

Bicycle Master Plan Project Prioritization and Status

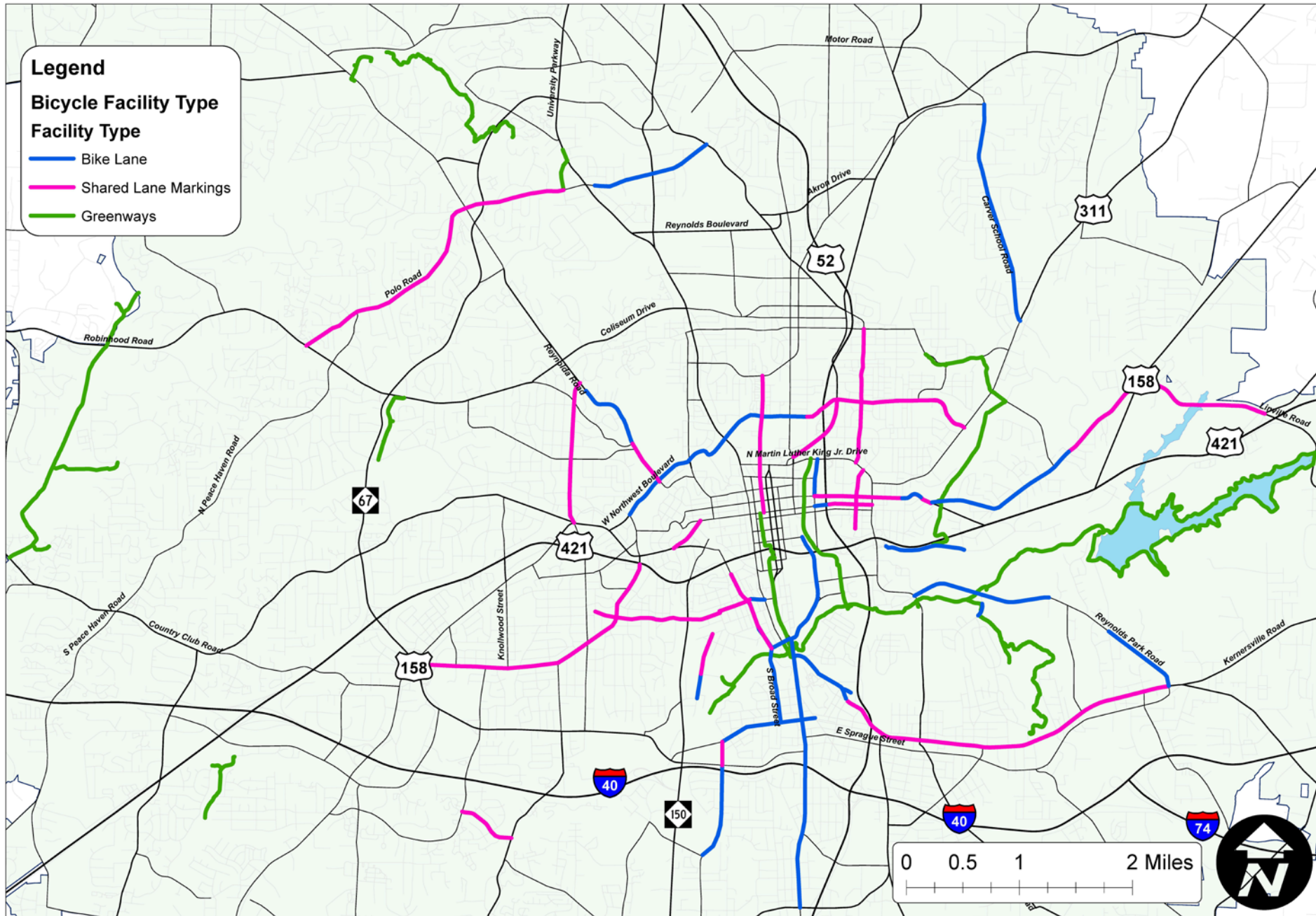
City of Winston-Salem Public Works Committee

