

## SUMMARY

The following is a summary of the recommendations and implementation steps for the Bicycle Chapter.

Recommendations in the plan were developed based on the existing conditions and theme goals were set for the implementation of the plan. The icon(s) after each recommendation in the **Summary** section will denote which plan goal(s) that the recommendation addresses: Mobility, Safety, Health, Economy, or Environment (as noted in the **Introduction** section).



MOBILITY



SAFETY



HEALTH



ECONOMY





ENVIRONMENT



## Infrastructure

**Map 2-17** shows the Bicycle Facility Recommendations by facility type in the Greensboro MPO. **Map 2-18** shows the Bicycle Facility Recommendations by phasing in the Greensboro MPO. **Table 2.10** lists the locations of bicycle facilities, the limits of each segment, the suggested phasing, and the mileage in bike-lane miles and centerline miles.











## BICYCLE ACCOMMODATIONS

### Toolbox

- Items in the Bicycle Toolbox cover a number of innovative facility types and strategies for improving bicycle infrastructure in the Greensboro MPO. Traditional bicycle facilities are also covered. These new types of improvements have been tested in other cities in the United States and are recommended to create safe comfortable bicycle networks in the MPO. These facilities will be implemented over time and piloted in appropriate locations within the MPO.  
- The implementation strategies listed at the end of the toolbox are the most common for implementing bicycle facilities. It is recommended that the City of Greensboro and MPO review all opportunities for getting bicycle facilities installed, whether

through new construction, resurfacing, or narrowing lanes. This includes opportunities through the use of scratch and remark projects where possible.  

### On-Road Bicycle Facilities: Urban Bicycle Facilities

- This plan recommends a total of 334 bike-lane miles of urban bicycle facilities (167 centerline miles). Broken down across facility types, the recommendations are (in bike-lane miles and centerline miles): 268 (134) miles of bicycle lanes, 20 (10) miles of protected bicycle lanes/cycletracks, 41 (20.5) miles of shared lane markings, and 5 (2.5) miles of roadways that require future study. These will be implemented over time, but 120.45 bike-lane miles are planned to be implemented within five years of the completion of the plan.    
- **Map 2-17** and **Table 2.10** provide more information about the bicycle facilities recommended in the plan. **Map 2-18** displays the bicycle recommendations by short-, medium- and long-term phasing.     
- MPO area jurisdictions would do well to explore new implementation strategies for on-road bicycle facilities beyond traditional resurfacing, restriping, and widening strategies that make use of existing funding streams. To more aggressively implement on-road bicycle facilities, funds must be sought from local sources (including bond funds), the NCDOT Prioritization process, Greensboro MPO-directed transportation funding, and grant funding outside traditional transportation funding sources. The City of Greensboro has already taken the step to apply for the PeopleForBikes Community Grant to build on-road bicycle facilities. 

### On-Road Bicycle Facilities: Paved Shoulders

- 996 lane miles (498 centerline miles) of four foot paved shoulders are recommended in this plan. The top priority paved shoulder projects are on Lake Brandt Rd, Church St, NC 150, and McConnell Rd. Implementation will be difficult due to myriad physical, institutional, and financial challenges. The MPO and member agencies should continue to study this issue and find opportunities



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to complete these projects.   

- The MPO, member agencies, and NCDOT should also explore the possibility of doing small spot improvement projects on roadways with difficult curves and hills that are dangerous for bicyclists to navigate due to the high-speed traffic. This type of improvement would be more cost-effective for NCDOT and the MPO, and could address the issue more quickly than attempting to create paved shoulder projects for lengthy corridors. Top priority corridors will be studied first to understand the major issues that need to be resolved. 



### *Signalization and Intersections*

- This plan recommends creating an inventory of locations where signals do not work for bicyclists, and to work with GDOT or NCDOT staff to recalibrate the loop detectors as possible to detect bicycles. This inventory should be gathered by the end of 2016, and afterwards plans should be made to re-calibrate or replace those loops that do not work for bicyclists.  
- Considering possible difficulties with loop calibration, it is recommended that the City of Greensboro and NCDOT consider and experiment with video detection or other technologies that detect bicyclists and other vehicles without the need for in-pavement loops. These should be included during routine maintenance or new construction when possible.  
- The Diagonal Quadrupole Loop Detector, which winds the wiring for the loops in a different manner than conventional loops, can detect bicyclists more easily while avoiding the issue of unintentional detection in the adjacent travel lane. It is recommended that this winding technique be explored by the City of Greensboro and NCDOT. This should be considered for implementation in areas where traditional loop windings are not detecting cyclists. 
- The Bicycle Detector Pavement Marking can help position bicyclists in the correct location for optimum detection by











various detection methods. It is recommended that the City and NCDOT consider future applications of this marking. Implementation in bicycle lanes or in conjunction with video detection would be good places to start. 





- The ***Bicycle Toolbox*** section of this chapter provides more information on crossing markings and other types of intersection improvements for bicyclists. It is recommended that the City of Greensboro consider using these markings at intersections where bicycle-motorist conflicts are common and at intersections that bicyclists often use.  
- It is recommended that future bike lane designs use additional strategies for bike lanes approaching intersections so as to avoid disconnects between bike lane corridors – this includes but is not limited to more frequent use of sharrows along corridors and at intersections, combined bike lane/turn lanes, and the use of green pavement at conflict points. Upcoming projects can include pilot trials of these types of strategies.  
- This plan recommends studying how other cities have used bicycle signal heads, where they may be applicable, and consider their use in future bicycle infrastructure improvements when warranted. Corridors with heavy bicycle traffic should be the first locations to consider bicycle signal heads.  

### *End-of-Trip Facilities*






- The recommendations provided by the BPAC on improving the City of Greensboro Bicycle Parking Program should be considered for implementation.  
- This plan recommends designating the Inverted U, Inverted U series, and the Post and Ring (Bollard) types of bicycle racks as the standard for short-term bicycle facilities in the City of Greensboro. Racks that differ from this standard should meet the APBP Guidelines for what constitutes an acceptable rack design. The City can make this an official policy immediately and has already been installing racks of

the Inverted U design. 

