helpful. Also clarity on which forms to use and notification of when they are changed as some forms have changed while putting contract documents together which leads to NCDOT comments that the latest forms have not been used although the forms were new when the documents were put together. Mainly focus on communication between the program coordinator and the consultant.	More communication from program coordinator to consultant regarding the requirements for preparation of plans, specs, estimates and contract documents.
Extra Work- Supplemental Agreements	This process has a long duration and many supplemental agreements cannot even be executed prior to completion of the project. First, contractor/consultant/local municipality come to terms on pricing. Then the proposed Supplemental Agreement is sent to the Department for their review. There is typically at minimum a comment as related to pricing.	Providing an Department oversight representative who is empowered to approve supplemental agreements.
Local government reimbursement contracts	Time and inexperience	Coordinate closely with local government staff during design, engineering, and construction
NCDOT standards need to be added to all contracts. Our main issue was that the contract was already let, when the city applied to use ARRA funds. That made everything complicated during the construction oversight period. I had one of the first projects	More work than originally planned for, if all my hours were charged to this project, it would have resulted in the project not being completed	Once a city lets a contract and then applies for funds, they should not be granted the money unless they already have our specs in the contract
Requirement to use NCDOT manual.	Overly complex for these types of projects. Without NCDOT funding we have a much simpler bid process and have never encountered problems.	Allow local governments to use own bid process.

Issue	Associated Problems	Possible Solutions
The construction reporting and paperwork for a NCDOT funded bicycle and pedestrian path (greenway Trail) are too stringent. There is no need for a municipality to obtain the services of a CEI firm for a trail. I can understand roads but not trails. It increases the costs by at least 25%	Excessive costs	Not sure
Many smaller (in the DOT's scale) projects attract correspondingly smaller contractors. These are not familiar with the NCDOT's records and reporting. They are not completely aware of what they are bidding on when they bid a 1/2 mile LAPP project. It requires a substantial amount of submittals throughout the life of the project. Additionally, the work is at times monitored/tested more rigorously than what they are accustomed too.	Contractors are awarded projects which they cannot effectively perform. They do not have the administration support to handle the submittals. They are unfamiliar with the specifications and don't have all of their cost covered. The work itself is perceived as more difficult as it is monitored more rigorously than they anticipated	1. Small Contractor Education Outreach - Target the small businesses in each Division and explain what a LAPP project is. 2. Create a more rigorous prequalification process
Most of these greenway or pedestrian projects are locally administered. There are current "NCDOT rules" regarding not using the same consultant firm to do inspection as did the design plans. We understand this rule applying to large projects, but it is creating extra problems for the LGA's to go through a separate selection process on relatively small project(s).	There is extra effort required to get a waiver from NCDOT on every project when the LGA wants to use the same firm that prepared the plans to administer the project. In most cases, these projects are \$250,000 or less. Currently, the LGA must go through another selection process to hire a firm to administer the project if they do not have the certified personnel on their staff to perform that work. Most of the LGA's do not have certified staff on board to do proper testing and inspection, so they must hire it out.	There should be a dollar threshold for these types of projects such that if the construction contract is less than that amount, then NCDOT will automatically permit the same firm to be used for construction administration that also prepared the plans. This will save quite a bit of time and hassle and permit the firm that was hired to design the pedestrian facility to see it through the construction phase. That will enable the projects to be built more quickly and cut out some of the administrative cost that can now easily run 25-30% on these type of projects.
Requirement to have construction administrator on hand at all times.	Very expensive and unnecessary. We typically have administrators on hand during critical stages such as undercut, concrete pours etc.	Allow local governments to use local processes
Ability to use design firm for construction administration.	Local governments typically use design firms to administer projects. We do it all of the time and have never had an issue.	Allow design firms to be used for construction administration and allow this as a contract extension without having to bid the construction admin work.

