

**2020**

*Summary Report*

# NCDOT

*Measuring Progress of Bicycle and Pedestrian Plans  
in North Carolina*



*Gastonia*

*To fulfill the requirements of NC Article 2, Chapter 36 (736-47.5)*



# North Carolina Department of Transportation Measuring Progress of Bicycle and Pedestrian Plans 2020 Summary Report

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*To fulfill the requirements of NC Article 2, Chapter 36 (136-41.5).*

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# Executive Summary

The following report summarizes the implementation successes and challenges to date for bicycle and pedestrian plans adopted since 2010 that were funded by the North Carolina Department of Transportation's Bicycle and Pedestrian Planning Grant Program.

## Implementation Progress

113 plans have been adopted since 2010. These plans have generated approximately 500 projects submitted for funding in the State Transportation Improvement Program (STIP), which are evaluated through the Strategic Transportation Investments (STI) program using a data driven approach. It is assessed that 92 projects funded in the 2020-2029 STIP were identified through one of these plans.

- 42 communities exhibited High implementation progress – indicating ten (10) or more completed projects
- 24 communities exhibited Moderate implementation progress – indicating five (5) to nine (9) completed projects
- 32 communities exhibited Low implementation progress – indicating one (1) to four (4) completed projects
- 15 community did not show any plan implementation progress

## Community Highlights

Communities across the state show measurable positive impacts as a result of the planning grant program.

- The Town of Waxhaw received \$20,000 in 2010 to develop a pedestrian master plan. That investment has resulted in \$20 million dollars in pedestrian infrastructure investments.
- The City of High Point received \$35,000 in 2015 to develop a pedestrian master plan. That investment has resulted in \$24.6 million dollars in pedestrian infrastructure investments.
- The Town of Rolesville received \$28,000 in 2011 to develop a bicycle master plan. That investment has resulted in \$7.6 million dollars in bicycle infrastructure investments.
- The Town of Indian Trail received \$35,000 in 2009 to develop a bicycle master plan. That investment has resulted in \$5 million dollars in bicycle infrastructure investments.
- The Town of Mount Airy received \$22,050 in 2011 to develop a pedestrian plan. That investment has resulted in \$6 million dollars in pedestrian infrastructure investments.

## Barriers to Implementation

The communities participating in this effort identified barriers to project implementation. The most common responses were:

- lack of funding, which is particularly burdensome on rural areas of Western and Eastern North Carolina
- limited right-of-way
- utility relocation
- Other barriers identified include limited staff and resources, lack of coordination between partner agencies, environmental constraints, feasibility of project scope, and public opposition.

# Introduction

## Legislative Mandate

In 2017, the NC General Assembly passed a provision requiring that NCDOT's Integrated Mobility Division submit an "annual report by May 15 on the progress of projects identified in plans (i) submitted to the Division over the 10-year period prior to the report and (ii) funded from Bicycle and Pedestrian Planning Grant funds." This report documents a review of bicycle and pedestrian plans adopted over the last ten years.

## About the Planning Grant Program

In 2004, the Bicycle and Pedestrian Planning Grant Initiative was established by the Integrated Mobility Division and the Transportation Planning Branch to encourage municipalities to develop comprehensive bicycle and pedestrian transportation plans.

To date, approximately \$6.5 million dollars in Federal planning and research funds have been used to support the development of 217 plans. Grants are awarded on an annual basis through a call for applications that considers need, project scope, level of local support and geographic distribution.

## Plans Subject to Evaluation

There were 113 adopted plans within the last ten (10) years that received funding from the Bicycle and Pedestrian Planning Grant program. Some communities completed both a pedestrian and bicycle plan, resulting in 113 plans developed by 104 individual communities across the state. Of the 113 plans:

- 27 are bicycle plans
- 66 are pedestrian plans and
- 20 are combined bicycle and pedestrian plans.

## Evaluation Process

A solicitation effort was initiated in November 2019 asking communities to document progress for each project identified in their adopted plans. Follow-up communication occurred through February 2020. Of the 113 adopted plans, responses were received for 108 plans representing 99 individual communities. The following is a breakdown of the adopted plans by community size:

- 95 are in a rural setting (population of 15,000 or less)
- 12 are in a suburban setting (population between 15,000 and 50,000)
- 6 are in an urban setting (population of 50,000 or more)



# Background

In 2017, the NC General Assembly passed a provision requiring that NCDOT’s Integrated Mobility Division submit an “annual report by May 15 on the progress of projects identified in plans (i) submitted to the Division over the 10-year period prior to the report and (ii) funded from Bicycle and Pedestrian Planning Grant funds.”