- It is recommended that the design guidance for the bicycle parking ordinance for the City be updated to provide more detail on acceptable rack designs, including adding specific guidelines to describe which racks are acceptable, which are not, and why. This should be updated in the next two to three years as the Bicycle Parking Program is undergoes further development. 
- This plan recommends replacing non-standard bicycle racks that are in the public domain with the U-racks or bollard racks that meet the criteria for acceptable bicycle parking. This can be completed over the course of 2016 with the current bicycle map information. 
- This plan recommends dedicating more funding and staff resources for an expanded Greensboro Bicycle Parking Program. A review of program options should be conducted in early 2016. 
- This plan recommends revising the Greensboro Land Development Ordinance (LDO) to expand the bicycle parking development requirements. Possible revisions may consist of expanding the zoning districts covered by the requirements, increasing the number of bicycle parking spaces required when developing adjacent to dedicated bicycle facilities, and strengthening the design guidelines for bicycle racks.  
- It is recommended that the digital inventory of the bicycle parking network be updated and maintained. The bicycle parking inventory must be updated every time a new rack is installed, and be added to the City's general inventory of infrastructure assets. However, the bicycle parking inventory should also take stock of public bicycle racks that are not owned by the City to have a complete picture of the existing network. 
- Bicycle parking racks should be installed at strategic and appropriate locations, and work with businesses that can become partners in the bicycle parking program.  
- The City should experiment with innovative bike parking strategies such as bicycle corrals. Other strategies should be considered as appropriate.  

- This plan recommends that bicycle parking be targeted towards locations in the unincorporated County and MPO Towns that see high recreational bicycle traffic, at schools where students can avoid high-speed roadways to reach the school, or near popular greenway and trail facilities.  
- This plan recommends considering strategic placement of bicycle maintenance stations for public use along corridors frequently traveled by bicyclists. The City and MPO staff should support the placement of these stations by local advocacy groups and others as the need arises.  

## USAGE AND VOLUME

- This plan recommends that the City of Greensboro continue to participate in the Permanent Counting Program with NCDOT and cooperate on data collection and the development of seasonal and area type factors. The City will participate in the program at least until the end of 2016. 
- This plan recommends that the City continue to use Miovision to count bicycle traffic and to support the needs of the bicycle counting program. 
- It is recommended that the City and MPO continue to use mobile bicycle counting methodologies through the Greensboro Department of Transportation. Part of this includes experimenting in an effort to determine which technologies are most effective for this task. 
- MPO staff should conduct research on applying counting data, such as calculating bicycle crash rates, developing infrastructure, evaluating before and after improvement project studies, etc.  

## MAINTENANCE

### *City of Greensboro Resurfacing and Street Maintenance*

- This Plan recommends that the City of Greensboro resurfacing budget be increased to catch-up on deferred maintenance needs and to provide adequately for meeting annual maintenance targets on the city-maintained roadways. Part of the strategy for this should include an increased maintenance component on the next City



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Transportation Bond.  

- Resurfacing of greenways should be adequately funded via ongoing appropriations and included in the next transportation bond, so that greenway pavement maintenance is kept at an equal level to normal streets.




- It is recommended that the street resurfacing schedule be prioritized for bicycle facility implementation. Thus streets with short-term priority bicycle facilities, when appropriate, would be given extra priority for resurfacing. The recommended bicycle facilities can be used as an input for resurfacing review starting in 2016. 

- This plan recommends that additional funds be directed to maintaining new bicycle-specific pavement markings in the City of Greensboro that will be added as a result of this plan. Current funding allocations are not enough to adequately maintain existing markings, and new markings will place additional burden on GDOT maintenance staff.  

- GDOT should work with Field Operations, the City Contact Center, and Bicycling in Greensboro to further raise awareness of keeping leaves out of streets, bike lanes, and off of sidewalks. This collaboration work should begin in 2016 before fall loose leaf collection.  

### *NCDOT Resurfacing in Guilford County and MPO Towns*

- This plan endorses and recommends the continuation of increased funding levels for state-system street resurfacing that began in 2011. 
- The Greensboro MPO will continue to review the annual resurfacing contracts of NCDOT Division 7 to provide comments about streets which should be reviewed for the feasibility of adding paved shoulder during resurfacing. The MPO should also encourage NCDOT to restrripe rural roadways to include designated shoulder areas after resurfacing where it is possible to do so. Staff will review the resurfacing list on

an annual basis starting the end of 2015 or beginning of 2016.