February 15th, 2022

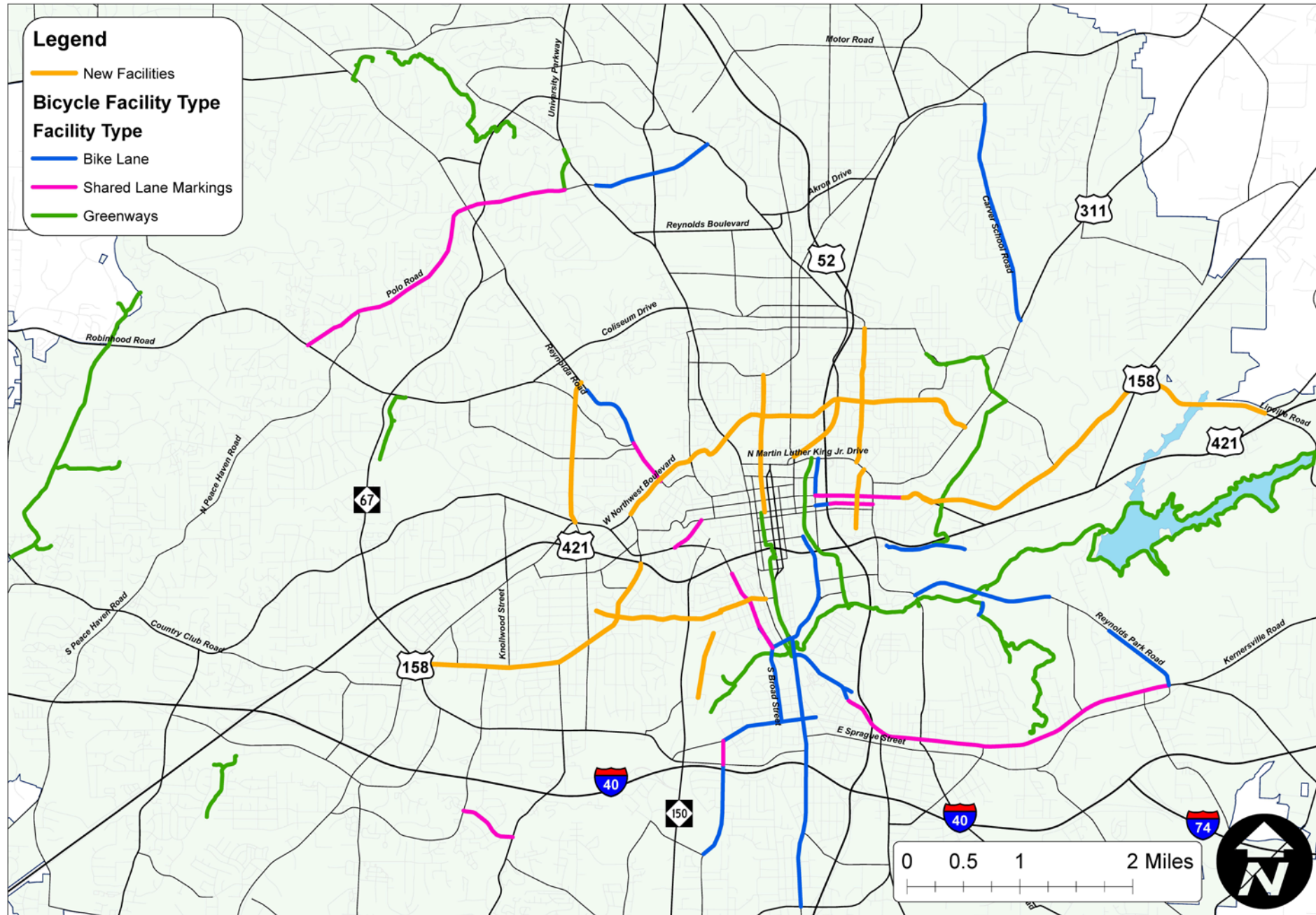
Current Status – Bronze Level BFC



CURRENT BICYCLE FACILITIES | CITY OF WINSTON-SALEM



CURRENT BICYCLE FACILITIES | CITY OF WINSTON-SALEM



Bicycle/Pedestrian/Active Mobility Advisory Committee

- Work Program Element
- Use Criteria in Bicycle Master Plan to Further Refine Plan Recommendations
- Criteria
 - Social Equity (40%)
 - Latent Demand (33%)
 - Bicyclist Stress Level (27%)

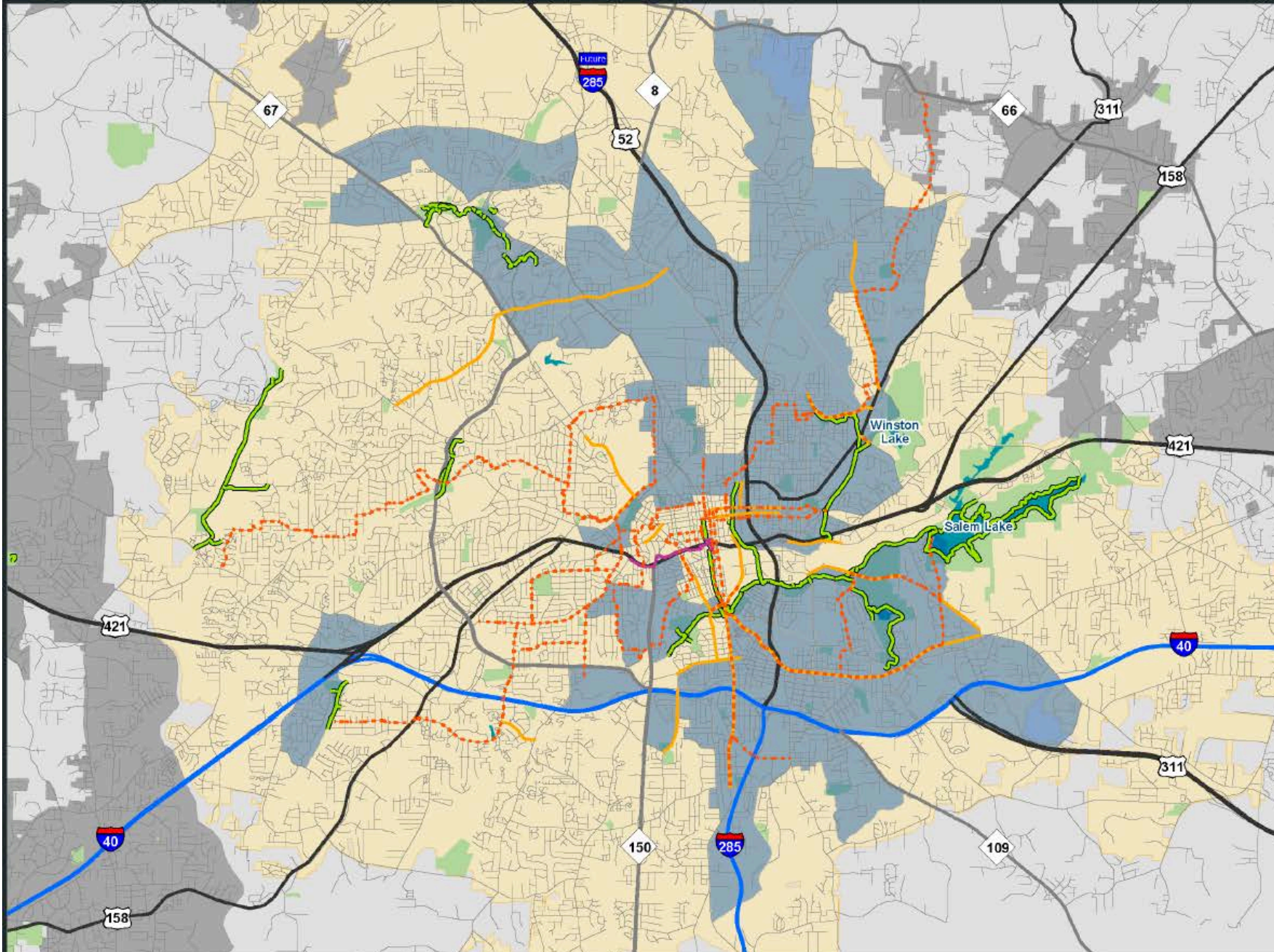
WINSTON-SALEM BICYCLE MASTER PLAN



Figure 3-3:
Low Income Populations

Legend

- High Poverty Block Group
- Business 40 Multi-Use Path
- Existing Bicycle Facilities
- Signed Bike Route
- Existing Greenways
- Interstate
- US Route
- NC Route
- Streets
- Water Bodies
- Park Property
- City of Winston-Salem
- Other Municipalities



Low Income
Population 5%
Higher than
Overall City Rate



This map is for reference only.
Sources: NCDOT, NHD, NCOneMap, ESRI
and AECOM.