Issue	Associated Problems	Possible Solutions
LGA have not used a process of daily inspection. This is a high standard that is not warranted on a greenway project	Unwarranted cost.	Allow for periodic inspections and management.
Prequalification/Certification of contractors	The requirement that only contractors that are NCDOT prequalified/certified for small jobs screens out many qualified, local, small contractors.	This is reasonable if all of the Roadway Construction requirements must be followed, but if these can be modified to just what is appropriate for this type of project, that need can be eliminated. Possibly have a much reduced certification program or a project appropriate qualification during the bidding process.

## Funding and Cost-Sharing

Issue	Associated Problems	Possible Solutions
<p><i>Cost sharing responsibilities seem to be the main discussion point on most projects. NCDOT has routinely provided shared-use facilities at no cost to the municipality up to a certain point. If there is a request for shared facilities which may be considered beyond the norm, then NCDOT routinely asks for a cost share. The cost share question has been more of an issue lately because municipalities assume cost sharing should not be required due to NCDOT's new Complete Streets Policy and guidelines.</i></p>	<p>There are inconsistencies concerning cost sharing because those decisions are being made on a project by project basis by many different people within NCDOT - PDEA and Roadway Design engineers. Municipalities notice the inconsistencies as well and bring up instances from the past as reference.</p>	<p>Put the decision on cost sharing completely with the the Bike and Ped Unit.</p>
<p><i>Funding for facilities (whether or not it should be a shared cost), both independent projects and incidental facilities as part of a larger project.</i></p>	<p>Getting a facility implemented. Segments are usually small and not interconnected. It is difficult to establish the need prior to having a completed network or segment.</p>	<p>Be clear that it will take local participation for funding. If a county does not have funds available, discuss possibilities such as grant money or direct allocation money for funding.</p>
<p>Funding is always the biggest issue, availability of resources to implement.</p>	<p>If funds are available then it helps to win over support from the local governing body as well as residents.</p>	<p>Better means to educate and gain support for public/private investment and partnership.</p>
<p>Funding. It's always about funding first.</p>	<p>I have very limited funding for the project but desperately want to provide these facilities to our citizens.</p>	<p>Funding. Grants. Guidance in who to contact, when to contact to make it easier to provide the facilities.</p>
<p><i>How are NCDOT's divisions supposed to widen rural (for example) roadways to add a much-needed 5-foot shoulder, when this widening work will cost extra money. Have divisions been given additional funds to comply with the additional construction costs required from the complete streets policy?</i></p>	<p>When NCDOT re-surfaces a roadway and has not constructed the additional 5-foot shoulder on each side, how do I respond to the public as to why it wasn't constructed to a complete street standard?</p>	<p>Is complete streets to be considered an unfunded mandate? If legislature passes a bill preventing NCDOT from funding bike/ped projects, does that affect incidental projects such as the example mentioned above?</p>
<p><i>Integration of pedestrian and bike access with other DOT projects. Lack of funding for local bike/ped projects. Lack of focus on infill pedestrian/bike access, promoting community connectivity.</i></p>	<p>Without funding assistance, projects that are identified as priorities will go unfunded. In eastern NC, there is simply not enough extra funds on hand to fund projects with only local funds. The challenge is securing funding - the result is a lack of ped/bike projects for communities with poorer economic bases.</p>	<p>The best solution is providing more grant funds on a less competitive basis. Projects that are identified in local bike/ped plans should be funded - at least in part - with help from DOT. Without grant funding communities across eastern NC are at a disadvantage.</p>