Map 2-17

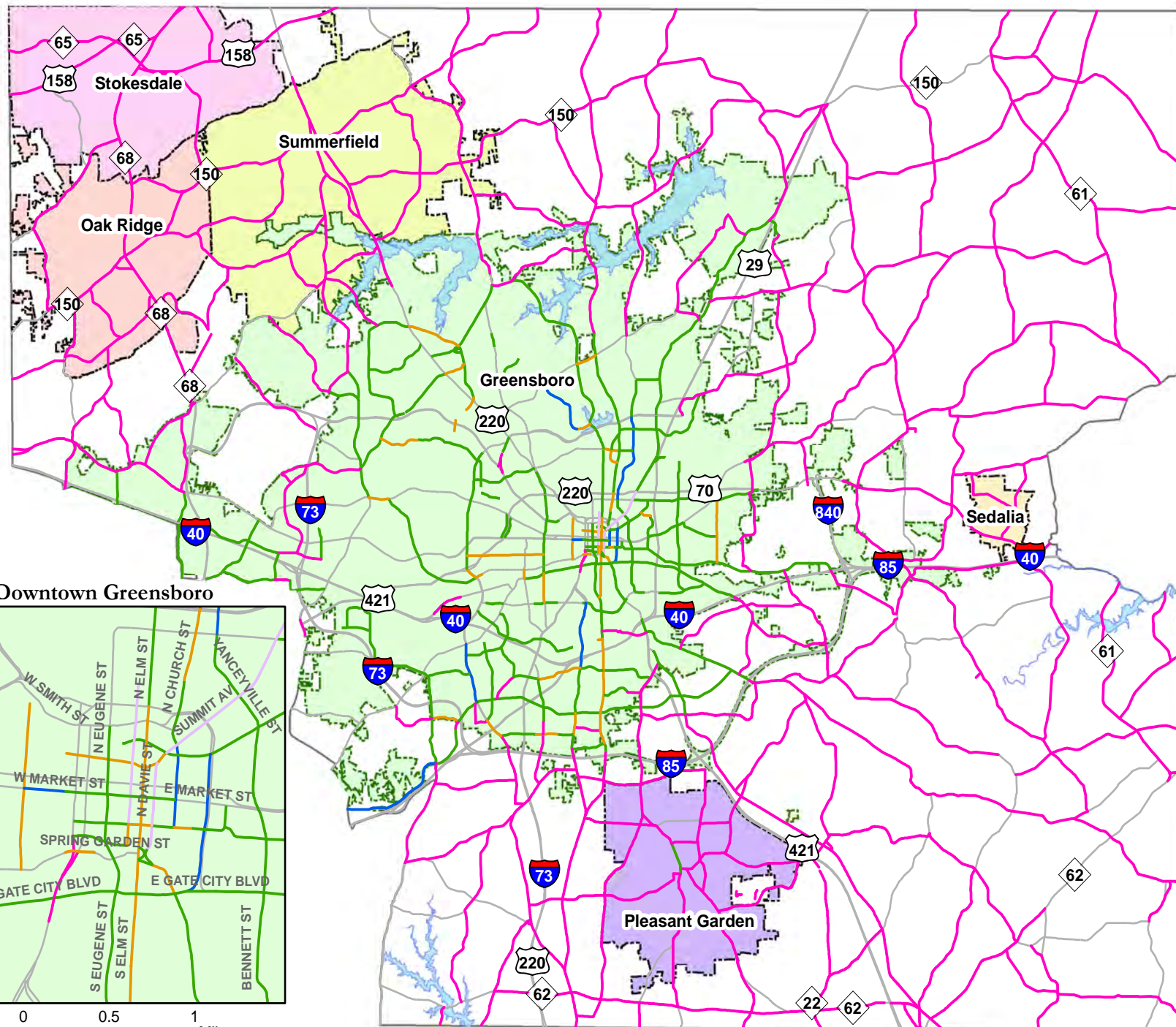
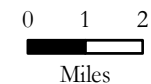
**BICYCLE  
FACILITY  
RECOMMENDATIONS  
BY  
FACILITY  
TYPE  
IN  
GREENSBORO  
MPO AREA**

Legend

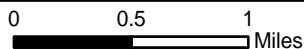
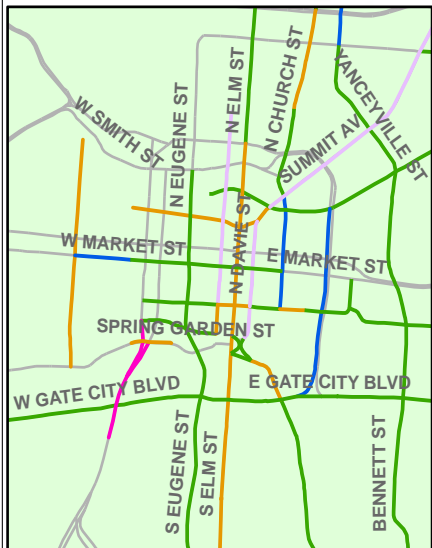
- Recommendation**
- Protected Lane (\*)
  - Bicycle Lane
  - Sharrows
  - Shoulders
  - Future Study Pending
- Major Street**

- Lakes**
- +

(\*): Further design will decide if facility type is buffered bike lane or protected bike lane



Downtown Greensboro



Map 2-18  
BICYCLE  
FACILITY  
RECOMMEND-  
ATIONS  
BY  
PHASING  
IN MPO AREA

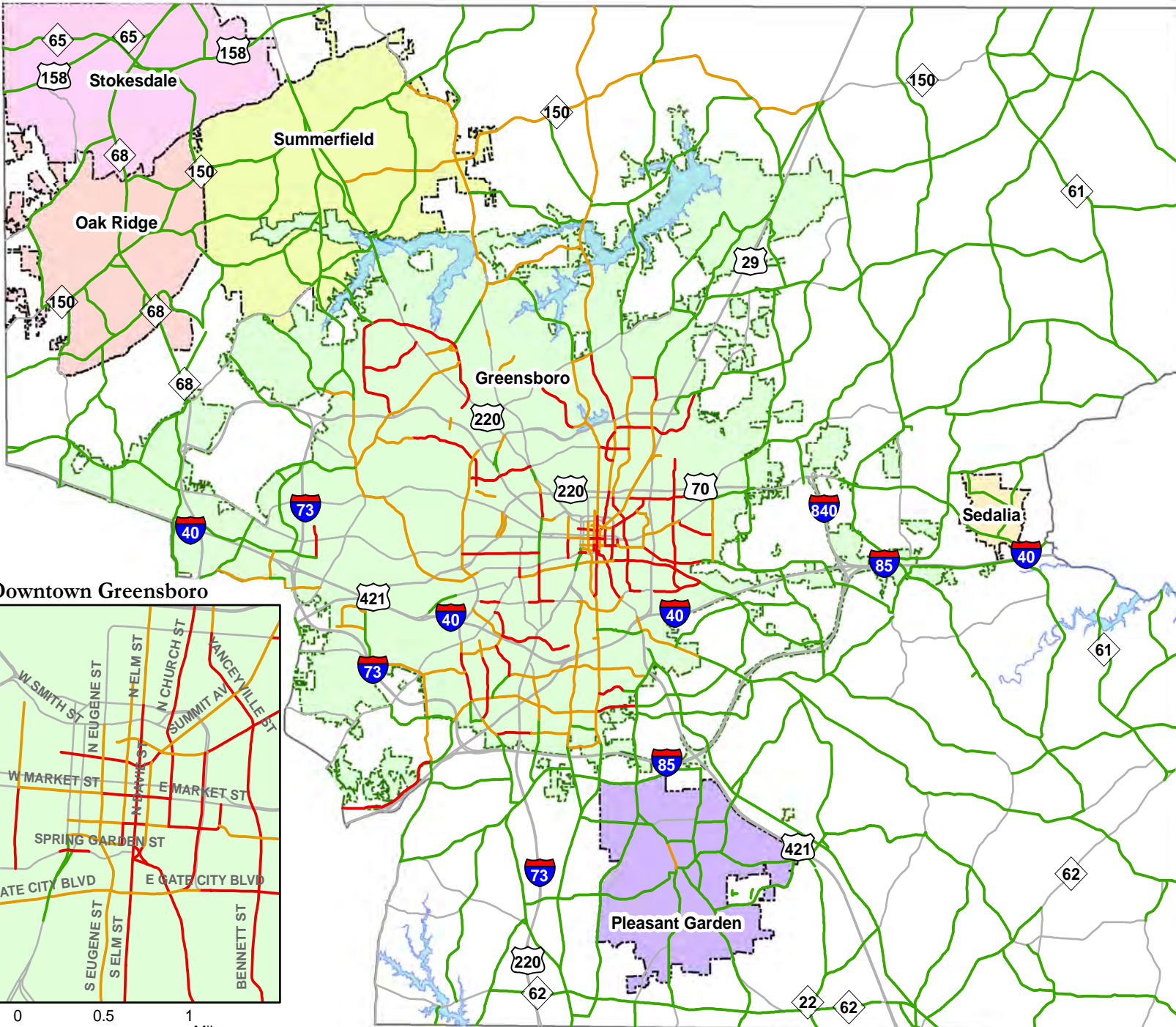
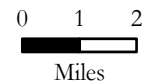
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Recommendation