While this report’s primary purpose is to meet legislative requirements, the process has helped NCDOT effectively monitor project implementation, identify opportunities for program refinement, and categorize barriers that inhibit project implementation.

There were 113 adopted plans within the last ten (10) years that received funding from the Bicycle and Pedestrian Planning Grant program. Of these 113 plans, 27 are bicycle plans, 66 are pedestrian plans and 20 are combined bicycle and pedestrian plans. Since some communities completed both a pedestrian and bicycle plan in different award years, these 113 plans were developed by 104 individual communities across the state.

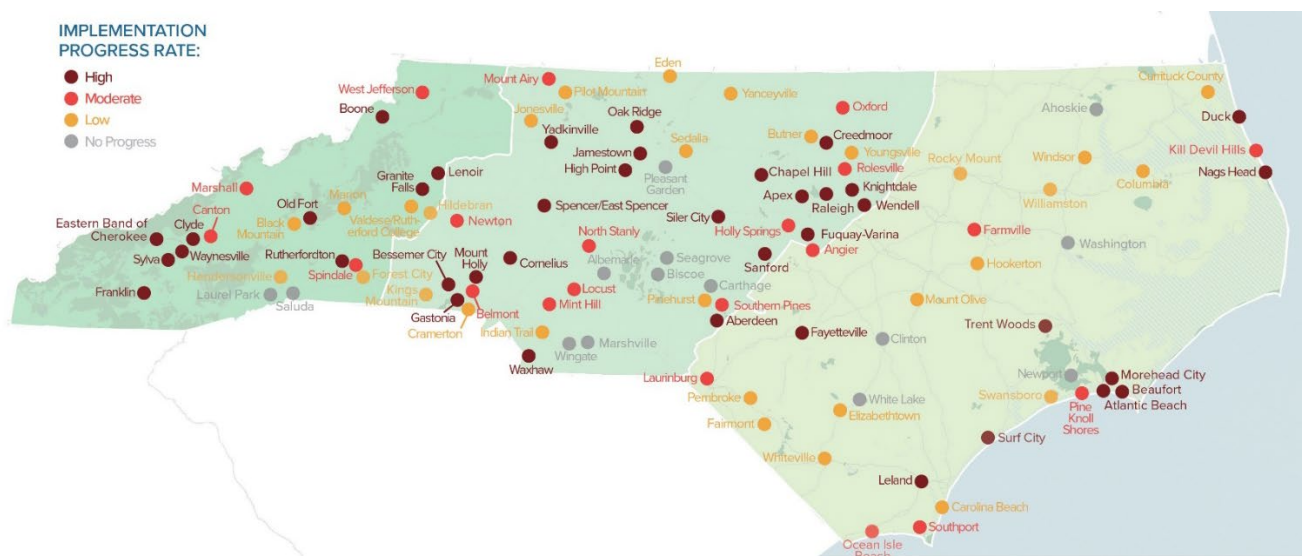
# Methodology

In November 2019, NCDOT contacted each of the 104 communities to inform them of the project and schedule. Each community was asked to complete an online survey and was provided a project list consisting of priority projects identified in the adopted plan and the previous year’s project status tracker spreadsheet. Respondents identified project implementation status (funded, under design, under construction, complete, or partially complete), non-infrastructure progress, funding strategies, and barriers to implementation.

NCDOT staff made multiple communication efforts to each of the 104 communities between November and February including email correspondence and phone calls. MPO/RPO staff assisted in outreach and communication to communities.

Of the 113 adopted plans, 108 surveys were completed by 99 individual communities.