July 2019



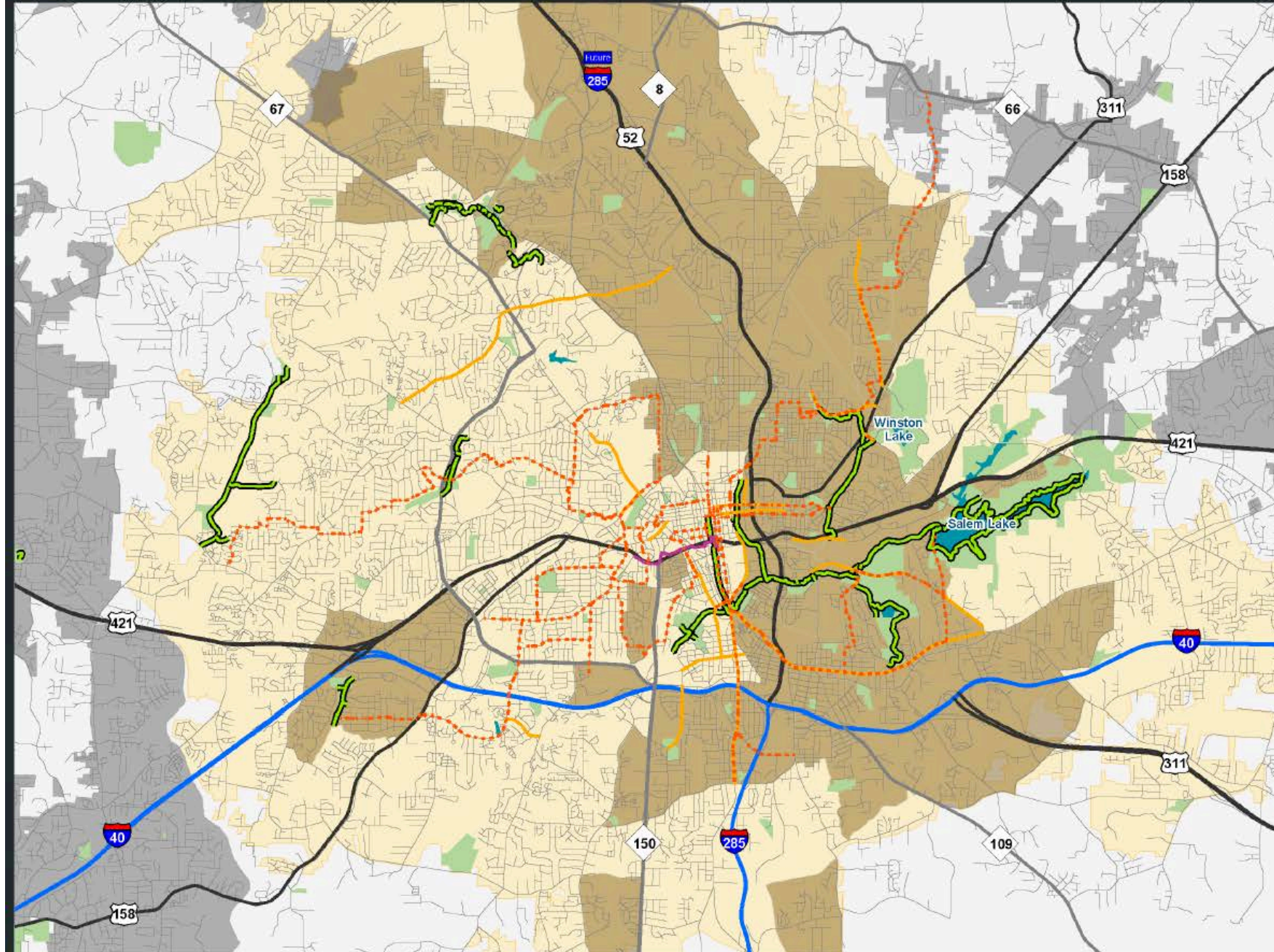
WINSTON-SALEM BICYCLE MASTER PLAN



Figure 3-4:
Minority Populations

Legend

- High Minority Block Group
- Business 40 Multi-Use Path
- Existing Bicycle Facilities
- Signed Bike Route
- Existing Greenways
- Interstate
- US Route
- NC Route
- Streets
- Water Bodies
- Park Property
- City of Winston-Salem
- Other Municipalities