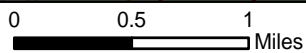
- Short Term
- Middle Term
- Long Term

Major Street

Lakes



Downtown Greensboro





Name	From	To	Phasing	Bike-lane Miles*	CenterLine Miles**
<b>BICYCLE LANES</b>					
16th St	US 29	Cone Blvd	ST	1.84	0.92
16th St	N Church St	US 29	ST	2.31	1.16
16th St	Cone Blvd	McKnight Mill Road	ST	0.99	0.49
Alamance Church Rd	MLK Jr. Drive	City Limits	MT	3.17	1.58
Alamance Church Rd	City Limits	I-85	LT	2.36	1.18
Aycock St	Spring Garden St	Benjamin Parkway	LT	2.10	1.05
Aycock St	Spring Garden St	W Lee St	ST	0.34	0.17
Bass Chapel Rd	Air Harbor Road	N Elm St/Lake Jeanette Rd	LT	2.71	1.35
Benbow Rd	E Washington St	Sullivan St	MT	1.65	0.83
Benjamin Parkway	240' N of Westmoreland Dr	Battleground Ave	MT	0.75	0.38
Benjamin Parkway	Garland Dr	Westover Terrace	MT	0.63	0.31
Bennett St	Florida St	Lee St	ST	1.44	0.72
Bennett St	Lee St	Washington St	ST	0.60	0.30
Bessemer Ave	Summit Ave	N English St	ST	2.22	1.11
Bessemer Ave	English St	Burlington Rd	ST	1.85	0.92
Boulder Rd	S Chimney Rock Rd	Burnt Poplar Rd	MT	1.27	0.64
Burlington Rd	E Market St/Huffine Mill Road	E Wendover Ave	LT	2.41	1.20
Burnt Poplar Rd	Regional Rd	Boulder Rd	LT	3.54	1.77
Chimney Rock Rd	Gallimore Dairy Rd	Boulder Rd	MT	2.63	1.31
Church St	Summit Ave	Murrow Blvd	ST	0.38	0.19
Church St	Wendover Ave	Golden Gate Dr	MT	1.45	0.73
Church St	Murrow Blvd	N Park Dr	ST	0.36	0.18
Church St	Cone Blvd	Pisgah Church Rd	ST	3.31	1.65
Church St	Golden Gate Dr	Cone Blvd	MT	1.85	0.93
Church St	Pisgah Church Rd	Old Lake Jeanette Rd	LT	1.07	0.53
Cornwallis Dr	Holden Rd	Lawndale Dr	ST	3.13	1.56
Cornwallis Dr	N Church St	Yanceyville St	ST	0.66	0.33
Cotswold Terrace	Battleground Ave	Old Battleground Ave	MT	1.44	0.72
Cotswold Terrace	Cotswold Ave	Old Battleground Ave	MT	0.39	0.20
Creek Ridge Rd	Randleman Rd	S Elm-Eugene St	MT	1.16	0.58
Creek Ridge Rd	Four Seasons Blvd	Rehobeth Church Rd	MT	1.19	0.60
Davie St	Martin Luther King Jr Dr	McGee St	ST	0.22	0.11
Drawbridge Parkway	Horse Pen Creek Rd	Battleground Ave	ST	3.14	1.57
Dudley St	Washington St	Lindsay St	ST	1.29	0.64
Eagle Rd	Bridford Parkway	Stanley Rd	MT	1.39	0.69
Elm St	Fisher Ave	Cornwallis Dr	MT	3.16	1.58
Elm St	Bass Chapel/Lake Jeanette Rd	Pisgah Church Rd	LT	2.98	1.49
Elm St	Cornwallis Dr	Cone Blvd	MT	0.99	0.49
Elm St	Cone Blvd	Pisgah Church Rd	MT	3.37	1.69
Elm-Eugene St	Meadowview Rd	Florida St	MT	1.30	0.65

\* This is the primary measurement for bicycle facilities in the Greensboro MPO.

\*\* Centerline miles are shown here for comparison purposes with other plans.