Figure 1: Map of Planning Grant Recipients – Implementation Rate



## Implementation Progress

Implementation progress was determined by totaling the number of completed projects that were documented in adopted plans. Any project that was identified as funded, under design, under construction, complete, or partially complete is defined as implementation progress for this analysis. A level of implementation progress was assigned to each of the 113 adopted plans using the following scale:

- High Implementation Progress includes ten (10) or more completed projects
- Moderate Implementation Progress includes five (5) to nine (9) completed projects
- Low Implementation Progress includes one (1) to four (4) completed projects
- No Progress includes any plan that identified every project as unfunded

## Completed Projects

This study identified 1,343 bicycle and pedestrian projects completed in 98 communities across the state that come directly from an adopted plan funded through the Bicycle and Pedestrian Planning Grant Initiative program. Types of projects vary, but generally fall within the following categories:

- Intersection Improvements (crosswalks, pedestrian signals and ADA compliant curb ramps)
- New Sidewalks
- Sidewalk Repairs
- Shared Use Paths
- Bicycle Lanes

The total number of recommended projects in each plan vary drastically with some having as few as six (6) recommendations and others having more than 200. The scope of recommendations also varies significantly from plan to plan. Together these factors impact the level of implementation progress. For instance,

- Chapel Hill's Bicycle Plan has 18 high-level project and comprehensive recommendations (bicycle lanes, shared use path corridors, intersection improvements, etc.), with 16 having recorded progress.
- Raleigh's Pedestrian Plan has 226 itemized project recommendations (crosswalk installation, curb ramp improvements, etc.), with 166 having recorded progress.

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*“STIP Project R-4428, if constructed, will invest a substantial amount in bicycle and pedestrian infrastructure.”*

*~ Currituck County*

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## High Implementation Progress

42 plans achieved a high level of implementation progress. Plans are shown in alphabetical order.

Table 1: Communities with High Implementation Progress (10 or more projects complete)

Community Name	Plan Type	Plan Year Adopted	# of Projects Recommended	# of Projects Completed
Aberdeen	Pedestrian	2011	13	10
Apex	Bicycle	2019	51	12
Atlantic Beach	Bicycle	2012	58	15
Beaufort	Bicycle and Pedestrian	2018	78	37
Bessemer City	Pedestrian	2010	95	10
Boone	Pedestrian	2011	67	22
Chapel Hill	Bicycle	2014	18	16
Clyde	Pedestrian	2012	46	11
Cornelius	Pedestrian	2012	98	73
Cornelius	Bicycle	2017	154	118
Creedmoor	Pedestrian	2011	46	10
Duck	Pedestrian	2014	13	13
Eastern Band of Cherokee*	Pedestrian	2010	67	21
Fayetteville	Pedestrian	2018	180	49
Franklin	Bicycle and Pedestrian	2017	22	12
Fuquay-Varina	Pedestrian	2013	116	23
Gastonia	Pedestrian	2014	186	64
Granite Falls	Pedestrian	2011	32	18
High Point	Pedestrian	2017	179	11
Jamestown	Pedestrian	2010	20	11
Knightdale	Pedestrian	2013	40	10
Leland	Pedestrian	2016	86	17
Lenoir	Bicycle	2018	41	10
Lenoir	Pedestrian	2012	84	22
Morehead City	Pedestrian	2011	99	35
Mount Holly	Pedestrian	2013	88	15
Nags Head	Pedestrian	2014	23	15
Oak Ridge	Pedestrian	2013	30	10
Old Fort	Pedestrian	2011	16	18
Raleigh	Pedestrian	2013	226	166
Rutherfordton	Bicycle and Pedestrian	2017	12	10
Sanford	Bicycle	2014	31	11
Sanford	Pedestrian	2010	105	38
Siler City	Pedestrian	2013	22	17
Spencer/East Spencer	Bicycle and Pedestrian	2016	105	24
Surf City*	Bicycle and Pedestrian	2016	85	35
Sylva	Pedestrian	2011	24	14
Trent Woods	Pedestrian	2014	36	12



Waxhaw	Pedestrian	2012	26	14
Waynesville	Pedestrian	2010	63	38
Wendell	Pedestrian	2018	94	13
Yadkinville	Pedestrian	2010	23	10

\*Community did not submit updated project status tracker. 2019 data used.

### Moderate Implementation Progress

24 plans achieved a moderate level of implementation progress. Plans are shown in alphabetical order.

