

2019

Summary Report

NCDOT

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



West Jefferson

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 2019 Summary Report

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 2009 that were funded by the North Carolina Department of Transportation's Bicycle and Pedestrian Planning Grant Program.

Implementation Progress

119 plans have been adopted since 2009. 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 37 projects funded in the 2018-2027 STIP were identified through one of these plans.

- 35 communities exhibited High implementation progress – indicating ten (10) or more completed projects
- 31 communities exhibited Moderate implementation progress – indicating five (5) to nine (9) completed projects
- 39 communities exhibited Low implementation progress – indicating one (1) to four (4) completed projects
- 14 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 Boone received \$31,500 in 2010 to develop a pedestrian master plan. That investment has resulted in \$1 million dollars in pedestrian infrastructure investments.
- The Eastern Band of Cherokee received \$31,500 in 2008 to develop a pedestrian master plan. That investment has resulted in \$6.8 million dollars in pedestrian infrastructure investments.
- The Town of Jamestown received \$24,000 in 2008 to develop a pedestrian master plan. That investment has resulted in \$2.9 million dollars in pedestrian infrastructure investments.
- The Town of Fuquay-Varina received \$31,500 in 2012 to develop a pedestrian master plan. That investment has resulted in \$33.5 million dollars in pedestrian infrastructure investments.
- The Town of Duck received \$24,800 to develop a pedestrian plan in 2012. That investment has resulted in \$3 million dollars in pedestrian infrastructure investments.
- The Town of Carolina Beach received \$20,000 in 2009 to develop a bicycle master plan. That investment has resulted in \$1.8 million dollars in bicycle infrastructure investments.

Barriers to Implementation

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

- lack of funding
- limited right-of-way
- feasibility of project scope
- Other barriers identified include: low priority in plan and of policy-makers, limited staff and resources, lack of coordination between partner agencies, and environmental constraints.

Introduction

Legislative Mandate

In 2017, the NC General Assembly passed a provision requiring that NCDOT's Bicycle and Pedestrian 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 Bicycle and Pedestrian Transportation Division and the Transportation Planning Branch to encourage municipalities to develop comprehensive bicycle and pedestrian transportation plans.

To date, approximately \$6 million dollars in Federal planning and research funds have been used to support the development of 205 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 119 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 119 plans developed by 107 individual communities across the state. Of the 119 plans:

- 30 are bicycle plans
- 74 are pedestrian plans and
- 15 are combined bicycle and pedestrian plans.

Evaluation Process

A solicitation effort was initiated in November 2018 asking communities to document progress for each project identified in their adopted plans. Follow-up communication occurred through March 2019. Of the 119 adopted plans, responses were received for all 119 plans representing 107 individual communities. The following is a breakdown by community size:

- 95 are in a rural setting (population of 15,000 or less)
- 15 are in a suburban setting (population between 15,000 and 50,000)
- 9 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 Bicycle and Pedestrian 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 119 adopted plans within the last ten (10) years that received funding from the Bicycle and Pedestrian Planning Grant program. Of these 119 plans, 30 are bicycle plans, 74 are pedestrian plans and 15 are combined bicycle and pedestrian plans. Since some communities completed both a pedestrian and bicycle plan in different award years, these 119 plans were developed by 107 individual communities across the state.

Methodology

In November 2018, NCDOT contacted each of the 107 communities to inform them of the project and schedule. Each community was asked to complete a **Project Status Tracker** consisting of a customized spreadsheet of priority projects identified in the adopted plan. Respondents identified the project status (funded, under design, under construction, other) and barriers to implementation.

NCDOT staff made multiple communication efforts to each of the 107 communities between November and March, including email correspondence, phone calls. MPO/RPO staff assisted in outreach and communication to communities.

Of the 119 adopted plans, 114 project status trackers were completed by 102 individual communities, with 5 additional community responses collected via email or phone call.

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 119 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 1,409 bicycle and pedestrian projects completed in 88 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 (greenway corridors, intersection improvements, etc.), with 10 having recorded progress.
- Wilmington's Pedestrian Plan has 474 itemized project recommendations (crosswalk installation, curb ramp improvements, etc.), with 233 having recorded progress.

“We have received funding for one project through SPOT 4.0, hopefully it will be constructed as part of a larger roadway improvement project.”