Issue	Associated Problems	Possible Solutions
<p><i>Locals should not be charged to provide a greater than 5' wide sidewalk across bridges (betterment costs).</i></p>	<p>NCDOT requires locals to pay "betterment costs" to achieve sidewalk widths noted in ITE design guidelines and recommended in training classes by DBPT. That is inappropriate and unfair and leads to sidewalks that are too narrow for pedestrian safety, comfort, and capacity needs.</p>	<p>ITE Guide for the Planning, Design, and Operational Facilities Recommends 8 feet as a desirable width for bridge sidewalk. Bridges require extra space due to sidewalk width being constrained by wall, railing, or curb. Such features generally require 1 feet of shy distance off such edges. At the same time, ADA requires a minimum 4 foot accessible route be maintained within the sidewalk. Therefore the minimum standard bridge sidewalk should be 6 to 7 feet wide. Where the approaching sidewalk is 5 feet and a three foot grass strip is provided, this eight foot total is the functional width of the approaching sidewalk not 5 feet.</p>
<p>Need to provide access to funding for more small town &amp; rural projects.</p>	<p>Hard to respond in a timely manner due to limited staff</p>	<p>Better communication w/ small town &amp; rural county officials. Add local chambers of commerce officials &amp; staff to info that is circulated; business community can often be the motivator in small towns &amp; rural counties.</p>
<p>The federal funding that is funneled thru NCDOT is much more complicated, costly and time consuming than it needs to be.</p>	<p>Applying for these "grants" can only be done by larger municipalities that have staff. We add 15 to 30% to the cost estimate and are finding even this is too low compared to our normal projects. Also due to all the audits, approvals by NCDOT it takes at least double the staff time over a typical capital project. This causes a lot of stress and doesn't make the projects any better. If anything it makes it worse because it drags out the process. All it seems to do is create government jobs to complete paperwork. This doesn't create private sector jobs because we are doing less work due to all the complicated paperwork requirements. Having us build greenways/trails to road standards is not necessary.</p>	<p>Need to let local municipalities go about business like they normally would. This includes how they hire consultants, how we hire contractors and how we build projects. We agree if we are getting grant funding there should be some minimum requirements met but this could be as simple as the plans are sealed and approved by licensed consultants and at the end of the project that the projects were built per the approved plans.</p>

Issue	Associated Problems	Possible Solutions
<p>The general inability of getting financing for construction or maintenance of sidewalk or other pedestrian/cyclist facilities outside of municipal limits.</p>	<p>In areas that are particularly fast-growing through voluntary (or, less likely now, involuntary) annexation near corporate limits, the disjoint that frequently occurs between facilities leaves pedestrians and cyclists with incomplete connections to important destinations.</p>	<p>1. Develop a standardized system for getting non-traditional partners (private developers, schools, etc.) to form inter-agency agreements for the construction and maintenance of bike-pedestrian facilities. 2. Develop standardized requirements for developers to construct and provide bonds for the maintenance of new bike-pedestrian facilities. 3. Re-visit the sliding-scale approach to cost-sharing for bike-pedestrian facilities. Ideally, this scale or its replacement would be used to finance roadways just as it used for bike-pedestrian facilities in order to better connect land development with transportation infrastructure (the number one problem for all modes in North Carolina).</p>
<p><i>NCDOT should include sidewalks as incidental features with no cost share requirements to roadway &amp; bridge improvements, when such facilities are located in urban(izing) or suburban(izing) areas. Requiring such facilities be noted in a local or MPO plan would be reasonable.</i></p>	<p>The Pedestrian Policy says “due to the technical difficulty of describing justification for pedestrian facilities, the committee chose a cost sharing approach to provide cost containment.” However, it is not technically difficult to justify sidewalks. See ITE Recommended Practice for the Design and Safety of Pedestrian Facilities. The NCDOT, as facility owner, is responsible for accommodating all users of the facility. Requiring local matches leads to needed facilities not getting provided in too many cases.</p>	<p>NCDOT should include sidewalks as incidental features with no cost share requirements to roadway &amp; bridge improvements, when such facilities are located in urban(izing) or suburban(izing) areas.</p>
<p><i>Cost sharing provisions for bridge deck width have been misapplied in some cases.</i></p>	<p>Local governments have been charged for bridge deck width to accommodate bicycles when such width is already provided for under the bridge policy. Fleming Road (part of Greensboro Western Urban Loop U-2524) example. Policy calls for 8 foot shoulders on two lane arterial bridges over 4000ADT. Locals were asked to pay for extra shoulder width to accommodate bicycles already indicated under the bridge policy.</p>	<p>Bridge deck costs should not be passed on to the local governments as a general rule. However if NCDOT determines to keep charging such fees, then MPOs should not be charged for space already indicated by NCDOT’s Bridge Policy.</p>