Table 2: Communities with Moderate Implementation Progress (5-9 Projects Complete)

Community Name	Plan Type	Plan Year Adopted	# of Projects Recommended	# of Projects Completed
Angier	Pedestrian	2014	23	7
Belmont	Bicycle	2013	78	5
Boone	Bicycle	2014	12	6
Canton	Bicycle and Pedestrian	2019	68	6
Carolina Beach	Bicycle	2011	54	6
Elizabethtown	Pedestrian	2013	38	8
Farmville	Pedestrian	2014	32	5
Holly Springs	Bicycle	2011	64	8
Kill Devil Hills	Pedestrian	2012	40	9
Laurinburg	Pedestrian	2015	106	9
Locust	Pedestrian	2010	36	7
Marshall	Pedestrian	2013	22	8
Mint Hill	Pedestrian	2011	164	8
Mount Airy	Pedestrian	2013	58	7
Newton	Pedestrian	2017	143	9
North Stanley	Bicycle and Pedestrian	2018	12	7
Ocean Isle Beach	Bicycle and Pedestrian	2014	16	6
Oxford	Pedestrian	2012	38	5
Pine Knoll Shores	Pedestrian	2010	22	5
Rolesville	Bicycle	2013	17	8
Southern Pines	Bicycle	2010	24	7
Southport	Pedestrian	2014	25	5
Spindale	Bicycle and Pedestrian	2019	40	8
West Jefferson	Pedestrian	2010	41	7

## Low Implementation Progress

32 plans achieved a low level of implementation progress. Plans are shown in alphabetical order.

Table3: Communities with Low Implementation Progress (1-4 Projects Complete)

Community Name	Plan Type	Plan Year Adopted	# of Projects Recommended	# of Projects Completed
Black Mountain	Bicycle	2016	21	4
Butner	Pedestrian	2011	18	4
Carolina Beach	Pedestrian	2018	38	1
Clinton	Bicycle	2015	27	1
Columbia	Pedestrian	2010	19	3
Cramerton	Bicycle	2018	12	1
Currituck County	Pedestrian	2018	104	4
Eden	Pedestrian	2010	57	2
Elizabethtown	Bicycle	2015	24	2
Fairmont	Bicycle and Pedestrian	2017	24	4
Forest City	Pedestrian	2016	39	2
Hendersonville	Bicycle	2017	14	1
Hildebran	Pedestrian	2010	32	2
Hookerton	Bicycle and Pedestrian	2015	67	1
Indian Trail	Bicycle	2011	125	3
Jonesville	Pedestrian	2015	42	1
Kings Mountain	Pedestrian	2014	153	1
Kings Mountain	Bicycle	2011	91	2
Marion	Bicycle	2016	22	1
Mount Olive	Bicycle and Pedestrian	2019	57	3
Pembroke	Pedestrian	2010	12	3
Pilot Mountain	Pedestrian	2013	43	3
Pinehurst	Bicycle	2015	12	1
Rocky Mount	Bicycle	2018	116	2
Sedalia	Bicycle and Pedestrian	2015	38	1
Swansboro	Bicycle	2011	10	1
Valdese/Rutherford College	Pedestrian	2016	20	2
Whiteville	Pedestrian	2014	87	3
Williamston	Pedestrian	2012	56	1
Windsor	Bicycle and Pedestrian	2018	84	2
Yanceyville	Pedestrian	2011	6	4
Youngsville	Bicycle and Pedestrian	2015	16	1

### No Progress

15 plans have not had any projects implemented since their adoption. Seven of these communities have submitted projects through the State’s strategic prioritization process (STI), including 15 projects submitted in the most recent round of prioritization (P5.0). Plans are shown in alphabetical order.

Table 4: Communities with No Implementation Progress (0 Projects Complete)

Community Name	Plan Type	Plan Year Adopted	# of Projects Recommended	STI Project Submittals
Ahoskie	Bicycle	2010	27	0
Albemarle	Bicycle	2010	51	5
Biscoe*	Pedestrian	2011	33	2
Carthage	Bicycle and Pedestrian	2019	35	0
Clinton	Pedestrian	2012	92	2
Laurel Park*	Bicycle and Pedestrian	2018	10	0
Marshville	Pedestrian	2010	50	0
Mount Holly	Bicycle	2019	55	1
Newport	Bicycle and Pedestrian	2017	17	1
Pleasant Garden	Bicycle and Pedestrian	2015	35	0
Saluda	Bicycle and Pedestrian	2016	34	3
Seagrove	Pedestrian	2019	31	0
Washington	Bicycle	2014	32	0
White Lake	Pedestrian	2010	14	1
Wingate	Pedestrian	2013	76	0

\* Community did not submit updated project status tracker. 2019 data used.

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*“Lack of funding. - We were going to apply for CRTPO Discretionary Funds grant funding last cycle, but we did not have a project far enough along to apply. We hope to be ready by the next cycle.*

*~ Town of Marshville*

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## Return on Investment

Detailed project costs have not been provided for every project implemented. The examples below highlight the return on investment in planning for a cross-section of communities.