Minority
Population 10%
Higher than
Overall City Rate



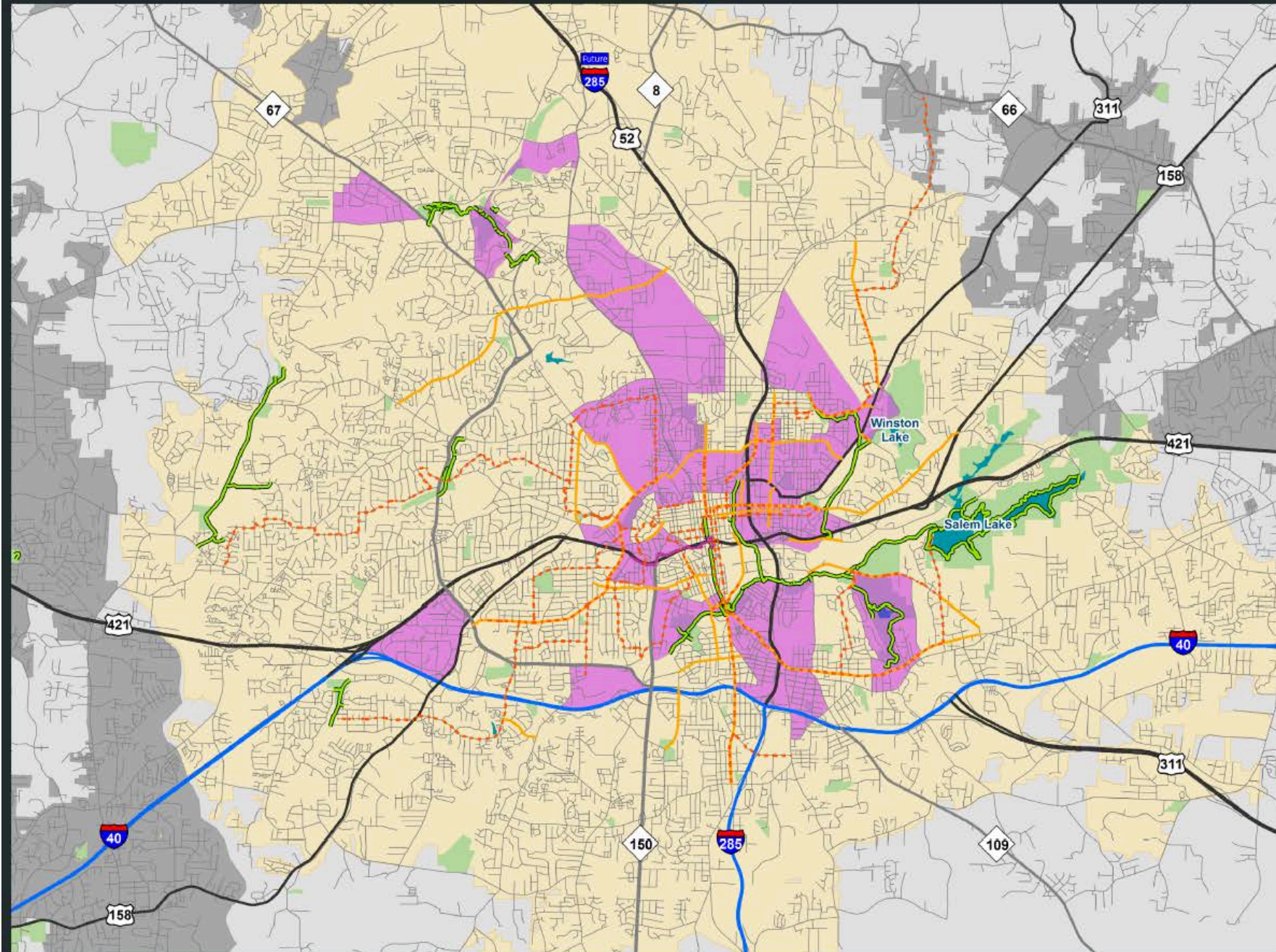
WINSTON-SALEM BICYCLE MASTER PLAN



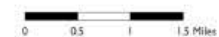
Figure 3-5:
Zero Car Households

Legend

- High Vehicle-less Households
- Business 40 Multi-Use Path
- Existing Bicycle Facilities
- Signed Bike Route
- Existing Greenways
- Interstate
- US Route
- NC Route
- Streets
- Water Bodies
- Park Property
- City of Winston Salem
- Other Municipalities



Zero-Vehicle Household Rate 10% Higher than Overall City Rate



WINSTON-SALEM BICYCLE MASTER PLAN

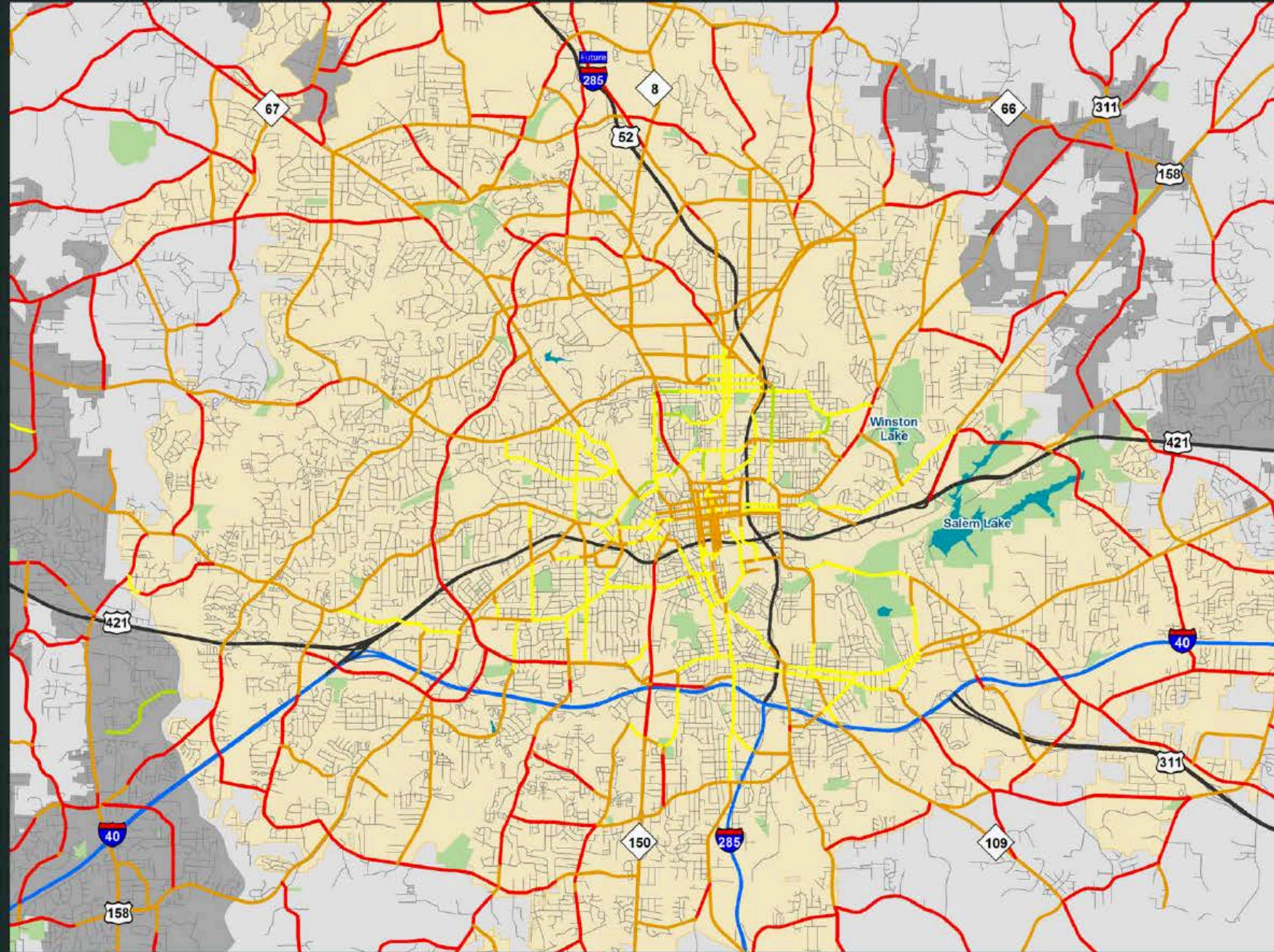


Figure 3-8:
Stress Level Map

Legend

Stress Level

- Very High Stress
- High Stress
- Moderate Stress
- Low Stress
- Interstate
- US Route
- NC Route
- Streets
- Water Bodies
- Park Property
- City of Winston-Salem
- Other Municipalities



Stress Ratings

Based on:

- Traffic Volume
- Traffic Speeds
- Lane Widths

0 0.5 1 1.5 Miles



This map is for reference only.
Sources: NCDOT, NHD, NCOneMap, ESRI
and AECOM.