~ Town of Marshall

High Implementation Progress

35 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 Adoption Year	# of Projects Recommended	# of Projects Completed
Angier	Pedestrian	2014	23	10
Atlantic Beach	Bicycle	2012	58	15
Beaufort	Bicycle	2009	36	29
Beaufort	Bicycle and Pedestrian	2018	78	41
Belmont	Pedestrian	2009	26	13
Boone	Pedestrian	2011	67	26
Carrboro	Bicycle	2009	45	36
Chapel Hill	Bicycle	2014	18	10
Clinton	Pedestrian	2012	92	13
Clyde	Pedestrian	2012	46	11
Cornelius	Bicycle	2017	154	80
Cornelius	Pedestrian	2012	98	50
Duck	Pedestrian	2014	13	10
Eastern Band of Cherokee	Pedestrian	2010	67	21
Fayetteville	Pedestrian	2018	180	47
Fuquay-Varina	Pedestrian	2013	116	23
Gastonia	Pedestrian	2014	186	61
Indian Trail	Pedestrian	2009	272	20
Jamestown	Pedestrian	2010	20	11
Kill Devil Hills	Pedestrian	2012	40	10
Knightdale	Pedestrian	2013	40	13
Lenoir	Bicycle	2018	41	15
Lenoir	Pedestrian	2012	84	10
Mint Hill	Pedestrian	2011	164	29
Morehead City	Pedestrian	2011	99	19
Newton	Pedestrian	2017	143	13
North Wilkesboro	Pedestrian	2009	21	10
Raleigh	Bicycle	2009	27	15
Raleigh	Pedestrian	2013	226	87
Sanford	Pedestrian	2010	105	32
Siler City	Pedestrian	2013	22	15
Surf City	Bicycle and Pedestrian	2016	85	35
Sylva	Pedestrian	2011	24	10
Waynesville	Pedestrian	2010	63	38
Wilmington	Pedestrian	2009	475	233

Moderate Implementation Progress

31 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	Adoption Year	# of Projects Recommended	# of Projects Completed
Aberdeen	Pedestrian	2011	13	9
Albemarle*	Bicycle	2010	51	5
Belmont	Bicycle	2013	78	9
Boone	Bicycle	2014	12	6
Carolina Beach	Bicycle	2011	54	6
Creedmoor	Pedestrian	2011	46	9
Currituck County	Pedestrian	2018	104	9
Eden	Pedestrian	2010	57	8
Elizabethtown	Pedestrian	2013	38	8
Farmville	Pedestrian	2014	32	5
Franklin	Bicycle and Pedestrian	2017	22	8
Holly Springs	Bicycle	2011	64	5
Leland	Pedestrian	2016	86	8
Locust	Pedestrian	2010	36	7
Marshall	Pedestrian	2013	22	8
Marshville	Pedestrian	2010	50	9
Mount Holly	Pedestrian	2013	88	9
Nags Head	Pedestrian	2014	23	6
New Bern	Pedestrian	2009	86	6
Oak Ridge	Pedestrian	2013	30	5
Pine Knoll Shores	Pedestrian	2010	22	6
Pittsboro	Pedestrian	2009	33	6
Rutherfordton	Bicycle and Pedestrian	2017	12	6
Salisbury	Bicycle	2009	77	8
Sanford	Bicycle	2014	31	9
Southern Pines	Bicycle	2010	24	7
Waxhaw	Pedestrian	2012	26	7
Wendell	Pedestrian	2018	94	7
West Jefferson	Pedestrian	2010	41	6
Wingate*	Pedestrian	2013	76	8
Yadkinville	Pedestrian	2010	23	6

* Community did not submit updated project status tracker. 2018 data used.

Low Implementation Progress

39 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	Adoption Year	# of Projects Recommended	# of Projects Completed
Banner Elk	Pedestrian	2009	23	1
Bessemer City*	Pedestrian	2010	95	1
Black Mountain	Bicycle	2016	21	4
Butner	Pedestrian	2011	18	3
Carolina Beach	Pedestrian	2018	38	1
Clinton	Bicycle	2015	27	2
Columbia	Pedestrian	2010	19	4
Cramerton	Bicycle	2018	12	1
Edenton	Pedestrian	2009	8	4
Elizabethtown	Bicycle	2015	24	2
Fairmont	Bicycle and Pedestrian	2017	24	2
Granite Falls	Pedestrian	2011	32	2
High Point	Pedestrian	2017	179	1
Hookerton	Bicycle and Pedestrian	2015	67	2
Indian Trail	Bicycle	2011	125	3
Jonesville	Pedestrian	2015	42	1
Kings Mountain	Bicycle	2011	91	1
Kings Mountain	Pedestrian	2014	153	1
Laurinburg	Pedestrian	2015	106	1
Marion	Bicycle	2016	22	4
Mount Airy*	Pedestrian	2013	58	3
Newport	Bicycle and Pedestrian	2017	17	1
Oxford	Pedestrian	2012	38	2
Pembroke	Pedestrian	2010	12	2
Pilot Mountain	Pedestrian	2013	43	2
Pinehurst	Bicycle	2015	12	1
Pleasant Garden	Bicycle and Pedestrian	2015	35	2
Rolesville	Bicycle	2013	17	2
Sedalia	Bicycle and Pedestrian	2015	38	1
Southport	Pedestrian	2014	25	4
Spencer/East Spencer	Bicycle and Pedestrian	2016	105	1
Trent Woods	Pedestrian	2014	36	2
Valdese/ Rutherford College	Pedestrian	2016	20	1
White Lake	Pedestrian	2010	14	3
Whiteville	Pedestrian	2014	87	4
Williamston	Pedestrian	2012	56	1
Windsor	Bicycle and Pedestrian	2018	84	2
Yanceyville*	Pedestrian	2011	6	1
Youngsville	Bicycle and Pedestrian	2015	16	1