## Coordination

Issue	Associated Problems	Possible Solutions
Coordination between NCDOT and private sector design firms.	We are asked to make last minute changes or substitutions on design mistakes.	Make ADA requirements known ahead of time in the planning stages.
I work for an RPO that does bicycle and pedestrian project planning and identification. We then take the projects through the TCC and TAC for review and approval. We have representatives from the Division, Traffic Engineering, and the Transportation Planning Branch on the invitation lists for the meetings, but we do not get reviews or comments from them for these projects that assist the locals in determining if the project is viable or if the project estimates are reasonable. The projects may then get funded and when issues arise later we are left scrambling to address.	This lack of timely feedback on proposed projects undermines confidence in bicycle and pedestrian planning, or project nomination. It wastes local staff's time, as well as NCDOT local project administrators' time to deal with cancelled, amended, or otherwise problematic projects.	Division and TPB staff need to increase participation in the actual project identification and grant writing process for individual bicycle and pedestrian projects. RPOs and MPOs exist to hold forums for NCDOT and local staff to communicate about local issues and projects. The NCDOT staff need to review the agenda packets and provide comments about the projects before they are voted on in order to ensure that the best, and most realistic, projects are selected for funding.
In speaking with the engineering staff in our municipality, I am told that it is often difficult or time consuming to get a decision on a design or construction issue from the NCDOT project contact person (in this particular case a contractor rather than an NCDOT employee).	Delay.	It is suggested that the NCDOT project contact for a trail project be empowered and have the training needed to make decisions.
Reducing the NCDOT review time. Reducing time for approvals of contracts, authorization to proceed with construction, etc. Need a special provision for greenways and trails so they are not treated like roads. I took at least 6 years to get one of our greenways into construction. We are willing to share responsibility, but NCDOT was very slow. The support of NCDOT bike-ped staff is very important to us. They understand the product. Lauren Blackburn is still new to the organization, but is making progress in changing the culture.	Being in Park and Recreation, my director is extremely frustrated with the pace of delivering greenways to our public. NCDOT funds have been critical through the recession when local funds all but dried up. Regardless, our director is considering moving to natural surface trails because of the speed of delivery and basically no cost. He says they will precede greenways, but it is conceivable he will decide not to construct some greenway trails. The transportation component of the system will suffer.	Please work to make it easier to receive funding and quicken the pace of all processes...even if it means pursuing federal changes. We will help if we know how. Also pursue a special provision to be realistic about the checks and balances needed for this type of facility. We have 15+ year old greenway trails that are doing great and have never been repaved. They did not suffer such scrutiny. There's a cost/benefit balance somewhere...but it's not currently in sight.
NCDOT review of every aspect of the project takes too long.	We've had delays so long waiting for NCDOT review that the contractor has had to de-mobilize while we wait for signoff on items.	Require NCDOT signoff only on critical items such as bridges, pedestrian culverts, etc. Do not review hammers, concrete mixes, drainage structures, and other routine items.



Issue	Associated Problems	Possible Solutions
When NCDOT input is required a much more timely response is needed.	A contractor is on hold or must take the risk of not securing approval.	Either allow approval from local resident engineers or allow LGA to approve.
NCDOT should eliminate the inconsistencies and a lack of communication observed in bridge design and construction by clearly stating local contact procedures for project development and start observing them consistently	Sometimes MPO is contacted (by the designer or consultant), sometimes it isn't. at scoping, in the design process, in right of way, or at the time of more general public notice (some MPOs have reported learning about bridge projects through newspaper ads). Sometimes the notice is sent to the wrong MPO or RPO. In some cases DBPT makes a contact; this also appears to be inconsistent. It appears the Bridge Unit has a more haphazard approach to MPO contacts; Roadway Design seems to be more consistently in touch with MPO contacts (including on their bridge work for larger projects).	NCDOT should eliminate the inconsistencies and a lack of communication observed in bridge design and construction by clearly stating local contact procedures for project development and start observing them consistently
The guidelines are not defined and the review process is not defined. The reviewers seem to comment on designs based on preference. There seems to be a lack of understanding the facilities will not be maintained by NCDOT. Municipality design formats do not look like NCDOT's and NCDOT has struggled to review unfamiliar plan formats. No one uses Microstation except NCDOT.	We have to design to formats and standards we are unfamiliar with. Review times from NCDOT cause projects to be delayed and overlap with other planned projects impacting staff capacity.	Accept formats in Autocad. Include Structures in the review process early on. Ensure they meet the design standards. Provide design review schedules to the designers.