Winston-Salem

May 2019

AECOM

WINSTON-SALEM BICYCLE MASTER PLAN



Figure 4-1:
Latent Demand Model

Legend

Predicted Demand

High

Low

Interstate

US Route

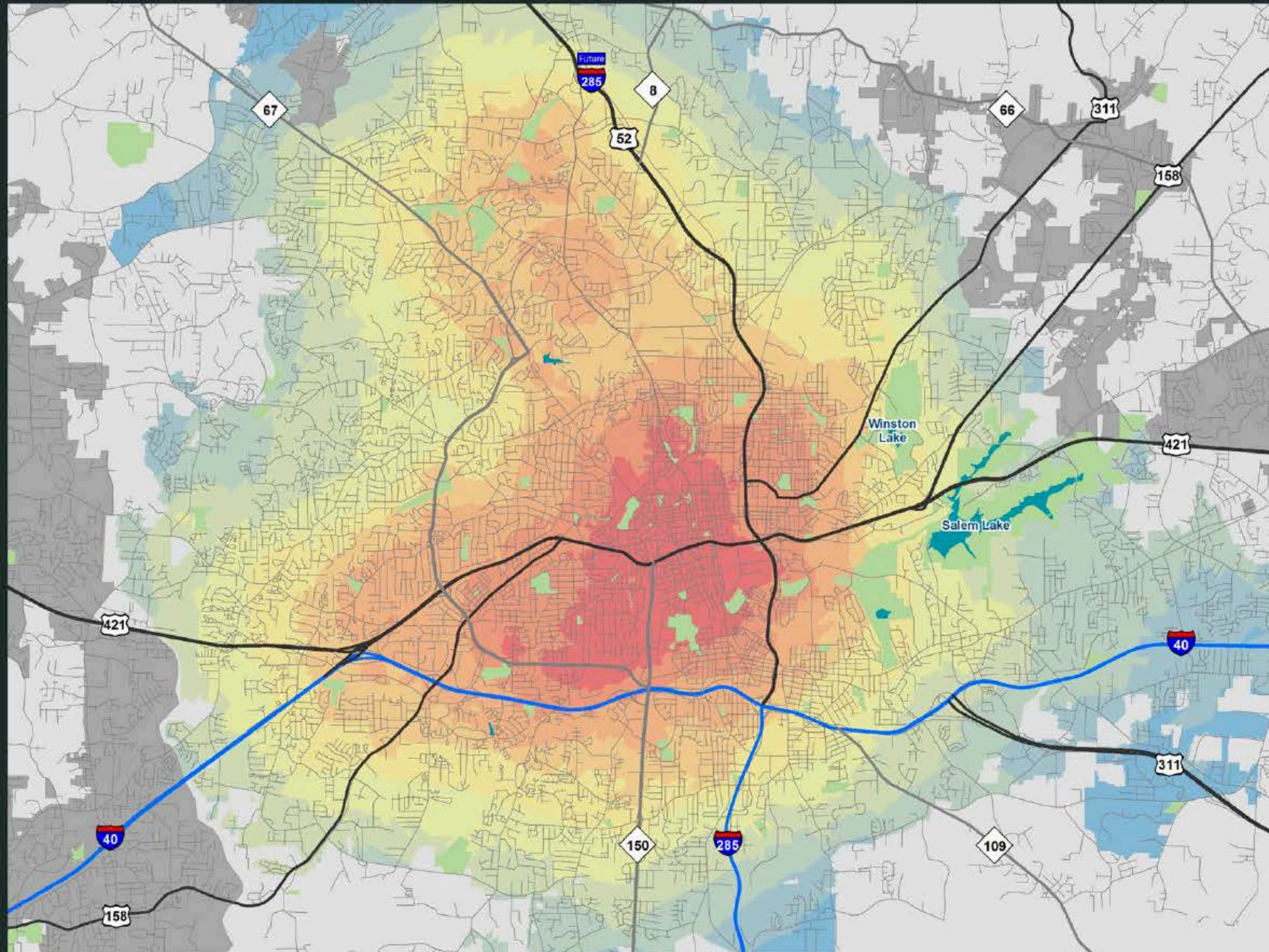
NC Route

Streets

Water Bodies

Park Property

Other Municipalities



Latent Demand
Based on:

- Schools
- Parks
- Greenways
- Transit Stops
- Population Density
- Short Distance Commuter Density
- Zero-Vehicle Household Density
- Job Density
- Retail Density



This map is for reference only.
Sources: NC DOT, NHD, NC OneMap, ESRI
and AECOM.



May 2019



AECOM

Project Corridors – Tier 1

Project	Total Score (37)	Equity Score (15)	Latent Demand Score (12)	Stress Level Score (10)
Forsyth Tech Connector	32.9	15	12	5.9
CrossTown Connector	31.6	15	11.3	5.3
Long Branch Trail	31.4	15	12	4.4
Forsyth Medical Connector	29.8	13	9.8	7
Waughtown Route	29.5	15	10.1	4.4
Bethabara Brightway	29.2	13.7	8.7	6.8

Project Corridors – Tier 2

Project	Total Score (37)	Equity Score (15)	Latent Demand Score (12)	Stress Level Score (10)
Lewisville Connector	28.5	12.3	8.3	7.9
Northwest Connector	28.1	15	9.1	3.9
Parkland South Connector	27.9	10.5	8.5	8.9
Walkertown/Quarry Connector	26.7	11.7	6.7	8.3
Reynolda Link	25.6	8.9	10.1	6.6

Project Corridors – Tier 3

Project	Total Score (37)	Equity Score (15)	Latent Demand Score (12)	Stress Level Score (10)
Downtown Connector	22.0	0	12	10
Northside Trace	20.6	5.8	6.6	8.2
Eastern Trace	17.9	4.9	4.3	8.7
Southern Fiddle	15.0	4.3	4.7	6
Robinhood Road	11.6	0	4.6	7
Westside Bike Boulevard	9.8	0	6.2	3.6

Forsyth Tech Connector



Legend

- Forsyth Tech Connector
- Existing Bicycle Facilities
- Existing Greenways
- Parks

Key Destinations

- School
- Park/Recreation/Trail
- Shopping
- Church

Key Destinations:

1. Stratford Road Park
2. Runnymede Park
3. Redeemer School
4. Whole Foods Market
5. Ardmore Baptist Church
6. Ardmore Park
7. Early College of Forsyth County
8. Middle College of Forsyth County
9. Career Center
10. Salem Creek Greenway

5.3.15 Forsyth Tech Connector

Route Description:

The Forsyth Tech Connector connects the campus of Forsyth Tech north through the Ardmore neighborhood to the Five Points area of Winston-Salem using Miller Street. The route may also be extended south through the Forsyth Tech campus to connect to the future Salem Creek Greenway. There are several commercial areas along the proposed route, and a short connection to Wake Forest Baptist Medical Center is possible. The route provides a bicycle connection from Forsyth Tech to a job center in the vicinity of Five Points, as well as additional community facilities in an area with a high number of households with low vehicle ownership rates and short commutes. This project also connects existing bicycle facilities on North Stratford Road and South Hawthorne Road, as well as provides several transit connections (Table 5-16).