**Table 2.10**

**Bicycle Facility Recommendations By Facility Type and Phasing**



Name	From	To	Phasing	Bike-lane Miles*	CenterLine Miles**	
<b>BICYCLE LANES</b>						
Introduction	Elm-Eugene St	I-85	Elmsley Dr	LT	<b>0.41</b>	0.21
	Elmsley Dr	Randleman Rd	Elm-Eugene St	MT	<b>1.62</b>	0.81
Infrastructure	English St	E Bessemer Ave	Phillips Ave	ST	<b>1.75</b>	0.88
	English St	E Lee St	E Market St	ST	<b>2.09</b>	1.04
	English St	E Market St	E Bessemer Ave	ST	<b>1.21</b>	0.61
Safety	English St	E Florida St	E Lee St	ST	<b>1.04</b>	0.52
	Eugene St	Florida St	Lee St	MT	<b>2.27</b>	1.14
Policies and Programs	Eugene St	Lee St	Smith St	MT	<b>1.90</b>	0.95
	Fleming Rd	Lewiston Rd	Bledsoe Dr	MT	<b>2.10</b>	1.05
	Fleming Rd	Bledsoe Dr	Fox Chase Rd	MT	<b>0.48</b>	0.24
	Fleming Rd	New Garden Rd	Fox Chase Rd	MT	<b>2.19</b>	1.10
Summary	Florida St	Marsh St	Britton St	MT	<b>2.61</b>	1.31
	Florida St	Holden Rd	Gate City Blvd	ST	<b>0.87</b>	0.44
	Florida St	Coliseum Blvd	Lexington	ST	<b>0.59</b>	0.59
	Florida St	Bennett	Benbow	ST	<b>0.48</b>	0.24
	Florida St	Hooks	Lee St	ST	<b>2.28</b>	1.14
	Four Seasons Blvd	Creek Ridge Rd	Vanstory St	ST	<b>1.61</b>	0.80
	Frazier Rd	Groometown Rd	Holden Rd	MT	<b>2.12</b>	1.06
	Gallimore Dairy Rd	NC 68 S	W Market St	LT	<b>3.94</b>	1.97
	Gate City Blvd	S Chapman St	S Eugene St	MT	<b>3.53</b>	1.77
	Gate City Blvd	Murrow Blvd	Willow Rd	ST	<b>2.53</b>	1.26
Gate City Blvd	Willow Rd	E Florida St	ST	<b>1.86</b>	0.93	
Gate City Blvd	E Florida St	I-40	LT	<b>1.54</b>	0.77	
Gate City Blvd	S Eugene St	Murrow Blvd	MT	<b>1.05</b>	0.52	
Glendale Dr	S Holden Rd	Donegal Dr	ST	<b>1.69</b>	0.85	
Glendale Dr	Glendale Ct	Randleman Rd	MT	<b>0.74</b>	0.37	
Golden Gate Dr	E Cornwallis Dr	Church St	ST	<b>0.86</b>	0.43	
Green Valley Rd	W Market St	W Friendly Ave	MT	<b>1.17</b>	0.58	
Groometown Rd	High Point Rd	Grandover Parkway	MT	<b>4.36</b>	2.18	
Hilltop Rd	High Point Rd	Stanley Rd	MT	<b>2.48</b>	1.24	
Hobbs Rd	Chesapeake Dr	Starmount Farms Dr	ST	<b>4.54</b>	2.27	
Holden Rd	Wendover Ave	Benjamin Parkway	MT	<b>5.57</b>	2.79	
Holts Chapel Rd	E Market St	Franklin Blvd	ST	<b>1.83</b>	0.92	
Hornaday Rd	Marietta Rd	Guilford College Rd	MT	<b>2.12</b>	1.06	
Horse Pen Creek Rd	New Garden Rd	Battleground Ave	ST	<b>6.76</b>	3.38	
Industrial Ave	S Elm-Eugene St	Pleasant Garden Rd	MT	<b>2.44</b>	1.22	
Lake Brandt / Cotswold	Cotswold Ave	Old Battleground Rd	MT	<b>0.30</b>	0.15	
Lake Brandt Rd	Old Battleground Rd	Lawndale Dr	LT	<b>2.45</b>	1.23	
Lake Brandt Rd	Lawndale Dr	Air Harbor Rd	MT	<b>0.82</b>	0.41	
Lake Jeanette Rd	Three Meadows Rd	Tarrywood Dr	MT	<b>1.00</b>	0.50	

\* This is the primary measurement for bicycle facilities in the Greensboro MPO.

\*\* Centerline miles are shown here for comparison purposes with other plans.

**Table 2.10**

**Bicycle Facility Recommendations By Facility Type and Phasing**



Name	From	To	Phasing	Bike-lane Miles*	CenterLine Miles**
<b>BICYCLE LANES</b>					
Landmark Center Blvd	Eagle Rd	Stanley Rd	MT	2.03	1.01
Lawndale Dr	Cottage Pl	Summerset Village Apts	MT	0.68	0.34
Lewiston Road Extension	Lewiston Rd	Fleming Rd	LT	1.55	0.78
Liberty Rd	Pleasant Garden Rd	J M Hunt Jr Expy	LT	3.42	1.71
Lindell Rd	W Market St	W Friendly Ave	MT	1.01	0.50
Lindsay St	Murrow Blvd	Yanceyville St	ST	0.61	0.31
Lindsay St	Yanceyville St	E Bessemer Ave	ST	1.41	0.71
Lindsay St	Battleground Ave	Murrow Blvd	MT	1.10	0.55
Market St	Mendenhall St	Cedar St	MT	0.23	0.23
Market St	Cedar St	Eugene St	MT	0.25	0.25
Market St	Eugene St	Church St	ST	0.80	0.40
Market St	Benbow Rd	Holts Chapel Rd	MT	1.85	0.93
Martin Luther King Jr. Dr	E Florida St	Lee St	ST	1.90	0.95
Martin Luther King Jr. Dr	Buff St	Alamance Church Rd	MT	0.67	0.34
Martin Luther King Jr. Dr	Elm St	Davie St	ST	0.18	0.09
McConnell Rd	Beaumont Ave	I-40	LT	6.41	3.20
McConnell Rd	Benbow Rd	Beaumont Ave	ST	2.93	1.47
McGee St	S Spring St	S Davie St	MT	0.66	0.33
McGee St	Elm St	Martin Luther King Jr Dr	ST	0.21	0.10
Meadowview Rd	S Holden Rd	Hardie St	MT	2.24	1.12
Meadowview Rd	Vanstory St	Urban Dr	ST	1.16	0.58
Meadowview Rd	Urban	Atlanta	ST	2.36	1.18
Montcastle Dr	S Elm-Eugene St	Bracken Lake Way	ST	1.27	0.63
Muir's Chapel Rd	Tower Rd	Friendly Ave	MT	1.89	0.94
Muir's Chapel Rd	W Friendly Ave	W Market St	MT	1.23	0.61
New Garden Rd	Fleming	Battleground Ave	MT	6.06	3.03
New Garden Rd	W Friendly Ave	Fleming Rd	MT	1.44	0.72
Northline Ave	Hobbs Rd	Pembroke Rd	MT	0.95	0.47
Old Battleground Ave	Lake Brandt Rd	Battleground Ave	ST	2.56	1.28
Pastor Anderson Way	Washington St	Market St	ST	0.24	0.12
Pegg Rd	I-40	Gallimore Dairy Rd	LT	2.58	1.29
Phillips Ave Ramp	Summit Ave	Tucker St	MT	0.62	0.31
Pinecroft Rd	Twin Lakes Dr	Koury Blvd	MT	0.84	0.42
Pinecroft Rd	Twin Lakes Dr	W Vandalia Rd	ST	1.88	0.94
Pinecroft Rd	W Vandalia Rd	S Holden Rd	ST	1.02	0.51
Pleasant Garden Rd	Sheraton Park Rd	Thrower Rd	LT	0.22	0.11
Pleasant Garden Rd	Thrower Rd	Rygate Rd	MT	1.27	0.63
Randleman Rd	Elmsley Dr	Glendale Dr	MT	0.67	0.34
Randleman Rd	Creek Ridge Rd	Vandalia Rd	MT	2.13	1.07
Rankin Rd	Yanceyville St	Summit Ave	ST	1.12	0.56