- The Town of Waxhaw received \$20,000 in 2010 to develop a pedestrian master plan. That investment has resulted in \$20 million dollars in pedestrian infrastructure investments.
- The City of High Point received \$35,000 in 2015 to develop a pedestrian master plan. That investment has resulted in \$24.6 million dollars in pedestrian infrastructure investments.
- The Town of Rolesville received \$28,000 in 2011 to develop a bicycle master plan. That investment has resulted in \$7.6 million dollars in bicycle infrastructure investments.
- The Town of Indian Trail received \$35,000 in 2009 to develop a bicycle master plan. That investment has resulted in \$5 million dollars in bicycle infrastructure investments.
- The Town of Mount Airy received \$22,050 in 2011 to develop a pedestrian plan. That investment has resulted in \$6 million dollars in pedestrian infrastructure investments.
- The Town of Leland received \$35,000 in 2014 to develop a pedestrian master plan. That investment has resulted in \$1.9 million dollars in pedestrian infrastructure investments.
- The Town of Oxford received \$24,000 in 2011 to develop a pedestrian master plan. That investment has resulted in \$1.3 million dollars in pedestrian infrastructure investments.
- The Town of Chapel Hill received \$57,000 in 2012 to develop a bicycle master plan. That investment has resulted in \$10 million dollars in bicycle infrastructure investments.
- The Town of Newton received \$42,000 in 2016 to develop a pedestrian master plan. That investment has resulted in \$4 million dollars in pedestrian infrastructure investments.
- The Town of Yadkinville received \$20,000 in 2008 to develop a pedestrian master plan. That investment has resulted in \$1.8 million dollars in pedestrian infrastructure investments.

The average state and federal financial contribution for the 113 bicycle and pedestrian plans subject to this study are:

- \$49,000 for a plan in an urban setting
- \$31,000 for a plan in a suburban setting
- \$27,000 for a plan in a rural setting

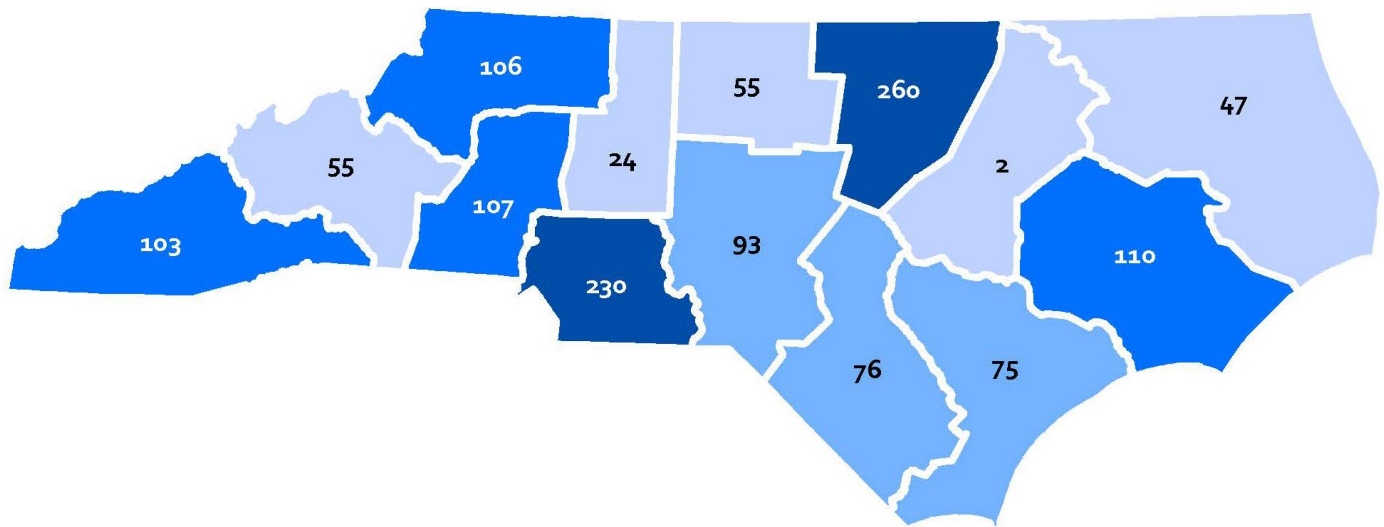
# NCDOT Highway Division Breakdown

Below is a breakdown of the number of bicycle and/or pedestrian plans completed in each NCDOT Highway Division, along with the number of projects implemented. The map below illustrates the data by division.