Total Length: 2.7 miles

Bus Route Connections:

- Route 84
- Route 85
- Route 95
- Route 100
- Route 107

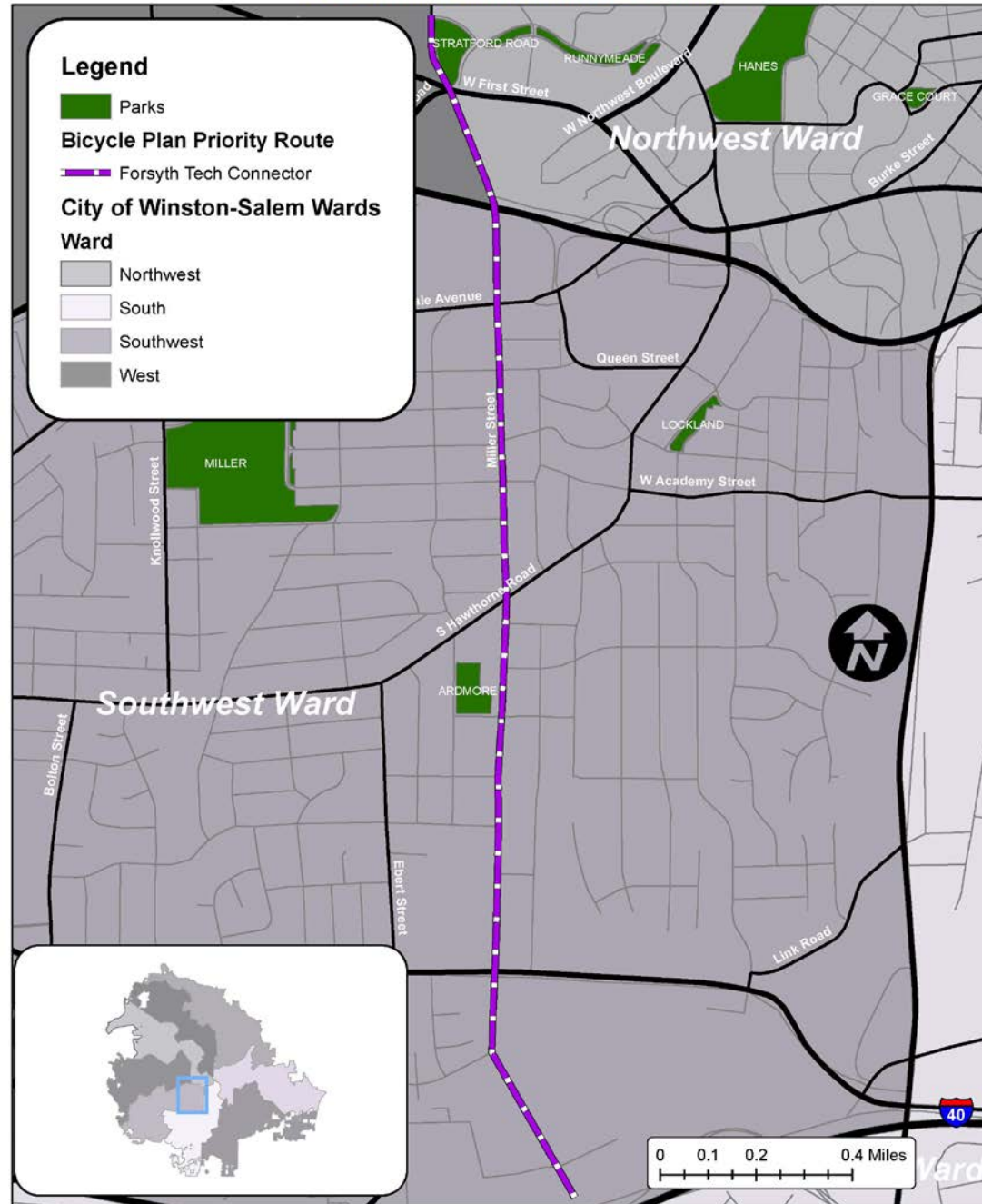
Forsyth Tech Connector

Map Label	Segment Location	Completed	Length	Stress Level	Social Equity Connections
FTC-1	Miller Street from the Forsyth Tech campus north to the Five Points Intersection	No	2.5 miles	Moderate-High	Yes
FTC-2	Stratford Road from Five Points Intersection north to Runnymede Road	Yes	.2 miles	Moderate	No

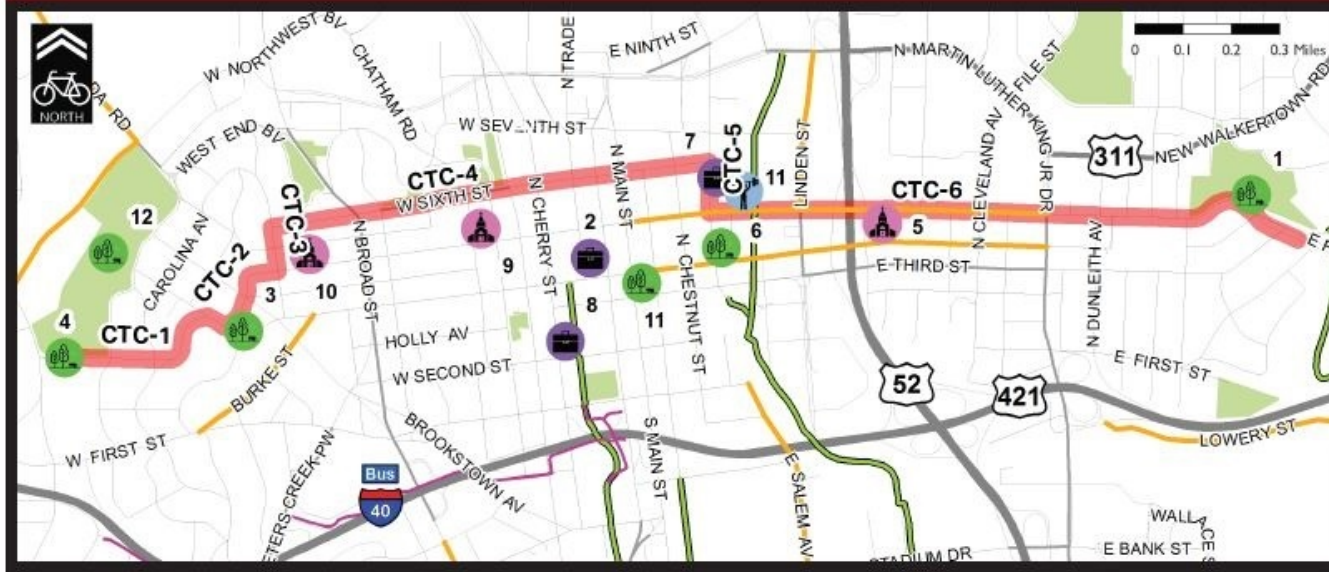
Planning Level Construction Cost Estimate: \$400,000