\* This is the primary measurement for bicycle facilities in the Greensboro MPO.

\*\* Centerline miles are shown here for comparison purposes with other plans.

**Table 2.10**

**Bicycle Facility Recommendations By Facility Type and Phasing**



Name	From	To	Phasing	Bike-lane Miles*	CenterLine Miles**	
<b>BICYCLE LANES</b>						
Introduction	Reedy Fork Parkway	Eckerson Rd	Summit Ave	LT	0.92	0.46
	Rehobeth Church Rd	Shannon Hills Greenway	Vandalia Rd	MT	0.64	0.32
Infrastructure	Rehobeth Church Rd	Vandalia Rd	Creek Ridge Rd	MT	1.34	0.67
	Sandy Ridge Rd	W Market St	Norcross Rd	LT	1.63	0.81
	Spring Garden St	S Holden Rd	W Market St	MT	3.35	1.67
Safety	Stenley Rd	Hilltop Rd	Koger Blvd	LT	2.19	1.09
	Summit Ave	McKnight Mill Rd	Rankin Rd	ST	1.13	0.56
Policies and Programs	Summit Ave	Cone Blvd	McKnight Mill Rd	MT	0.57	0.28
	Summit Ave	Rankin Rd	Reedy Fork Parkway	LT	9.50	4.75
	Summit Ave	Wendover Ave	Phillips Ave	MT	1.98	0.99
	Summit Ave	Phillips Ave	16th St	MT	1.18	0.59
	Summit Ave	16th St	Cone Blvd	MT	0.63	0.32
Summary	Swing Rd	Burnt Poplar Rd	Road end	ST	1.46	0.73
	Thatcher Rd	W Market St	I-40	LT	1.48	0.74
	Vandalia Rd	S. Elm-Eugene	Pleasant Garden Rd	ST	1.97	0.98
	Vandalia Rd	S Holden Rd	S. Elm-Eugene	MT	6.11	3.05
	Vandalia Rd	Wiley Davis Rd	Holden Rd	MT	1.24	0.62
	Vandalia Road Extension	Pleasant Garden Rd	Alamance Church Rd	LT	4.98	2.49
	Vanstory St	Holden Rd	W Meadowview Rd	MT	2.27	1.13
	Vanstory St	W Meadowview Rd	High Point Rd	ST	1.26	0.63
	Washington St	S Spring St	Greene St	MT	0.64	0.32
	Washington St	Davie St	Church St	MT	0.26	0.13
	Washington St	RR Trestle	Pastor Anderson Way	ST	0.40	0.20
	Washington St	Pastor Anderson Way	Dudley St	MT	0.53	0.27
	Washington St	Dudley St	McConnell Rd	MT	0.75	0.37
	Westover Terrace	W Wendover Ave	Benjamin Parkway	ST	1.19	0.59
	Westover Terrace	Green Valley Rd	Battleground Ave	LT	0.58	0.29
Westover Terrace	Wendover Ave	Green Valley Rd	MT	0.56	0.28	
Wiley Davis Rd	Groometown Rd	Clair Place	LT	2.14	1.07	
Yanceyville St	Lindsay St	Bessemer Ave	ST	1.21	0.60	
Yanceyville St	Cone Blvd	Rankin Rd	MT	1.71	0.86	
<b>BICYCLE LANES</b>			<b>TOTALS</b>	<b>267.64</b>	<b>134.36</b>	
<b>PROTECTED BICYCLE LANES***</b>						
Church St	E Washington St	Summit Ave	ST	0.93	0.46	
Grandover Parkway	Guilford College Rd	Groometown Rd	ST	5.29	2.65	
Holden Rd	Vanstory St	High Point Rd	MT	0.51	0.25	
Holden Rd	Vandalia Rd	Vanstory St	ST	2.26	1.13	
Murrow Blvd	Lee St	Lindsay St	ST	1.61	0.80	
Randleman Rd	W Meadowview Rd	W Florida St	MT	1.76	0.88	

\* This is the primary measurement for bicycle facilities in the Greensboro MPO.

\*\* Centerline miles are shown here for comparison purposes with other plans.

\*\*\* Further design will determine if facility type is buffered bike lane or protected bike lane.