## Planning, Policy & Prioritization

Issue	Associated Problems	Possible Solutions
If an area already has an approved bike plan or ped plan, how much or how little of that plan should we be displaying on the CTP?	If an area already has an approved bike plan or ped plan, quite often the present complete street cross sections come after the fact and, therefore, do not match the configuration the local area wants.	I don't know.
Elaborating on the transportation/land use connection and how shared-use bicycle and pedestrian facilities can facilitate strengthening that connection.	This is the new transportation paradigm - strengthening the connection of transportation and land use decision making is critical. It also helps in justifying funding expenditure and project prioritization.	The construction of dedicated off-road bicycle and pedestrian facilities that improve safety, enhance multi-modal connections, and encourage modal shift towards bicycling/walking (and the subsequent public health, economic, environmental, etc. benefits) is important to address -- and how this contributes to future land use decision making (e.g. updated land use classifications, reconfigured zoning requirements, refined parking standards (auto, bike), market-based incentives (density bonuses), etc.).
Land use is poorly tied to transportation infrastructure improvements, with the former being led by units of local government and the latter developed by NCDOT and various private entities adhering to different standards and participation regimens.	For active mode transportation, the design of new or infill developments does not contemplate how bicycle and pedestrian modes of travel can be best accommodated. The ordinances in place often expressly or indirectly inhibit varying and complimentary uses in close proximity that favor cycling and walking. Conversely, sidewalks built as part of a complete street paradigm that only connect low-density, homogeneous developments are a waste of taxpayer money and present an incomplete picture of the role of a complete street.	1. The second version of the Complete Streets Guidance needs to contain a strong implementation section that expressly points out that a complete street is dependent on a complete development; this includes provisions requiring cross-access; greenway/sidewalk development; pedestrian signals/crosswalks; and other facilities assumed to be a part of the development. 2. Strong land use design standards that relate buildings to the street, assign parking to the rear, and provide sound and safe access to properties from adjacent developments as well as primary streets should be standardized practice IF a community wants to avoid paying a share of active mode provisions. (Note: this would touch upon the need to revise the sliding scale for cost participation mentioned previously.)
<i>NCDOT roadways as barriers to travel</i>	All across the state, NCDOT maintained roads are the largest barriers to bicyclist and pedestrian travel.	Prioritization program for bridge, overpass, and underpass retrofits to reduce the "barrier effect" in urbanized or urbanizing areas. Commuter paths along railroad corridors.