Table 5: NCDOT Highway Divisions –Projects Completed

NCDOT Divisions	# of Plans Adopted	# of Projects Completed
1	8	47
2	9	110
3	10	75
4	1	2
5	11	260
6	8	76
7	8	55
8	10	93
9	1	24
10	10	230
11	10	106
12	9	107
13	9	55
14	9	103

Figure 2: NCDOT Highway Divisions – Projects Completed





## Influence of Plan Adoption & Award Date

Plans reviewed for this report were adopted over a ten (10) year span. The timeframe of plan award and adoption have been found to impact implementation progress:

- Plans adopted between 2010 and 2014 have higher rates of implementation progress than plans adopted between 2015 and 2019.
- The average plan adoption date for plans with High and Moderate implementation progress is 2013. The average plan adoption date for plans with Low and No implementation progress is 2014.
- Plans awarded after 2014 may have not had enough time to process specific project funding requests, both locally and with the respective MPO/RPO.

## Barriers to Implementation

Communities were asked to identify barriers to implementation for each unfunded recommendation to better understand why some adopted recommendations haven't been implemented.

The following primary barriers were identified and are listed in order of importance:

- Lack of funding
- Limited right-of-way
- Utility relocation
- Limited staff and resources
- Lack of coordination between partner agencies
- Environmental constraints
- Feasibility of project scope
- Public opposition

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*“The planning process was well run, positively received, and produced good outcomes.  
The same cannot be said for implementation.”*

*~ City of Creedmoor*

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## Programs and Policies

Communities were asked to identify programs and policies implemented from plan recommendations. 47 communities implemented bicycle and pedestrian programs, and bicycle and pedestrian-focused policies were implemented by 82 communities.

Types of programs implemented vary, but generally fall within the following categories:

- Watch for Me NC
- Walk to School Day
- Bicycle & Pedestrian Wayfinding Signage
- Safe Routes to School
- Bike Rodeos
- Bicycle & Pedestrian Advisory Committee
- Bike to School Day
- Bicycle & Pedestrian Safety Education and/or Let's Go NC Curriculum
- Bike Month Activities
- Open Streets Events
- Bicycle Friendly Community Designation
- Bike Share Program

The most frequently adopted policies identified in plan recommendations are:

- Land Use Development Policies that Encourage Walkability and/or Bikeability
- Unified Development Ordinances
- Bicycle & Pedestrian Design Guidelines and/or Design Manual Revisions
- Complete Streets Policy
- Maintenance Policies for Bicycle & Pedestrian Facilities

## Additional Considerations

Communities implement bicycle and pedestrian improvements through a range of development activities, resurfacing projects, and other incidental opportunities that are difficult to track and may not be referenced in their adopted plans. This makes it difficult to judge implementation progress solely on plan recommendations alone. The scope of recommendations also varies significantly from plan to plan, substantially impacting the level of implementation progress. Inventorying completed projects by facility type may be helpful in evaluating how project scope impacts implementation rates.

Industry standards for bicycle and pedestrian planning have evolved over the past decade, with trends toward action-oriented planning documents. In response, the division has launched Project Acceleration Plans that are likely to result in higher implementation rates moving forward. Smaller, rural communities will especially benefit from these plans that focus on identifying key projects. This analysis has highlighted the need to supplement NCDOT's Bike/Pedestrian plans with a streamlined feasibility study process for participating communities to support implementation following plan adoption.

Lack of funding continues to be the primary barrier to project implementation, and funding constraints disproportionately impact rural communities. Rural communities are more heavily reliant upon the NCDOT STIP and Powell Bill Program to fund bicycle and pedestrian infrastructure. Without the ability to use state transportation funds to match federally funded bicycle and pedestrian projects, rural communities do not have access to many of the funding sources that are available to urban and suburban communities. As demonstrated in this report, areas with the highest rates of implementation are communities in the Charlotte and Raleigh metropolitan areas, and communities with the lowest implementation rates are those in rural areas of Western and Eastern North Carolina.

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*“Our biggest issue has been funding. We currently do not have a designated funding stream for pedestrian projects. All of our funding for both road improvements and sidewalk improvements come from Powell Bill. This is a small funding source when compared to the needs of the town.”*

*~ City of Southport*

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