* Community did not submit updated project status tracker. 2018 data used.

No Progress

14 plans have not had any projects implemented since their adoption. Seven of these communities have submitted a total of 40 projects through the State's strategic prioritization process (STI), including 26 projects submitted in the current 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	Adoption Year	# of Projects Recommended	STI Project Submittals
Ahoskie	Bicycle	2010	27	0
Biscoe	Pedestrian	2011	33	5
Cherryville	Pedestrian	2009	63	0
Forest City	Pedestrian	2016	39	1
Hendersonville	Bicycle	2017	14	8
Hildebran	Pedestrian	2010	32	0
Laurel Park	Bicycle and Pedestrian	2018	10	0
Ocean Isle Beach	Bicycle and Pedestrian	2014	16	1
Old Fort	Pedestrian	2011	16	0
Rocky Mount	Bicycle	2018	116	12
Saluda	Bicycle and Pedestrian	2016	34	6
Swansboro	Bicycle	2011	10	7
Thomasville	Bicycle	2009	48	0
Washington	Bicycle	2014	32	0

“It would be wonderful if there were funds available to jurisdictions to implement recommendations from the plans once complete.”

~Town of Chapel Hill

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 Boone received \$31,500 in 2010 to develop a pedestrian master plan. That investment has resulted in \$1 million dollars in pedestrian infrastructure investments.
- The Eastern Band of Cherokee received \$31,500 in 2008 to develop a pedestrian master plan. That investment has resulted in \$6.8 million dollars in pedestrian infrastructure investments.
- The Town of Jamestown received \$24,000 in 2008 to develop a pedestrian master plan. That investment has resulted in \$2.9 million dollars in pedestrian infrastructure investments.
- The Town of Fuquay-Varina received \$31,500 in 2012 to develop a pedestrian master plan. That investment has resulted in \$33.5 million dollars in pedestrian infrastructure investments.
- The Town of Mount Holly received \$22,050 in 2012 to develop a pedestrian master plan. That investment has resulted in \$2 million dollars in pedestrian infrastructure investments.
- The Town of Duck received \$24,800 to develop a pedestrian plan in 2012. That investment has resulted in \$3 million dollars in pedestrian infrastructure investments.
- The Town of Carolina Beach received \$20,000 in 2009 to develop a bicycle master plan. That investment has resulted in \$1.8 million dollars in bicycle infrastructure investments.
- The Town of Nags Head received \$24,000 in 2013 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 119 bicycle and pedestrian plans subject to this study are:

- \$52,000 for a plan in an urban setting
- \$30,000 for a plan in a suburban setting
- \$26,000 for a plan in a rural setting