Issue	Associated Problems	Possible Solutions
<i>ADA Transition Planning</i>	NCDOT has no ADA transition plan for it's roadways and is vulnerable to the federal law.	Document all public facilities on State Maintained roadways that need to be brought up to ADA compliance (sidewalks, curb ramps, etc.) and come up with a prioritized plan to address compliance.
We also have a question in our region regarding allowing a greenway in the interstate ROW--this has been done in Colorado, would like to see it happen in North Carolina.	Regarding the challenge of whether greenways are allowed in the interstate ROW--if they are not allowed, this means some of the areas simply might not have another feasible greenway connection	Provide statewide guidance on greenways in the U.S. highway and interstate ROW
<i>NCDOT should provide curb &amp; gutter and sidewalks on urban or urbanizing bridges and bridge approaches when requested to accommodate sidewalks and future roadway cross sections.</i>	Sometimes NCDOT declines to add sidewalks over bridges. Winston-Salem was told in one case (Business I-40 pavement rehab and interchange reconstruction project) that unless there was a project in the LRTP that would provide curb & gutter on both sides, then the NCDOT would not add sidewalks, Sometimes in such cases NCDOT adds wide shoulders that can accommodate pedestrians. Consideration of future land use, LRTP, and bike & pedestrian plans do not appear to be regularly made. Project cost control is important, but bicycle & pedestrian accommodations are a key part of the purposes a bridge is supposed to serve.	Provide curb & gutter and sidewalks on urban or urbanizing bridges and bridge approaches when requested to accommodate sidewalks and future roadway cross sections.
Strategic prioritization for shared-use bicycle and pedestrian facilities.	Separating priorities this type of facility from street improvements, rail improvements, street maintenance, and bridge replacement/repair.	Education on how pedestrian facilities can be planned and implemented.

## Education & Training

Issue	Associated Problems	Possible Solutions
Knowledge from the design firms about ADA requirements.	We are asked to make last minute changes or substitutions on design mistakes.	Make ADA requirements known ahead of time in the planning stages.
Incorporating youth into the design. Youth tend to think outside of the box.	Education on what the laws are regarding pedestrians, bicyclists, and vehicles all sharing the same roadway.	Public education either with a barrage of PSA or education at the first time drivers level
Need to provide more training and information to elected small town & rural county officials.		Better communication w/ small town & rural county officials. Add local chambers of commerce officials & staff to info that is circulated; business community can often be the motivator in small towns & rural counties.
There are a lot of new guidelines and standards to incorporate into daily operations, including the new HCM 2010 bicycle and pedestrian LOS measures, the myriad of new design treatments and flexibilities in the new AASHTO Bike Guide, the NACTO Guide, the new ped and bike treatments in the MUTCD (including design treatments that have been given interim approval). In short, there is a wealth of new, more detailed information out there.	Need to find a way to communicate this new material without "reinventing the wheel." In some cases, this may mean creating a matrix of acceptable design treatments and informing DOT/local staff regarding where to go for more information on how to design that facility. In other cases, the department may need to create NC-specific guidelines, particularly for treatments that do not offer sufficient detail in national guidance.	Take a look at what some of the other states are planning to do. Wisconsin DOT is a good example. They had stand-alone, Wisconsin-specific guidelines in the past, and are now grappling with what to do with all the new guidance that is out there.

## Maintenance

Issue	Associated Problems	Possible Solutions
<p>I think there is a bigger issue with building and maintenance of sidewalks in urbanizing portions of counties, outside of cities--there is not an entity currently responsible for building or maintaining sidewalks in those situations, even when they might be badly needed. Counties have not historically participated in transportation (except for transit). With multi-use paths, there is also some confusion as to who builds and maintains them--some counties are moving forward in allowing Parks &amp; Greenways Departments to take over maintenance of greenways once completed.</p>		
<p><i>NCDOT does not maintain pedestrian facilities.</i></p>	<p>Limits sidewalk opportunities outside of municipal limits or ETJs. In addition, sidewalk maintenance is a burdensome responsibility for some very small towns, leading to poorly maintained facilities.</p>	<p>NCDOT needs authorization and appropriate bike/ped funding to maintain sidewalks and other pedestrian facilities. This should be discussed with the BOT or legislators as appropriate.</p>
<p>Maintenance responsibilities.</p>	<p>Local maintenance of the facility is a requirement. Limited local funding is available to provide this maintenance. NCDOT is currently not funding maintenance for all of the assets that is currently being asked to maintain.</p>	<p>Budget maintenance money specifically for this type of facility and use.</p>
<p><i>Maintenance operations should have a strong impetus to include bicycle (and, to a less-frequent extent, pedestrian) facilities as part of the standard maintenance operation, a design that is clearly communicated in advance to the relevant government entities through which the maintenance project takes place.</i></p>	<p>This issue hinders the ability of maintenance actions to accommodate slight (1'-2') widenings of existing roadways, which is the best opportunity for creating segments of roadway with sufficient length to have an important impact on medium-distance bicycle travel and safety. Wider shoulders also have an important, positive effect on driver safety as well in terms of a recovery area, particularly on rural roadways.</p>	<p>1. Coordinate with local government agencies before any widenings are finalized, reviewing existing bicycle plans with them, and developing interlocal agreements for necessary participation from local governments to cover the additional expense involved (on the same or revised sliding scale for cost participation). 2. Develop a policy and communicate it with local governments that NCDOT will consistently put into place wide shoulders during maintenance, and describe the cost participation process so that smaller towns can begin preserving the funds gradually until the project commences.</p>