Forsyth Tech Connector

City of Winston-Salem Tier 1 Project Corridor



Crosstown Connector



Legend

-  Crosstown Connector
-  Existing Bicycle Facilities
-  Existing Greenways
-  Business 40 Multi-Use Path
-  Parks

Key Destinations

-  Work/Business
-  Gym
-  Park/Recreation/Trail
-  Church

5.3.6 CrossTown Connector

Route Description:

The CrossTown Connector begins on Glade Street at N Hawthorne Road before turning on Clover Street briefly to access W Fifth Street before heading north on Summit Street NW to Sixth Street. The route passes through the entirety of downtown on Sixth Street to Vine Street, where it ends at the Innovation Quarter. The CrossTown Connector links to the following routes: Long Branch, Walkertown Quarry Connector, Waughtown, and Reynolda Link, as well as the Downtown Connector. The route provides additional connectivity for bicyclists through downtown as well as provides additional crosstown connectivity to several existing and proposed greenways and bicycle facilities. The CrossTown Connector provides access to jobs, the Innovation Quarter, transit routes and neighborhoods (Table 5-7).

Total Length: 2.7miles

Key Destinations:

1. Skyland Park
2. Transportation Center Bay A-4
3. Grace Court Park
4. Peters Creek Trail (proposed)
5. United Metropolitan Missionary
6. Bailey Park
7. Innovation Quarter
8. Winston-Salem Post Office
9. First Baptist Church
10. Augsburg Lutheran Church
11. YMCA
12. Hanes Park

Bus Route Connections:

- Route 80
- Route 84
- Route 86
- Route 87
- Route 91
- Route 94

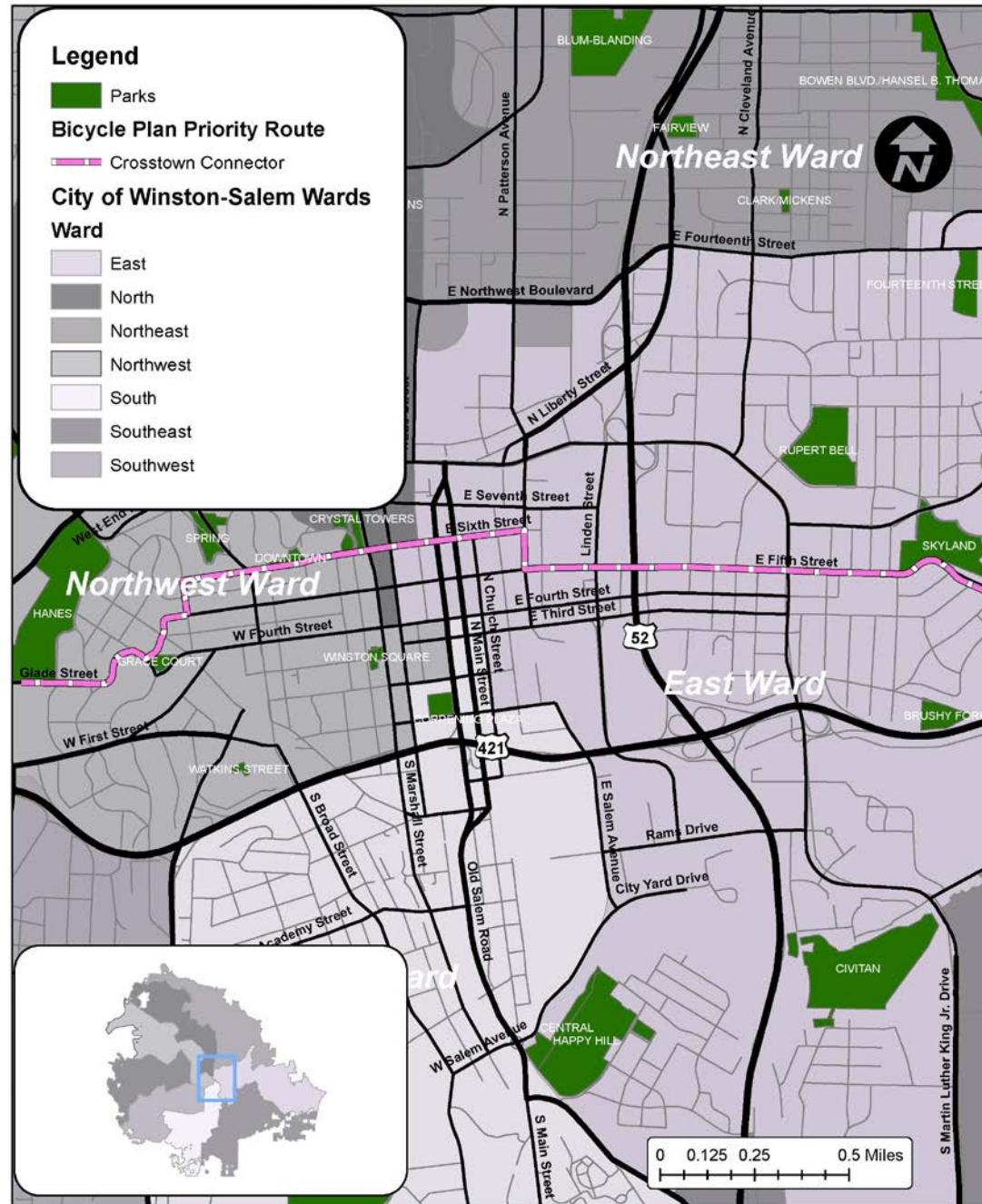
CrossTown Connector

Map Label	Segment Location	Completed	Length	Stress Level	Social Equity Connections
CTC-1	Glade Street/ Clover Street from N Hawthorne Road to W. Fifth St	No	.4 miles	Moderate	Yes
CTC-2	W Fifth Street from Clover Street to Summit Street NW	No	.9 miles	Moderate	Yes
CTC-3	Summit Street NW from Fifth Street to Sixth Street	No	.1 miles	Low	Yes
CTC-4	W Sixth Street from Summit Street NW to Patterson Street	No	1.0 miles	High/Moderate	Yes
CTC-5	Patterson Street from Sixth Street to Fifth Street	No	.1 miles	High	Yes
CTC-6	Fifth Street from Patterson Avenue to Brushy Fork Creek Trail Greenway	Yes	1.3 miles	High/Moderate	Yes