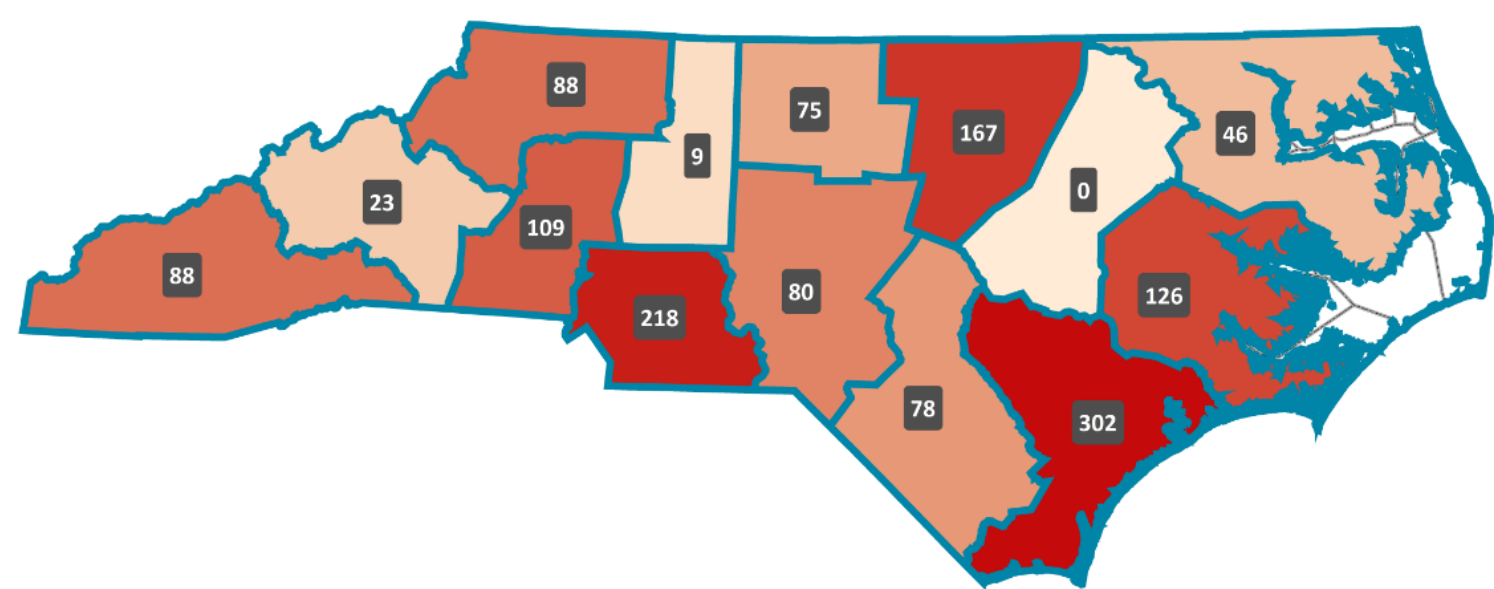
NCDOT Highway Division Breakdown

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 Completed	# of Projects Completed
1	9	46
2	11	126
3	10	302
4	1	0
5	11	167
6	8	78
7	9	75
8	9	80
9	3	9
10	10	218
11	12	88
12	10	109
13	8	23
14	8	88

Figure 1: 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 2009 and 2013 have higher rates of implementation progress than plans adopted between 2014 and 2018.
- The average plan adoption date for plans with High and Moderate implementation progress is 2012. The average plan adoption date for plans with Low and No implementation progress is 2014.
- Plans awarded before 2010 may have project recommendations that no longer meet current design standards.
- Plans awarded after 2010 may have not had enough time to process specific project funding requests, both locally and with the respective MPO/RPO.

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

~ City of Creedmoor

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 Staff and Resources
- Limited Right-of-Way
- Feasibility of Project Scope
- Environmental Constraints
- Low Priority in Plan and of Policy-Makers
- Difficulty in Coordinating with Partner Agencies

*“In North Wilkesboro, our topography is a major challenge to
ADA accessibility and pedestrian projects.”*

~ Town of Wilkesboro

Programs and Policies

Communities were asked to identify programs and policies implemented from plan recommendations. 34 communities implemented bicycle and pedestrian programs, and bicycle and pedestrian-focused policies were implemented by 33 communities.

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

- Watch for Me NC Participation
- Walk/Bike to School/Work Events
- Bicycling Education
- Wayfinding Signage and Maps
- Sidewalk Maintenance
- Bicycle Helmet Distribution

The most frequently adopted policies identified in plan recommendations are:

- Unified Development Ordinance amendment establishing minimum sidewalk widths.
- Unified Development Ordinance amendment requiring the installation of sidewalks during the construction of commercial developments.
- Unified Development Ordinance amendment establishing bike parking requirements.
- Development of a Bicycle and Pedestrian Advisory Committee.
- Revision of Design Manuals to accommodate bicycle and pedestrian facilities.
- Inclusion of bicycle and pedestrian facility recommendations in comprehensive and small area plans.
- Proclamations of Support by Mayor and Town/City Council.

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 feasibilities study process for participating communities to support implementation following plan adoption.

“The hard part is getting these recommendations to come to fruition with all of the other infrastructure woes we are dealing with. I hope that in the future, we can get more consistent bike/ped funding established.”

~ City of Southport