**Table 2.10**

**Bicycle Facility Recommendations By Facility Type and Phasing**

Name	From	To	Phasing	Bike-lane Miles*	CenterLine Miles**	
<b>PROTECTED BICYCLE LANES***</b>						
Randleman Rd	Meadowview Rd	Creek Ridge Rd	MT	1.27	0.64	
Willoughby Blvd	Wynnewood Dr	Marston Rd	ST	2.53	1.26	
Yanceyville St	Bessemer Ave	Cone Blvd	MT	4.11	2.05	
<b>PROTECTED BICYCLE LANES</b>				<b>TOTALS</b>	<b>20.27</b>	<b>10.13</b>
<b>SHARROWS</b>						
Aycock St	Florida St	Gate City Blvd	ST	1.34	0.67	
Bellemeade St	Cedar St	Lindsay Ave	ST	1.24	0.62	
Chapman St	W Lee St	Spring Garden St	ST	0.41	0.21	
Church St	N Park Dr	Wendover Ave	ST	0.83	0.42	
Cornwallis Dr	N Elm St	N Church St	ST	0.77	0.38	
Creek Ridge Rd	Rehobeth Church Rd	Randleman Rd	MT	2.12	1.06	
Elm St	Lee St	Summit Ave	ST	1.42	0.71	
Elm St	Summit Ave	Fisher Ave	ST	0.68	0.34	
Elm St	Lee St	S Eugene St	ST	1.59	0.80	
Elm-Eugene St	Meadowview Rd	Vandalia Rd	MT	3.40	1.70	
Elm-Eugene St	Elmsley Dr	Vandalia Rd	MT	1.44	0.72	
Franklin Blvd	McConnell Rd	Burlington Rd	MT	2.86	1.43	
Friendly Ave	New Garden Rd	Muir's Chapel Rd	MT	0.95	0.48	
Glendale Dr	Donegal Dr	Glendale Ct	MT	1.05	0.53	
Golden Gate Dr	Church St	E Cornwallis Dr	ST	0.80	0.40	
Greene St	McGee St	Washington St	ST	0.24	0.12	
Hobbs Rd	New Garden Rd	Chesapeake Dr	MT	1.89	0.95	
Holden Rd	Glendale Dr	Pinecroft Rd	MT	0.99	0.49	
Holden Rd	Wendover Ave	Spring Garden St	MT	0.52	0.26	
Martin Luther King Jr. Dr	Lee St	Davie St	ST	0.44	0.22	
Meadowview Rd	End of Bike Lanes	Elm-Eugene St	MT	0.20	0.10	
Mendenhall St	W Market St	Spring Garden St	ST	0.92	0.46	
Mendenhall St	Market St	Hill St	MT	0.95	0.47	
New Garden Rd	Battleground Ave	Old Battleground Rd	MT	1.03	0.51	
Old Battleground Ave	Westridge Rd	Lake Brandt Rd	ST	2.61	1.30	
Pisgah Church Rd	Elm St	Church St	MT	0.99	0.50	
Randleman Rd	Vandalia Rd	Glendale Dr	MT	0.97	0.48	
Spring Garden St	Holden Rd	Collier Rd	MT	0.30	0.15	
Spring Garden St	Blandwood Ave	Walker Ave	ST	0.34	0.17	
Sullivan St	Lindsay St	Benbow Rd	MT	0.50	0.25	
Vandalia Rd	Groometown Rd	Wiley Davis Rd	LT	1.32	0.66	
Walker Ave	S Holden Rd	S Aycock St	ST	3.66	1.83	
Washington St	Greene St	Davie St	ST	0.27	0.14	
Washington St	Church St	RR Trestle	ST	0.21	0.11	

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**Table 2.10**

**Bicycle Facility Recommendations By Facility Type and Phasing**



Name	From	To	Phasing	Bike-lane Miles*	CenterLine Miles**
<b>SHARROWS</b>					
Westridge Rd	Whitehurst Rd	Old Battleground Rd	ST	<b>0.66</b>	0.33
Westridge Rd	Gramercy Rd	Smoketree Dr	MT	<b>0.51</b>	0.25
Willoughby Blvd	End of bike lane	Elm St	MT	<b>0.68</b>	0.34
<b>SHARROWS</b>			<b>TOTALS</b>	<b>41.10</b>	<b>20.55</b>
<b>FURTHER STUDY PENDING</b>					
Davie St	McGee St	Washington St	MT	<b>0.28</b>	0.14
Davie St	Washington St	E Friendly Ave	MT	<b>0.44</b>	0.22
Davie St	E Friendly Ave	Summit Ave	MT	<b>0.26</b>	0.13
Greene St	Washington St	Market St	MT	<b>0.31</b>	0.16
Greene St	Market St	Bellemeade St	MT	<b>0.37</b>	0.19
Greene St	Bellemeade St	Smith St	MT	<b>0.45</b>	0.22
Greene St	Smith St	Florence St	MT	<b>0.44</b>	0.22
Summit Ave	Murrow Blvd	Wendover Ave	MT	<b>1.68</b>	0.84
Summit Ave	E Lindsay St	Murrow Blvd	MT	<b>0.58</b>	0.29
<b>FURTHER STUDY PENDING</b>			<b>TOTALS</b>	<b>4.82</b>	<b>2.41</b>

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Table 2.10

Bicycle Facility Recommendations By Facility Type and Phasing





## Safety

### ENGINEERING


- This plan recommends the MPO and City continue to improve the bicycle network, fill facility gaps, and provide connectivity to major destinations for bicyclists.    
- The City of Greensboro is making efforts to add 113.9 miles of bike lanes (bike-lane miles) by the end of 2020 through resurfacing projects, road widening, and reconstruction projects. This is expected to include some scratch and remark projects. 
- Protected bike lanes and cycle tracks would be considered to be built to create safer and more comfortable environment for bicyclists.   
- The MPO is developing a non-motorized counting program to obtain counting data. These data, along with the number of crashes, are an important input to calculate the crash rate at particular locations. Crash rate information is helpful to identify dangerous locations for bicyclists as well as high use locations to develop appropriate strategies to improve safety for bicyclists.   


### EDUCATION

- The City of Greensboro should seek to restart the GSO Shares the Road bicycle safety education campaign, or a similar educational campaign tied with Watch For Me NC. This can be paired with Bike Month activities to reach a wider audience. 
- The City of Greensboro has been a partner of Watch For Me NC since 2014. The Watch For Me NC campaign has been successful in putting the City and the MPO on the right track to improving the visibility of bicycle and pedestrian education efforts and educating the public, staff, and law enforcement on how to improve bicycle safety. 