## Technical Assistance

Issue	Associated Problems	Possible Solutions
Need to provide additional help to small towns who do not have a staff planner.	Hard to respond in a timely manner due to limited staff	Better communication w/ small town & rural county officials. Add local chambers of commerce officials & staff to info that is circulated; business community can often be the motivator in small towns & rural counties.
Rural counties and small towns often do not have the staff and/or expertise to manage the design and construction of shared use trails (this is particularly true in NC since counties do not maintain roads).	Trails could provide important transportation and economic development benefits in a small town or rural county. However, it is unlikely that many trails will be built in these areas because of the lack of staff resources and expertise to manage design and construction.	Just as NCDOT builds and maintains roads in rural counties and small towns, perhaps NCDOT could take more of a lead role in the design and construction of trails in these areas. It is also possible that another organization within state government could provide this lead role (for instance, in Virginia some of the trails are state parks).
The NCDOT Bicycle and Pedestrian Division staff all work out of Raleigh.	Those of us far from Raleigh miss having a nearby bike/ped staffer to support projects with their knowledge and advocacy.	Ideally, all 7 regions would have a Transportation Engineer I or Transportation Planner I focused exclusively on bike/ped issues and projects. Divisions or MPOs/RPOs would probably donate the office space! At minimum, from the western perspective, it would be nice if we had a bike/ped contact at least as close as Morganton or Hickory. This could ultimately save NCDOT on staff travel costs.

## Appendix B: Survey Distribution List

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## Appendix C: Survey

# Shared Use Bike/Ped Facility Design Issues

## Purpose of Survey

In conjunction with WalkBikeNC, NCDOT is revisiting its policies, design standards, specifications and guidelines for shared-use bicycle and pedestrian facilities. In order to ensure that the revisions made address the issues that being experienced by those who are designing, constructing and maintaining these facilities, it is important to fully understand the the issues, the underlying causes, the challenges and consequences, and range of possible solutions.

NCDOT is canvassing bicycle and pedestrian planning, design, construction and maintenance professionals to understand perspectives on these issues. The results from this survey will help shape new and/or revise applicable policies, standards, specifications and/or guidelines that enable us to improve the delivery, construction and maintenance of shared-use facilities across the state.

If you encounter difficulties with the survey or have questions, please contact Julie Hunkins, Technical Services Division, at [jhunkins@nodot.gov](mailto:jhunkins@nodot.gov) or (919) 508-1852.

## About You

### What organization type most represents your employer?

- Municipality or local government
- County government
- Regional government (COG, MPO, RPO, etc.)
- Planning/design consultant
- Contractor
- NCDOT
- Other State agency (non-NCDOT)
- Federal Highway Administration

Other (please specify)

### Your responsibilities include which of the following? (Choose all that apply.)

- Planning
- Design
- Construction
- Maintenance

## Key Issues

Considering your role in the planning/design, construction and/or maintenance of shared-use bicycle and pedestrian facilities, what do you consider the key issues that need to be revisited during the update of NCDOT's related policies, standards, specifications and/or guidelines?

## Shared Use Bike/Ped Facility Design Issues

Please describe your first issue below (up to 500 characters). You will have the opportunity to submit up to six (6) issues.

What challenge(s) or problems does this issue create for you and/or others? (Response is limited to 500 characters.)

What options or solutions would you suggest we look into in order to address the issue? (Response is limited to 500 characters.)

Do you have another issue you would like to submit?

Yes

No

## Key Issue #2

Considering your role in the planning/design, construction and/or maintenance of shared-use bicycle and pedestrian facilities, what do you consider the key issues that need to be revisited during the update of NCDOT's related policies, standards, specifications and/or guidelines?

Please describe your second issue below. (Response is limited to 500 characters.)

What challenge(s) or problems does this issue create for you and/or others? (Response is limited to 500 characters.)



## Shared Use Bike/Ped Facility Design Issues

**What options or solutions would you suggest we look into in order to address the issue?**  
(Response is limited to 500 characters.)

**Do you have another issue you would like to submit?**

Yes

No

### Key Issue #3

Considering your role in the planning/design, construction and/or maintenance of shared-use bicycle and pedestrian facilities, what do you consider the key issues that need to be revisited during the update of NCDOT's related policies, standards, specifications and/or guidelines?

**Please describe your third issue below. (Response is limited to 500 characters.)**

**What challenge(s) or problems does this issue create for you and/or others? (Response is limited to 500 characters.)**

**What options or solutions would you suggest we look into in order to address the issue?**  
(Response is limited to 500 characters.)

**Do you have another issue you would like to submit?**

Yes

No

### Key Issue #4



## Shared Use Bike/Ped Facility Design Issues

Considering your role in the planning/design, construction and/or maintenance of shared-use bicycle and pedestrian facilities, what do you consider the key issues that need to be revisited during the update of NCDOT's related policies, standards, specifications and/or guidelines?

**Please describe your fourth issue below. (Response is limited to 500 characters.)**

**What challenge(s) or problems does this issue create for you and/or others? (Response is limited to 500 characters.)**

**What options or solutions would you suggest we look into in order to address the issue? (Response is limited to 500 characters.)**

**Do you have another issue you would like to submit?**

Yes

No

## Key Issue #5

Considering your role in the planning/design, construction and/or maintenance of shared-use bicycle and pedestrian facilities, what do you consider the key issues that need to be revisited during the update of NCDOT's related policies, standards, specifications and/or guidelines?

**Please describe your fifth issue below. (Response is limited to 500 characters.)**



## Shared Use Bike/Ped Facility Design Issues

**What challenge(s) or problems does this issue create for you and/or others? (Response is limited to 500 characters.)**

**What options or solutions would you suggest we look into in order to address the issue? (Response is limited to 500 characters.)**

**Do you have another issue you would like to submit?**

Yes

No

## Key Issue #6

Considering your role in the planning/design, construction and/or maintenance of shared-use bicycle and pedestrian facilities, what do you consider the key issues that need to be revisited during the update of NCDOT's related policies, standards, specifications and/or guidelines?

**Please describe your sixth and last issue below. (Response is limited to 500 characters.)**

**What challenge(s) or problems does this issue create for you and/or others? (Response is limited to 500 characters.)**

**What options or solutions would you suggest we look into in order to address the issue? (Response is limited to 500 characters.)**

# Shared Use Bike/Ped Facility Design Issues

## Focus Group Participation

Depending on the results of this survey, NCDOT may conduct focus groups in the next couple months to better understand the key issues associated with the design policies, standards and specifications related to shared-use bicycle and pedestrian facilities. If you are interested in participating in a focus group, please provide the information requested below. Note that depending on the number of respondents, we may not be able to accommodate everyone's request to participate as space would be limited for these focus groups.

### Are you interested in participating in a focus group?

- Yes, I would be interested.
- No thanks.

### If you would be interested in participating in a focus group, please provide your contact information below.

Name:	<input type="text"/>
Email:	<input type="text"/>
Phone Number:	<input type="text"/>
Organization/Affiliation:	<input type="text"/>
Street Address:	<input type="text"/>
City:	<input type="text"/>
State:	<input type="text"/>
Zip Code:	<input type="text"/>

## Thank You!

Thank you for your input!