### ENFORCEMENT

- *Watch For Me NC* provides excellent opportunities for coordination between the City, County, and Universities on enforcing bicycle safety laws. In order to address issues with bicycle and pedestrian safety enforcement, the Watch For Me NC campaign includes




training for law enforcement on pedestrian and bicycle laws and how police officers should enforce the laws. The City of Greensboro and partner agencies should continue to participate in Watch For Me NC to have access to this important training opportunity. 

- Regular training is necessary to reach all members of law enforcement and train new members as they arrive. Training can be accomplished through Watch For Me NC campaign, but internal training is important as well to provide consistent and comprehensive education as frequently as possible. 

### ENCOURAGEMENT

- It is recommended that the MPO cooperate with other organizations in events that promote walking and bicycling safely such as the Downtown Greensboro City Market, Safe Kids Guilford County and Open Streets.    
- The plan recommends the MPO continue to cooperate with advocacy groups such as Action Greensboro, Bicycling in Greensboro, Greensboro Fat Tire Society, and the Greensboro Velo Club in celebrating Bike Month every year.    
- The plan highly recommends providing diverse activities and programs targeted to different groups, especially children and college students.  

### EVALUATION

- The Greensboro MPO should continue to build a strong data collection program to better develop effective evaluation tools and measures to support decisions for increasing safety conditions for bicyclists.  
- The MPO should continue to develop non-motorized transportation counting and monitoring programs and to maintain and update a geodatabase of existing and planned infrastructure. In addition, conducting research on applying, using, and developing new tools for analyzing crashes, collecting count data, and using socioeconomic data is critical to achieve the desired goal to improve safety for bicyclists. 

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- The bicycle safety analysis will continue to be updated periodically when new data are released to keep track of crash trends and the effectiveness of safety projects, programs, and campaigns. 🚶




## Policies and Programs

### COMPLETE STREETS POLICIES












- This plan recommends the City and MPO adopt a Complete Streets policy to codify and build on current practices and procedures as soon as is feasible after this plan is completed. 🌞
- This plan encourages NCDOT to align all of their policies with their Complete Streets Policy. This includes installing needed pedestrian and bicycle facilities where warranted in its projects — not as a function of local government financial participation. 🌞
- MPO staff should continue to offer implementation guidance for bicycle facilities that conforms to current best practices and guidelines. 🌞 🚶
- MPO Towns should consider adopting a Complete Streets Policy in order to set the stage for future development within their jurisdictions so that all road users are accommodated. 🌞

### POLICIES RELATING TO LAND USE AND DEVELOPMENT DESIGN











- It is recommended that the MPO create guidelines that outline specifics for evaluating resurfacing projects and new roadway projects as they relate to bicycle facilities. 🌞 🚶
- The MPO should host Traffic Skills 101 or bike commuter courses for engineers and planners to better understand cyclists' needs. 🚶
- Ordinances and street design standards should be reviewed to determine how and where they could be modified to lead to more bicycle friendly outcomes. 🌞 🚶 🏥 💰
- MPO jurisdictions should consider land use policies that minimize large lot/low density development to better facilitate bicycling, pedestrian and transit trips. MPO jurisdictions should also consider other land use policy approaches to allow

for flexible land uses and to provide a comfortable and convenient built environment for cyclists such as a form-based code.   










## PROGRAMS TO ENCOURAGE BICYCLING AND PROMOTE CYCLING SAFETY

- Continue to expand safety education campaigns with the City, local universities, and other groups after the conclusion of the Watch For Me NC campaign. 
- Increase participation in Guilford County schools with SRTS to expand their safety education and bicycling and walking promotion.  
- Expand City safety education and bicycling and walking promotion through Safety Town, other GPD efforts, and Greensboro Parks & Recreation after school programs. 
- Continue to work with community and partners to grow and promote events during National Bike Month and throughout the year.  
- Continue Greensboro's commitment to advancing its recognition as a Bicycle Friendly Community, support UNC-Greensboro's Bike Friendly University status, and promote the Bike Friendly Business program throughout the Greensboro MPO In early 2016, develop a plan to get Greensboro to the Silver BFC designation by the next award renewal period in 2017.  
- Offer more Traffic Skills 101 or bike commuters courses for the public. Regularly host a course for law enforcement officers so they may better understand cyclists' needs. 
- Continue including a police officer as an active member of the Bicycle Advisory Committee. Appoint a law-enforcement point person to interact with cyclists. 
- Host additional League Cycling Instructor (LCI) seminars to increase the number of certified LCIs in the community, and hold more smart cycling classes taught by LCIs. 
- Consider offering more 'Open Streets' or 'Ciclovía' events, closing off major corridors to auto traffic and offering the space to cyclists,

pedestrians and group exercise events.   

- Set up and promote a bicycle-themed community celebration or social ride each time a new bicycle related project is completed. 
- Encourage local public agencies, businesses and organizations to promote cycling to the workplace and to seek recognition through the free Bicycle Friendly Business Program.   
- Encourage more local institutions of higher education to promote cycling and seek recognition through the Bicycle Friendly University Program.   
- It is recommended that the City of Greensboro continue to engage with local advocates and interested parties on Bike Share. The implementation of Bike Share will likely require governmental support and interest in order for it to be successful.   

## LOCAL GOVERNMENT POLICIES AND EFFORTS RELATING TO THE CYCLING ENVIRONMENT

- Codify current practices, which are themselves a de facto Complete Streets Policy, through formal adoption of a Complete Streets policy by the MPO, City, and, as appropriate, the Towns and County. 
- Establish a standing BPAC for Greensboro MPO or City of Greensboro. The BPAC would start meeting in early 2016 after responsibilities and administration are determined. 
- It is recommended that the City of Greensboro dedicate the Bicycle & Pedestrian Coordinator position 100% to bicycle and pedestrian issues. Creating two dedicated positions, a Bicycle Coordinator and a Pedestrian Coordinator could be even more advantageous.  
- It is recommended that the Greensboro MPO work with local bicycling advocates and interest groups to update the bicycle map within one to two years of the completion of this plan. The map should include an online application suitable for use on mobile devices The map should outline the existing on- and off-road bicycle network; locations of parks, retail centers, hospitals, transit centers, and other destinations of interest; low-traffic streets; public restrooms, water fountains, bike repair stations and shops; and hazardous conditions to watch out for.     



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