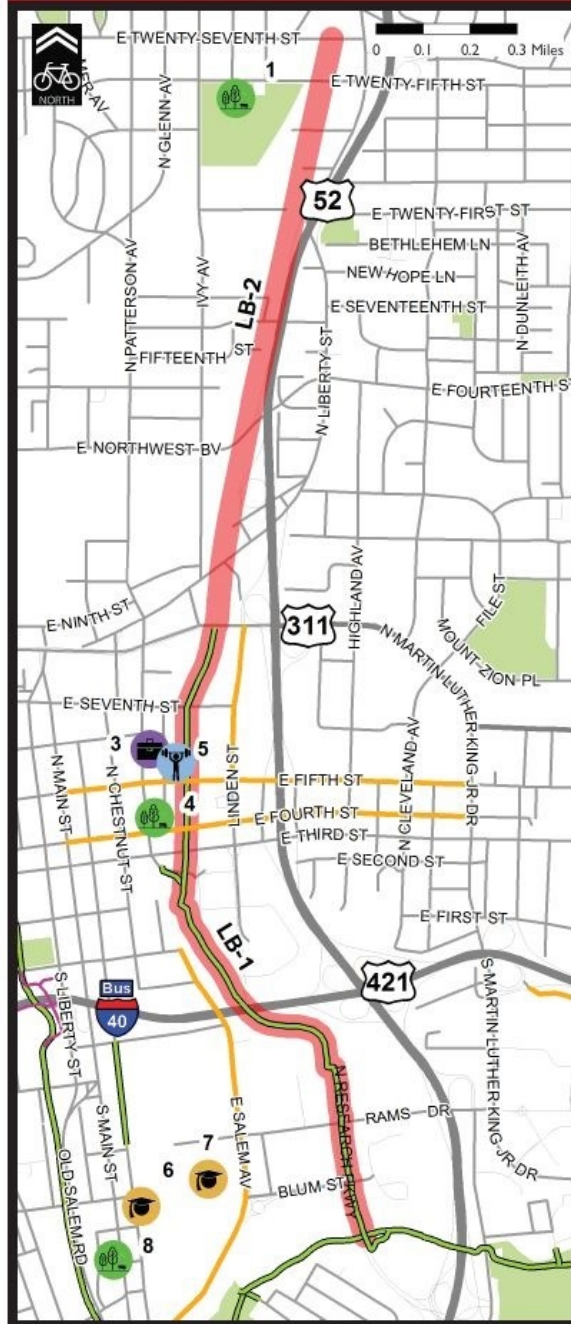
Planning Level Construction Cost Estimate : \$375,000

Crosstown Connector

City of Winston-Salem Tier 1 Project Corridor



Long Branch



Legend

- Long Branch
- Existing Bicycle Facilities
- Existing Greenways
- Business 40 Multi-Use Path
- Parks

Key Destinations

- School
- Work/Business
- Gym
- Park/Recreation/Trail

Key Destinations:

- Blum-Blanding Park
- Downtown Winston-Salem
- Innovation Quarter
- Bailey Park
- Innovation Quarter YMCA
- Salem College
- Salem Academy
- Old Salem

5.3.13 Long Branch

Route Description:

The Long Branch route will complete a greenway connection between Old Salem, Salem College, Salem Academy and downtown, and the Innovation Quarter. Bicyclists can access other parts of downtown via the CrossTown Connector. Connections can be also be made to Winston-Salem State University and Salem Lake via the Salem Creek Greenway and the Parkland South Connector. The Long Branch Route uses the existing Long Branch Trail which parallels Research Parkway and inactive railroad tracks from Salem Creek Greenway north to North Martin Luther King Jr Drive. It also follows the railroad tracks, providing a separate 15-foot mixed use path north from North Martin Luther King Jr Drive to 27th Street. The Long Branch route will provide connections to jobs and workforce training at the Innovation Quarter from neighborhoods to the north, many of which have high rates of poverty and households with low vehicle ownership rates (Table 5-14).

Total Length: 2.7 miles

Bus Route Connections:

- Route 87
- Route 100

Long Branch Trail

Map Label	Segment Location	Completed	Length	Stress Level	Social Equity Connections
LB-1	Salem Creek Trail to Martin Luther King, Junior Drive	Yes	1.5 miles	Low (alternative route on street is High/Moderate)	Yes
LB-2	Martin Luther King, Junior Drive to 25 th Street	No	1.2 miles	Low (alternative route on street is High/Moderate)	Yes

Planning Level Construction Cost Estimate : \$8,600,000

Long Branch Trail

City of Winston-Salem Tier 1 Project Corridor



Forsyth Medical



Legend

- Forsyth Medical
- Forsyth Medical Bicycle Boulevard
- Existing Bicycle Facilities
- Existing Greenways
- Business 40 Multi-Use Path
- Parks

Key Destinations

- School
- Medical/Hospital
- Park/Recreation/Trail
- Shopping
- Church

5.3.14 Forsyth Medical

Route Description:

The Forsyth Medical Route will connect neighborhoods in southwest Winston-Salem to a major shopping destination, the Forsyth Medical Center and downtown Winston-Salem using proposed greenways and surface streets. The route begins at South Stratford Road and heads north on the proposed Little Creek Trail. At Atwood Road, the route uses neighborhood streets to connect to the Westgate Shopping Center. It continues north on Westgate Center Drive and Ashleybrook Lane, before turning onto Healy Drive. From Healy Drive, the route connects to South Hawthorne Road and travel north and east, using Academy Street and eventually terminating at the Strollway. The Forsyth Medical Route connects to the following high priority projects: the Reynolda Link, the Forsyth Tech Connector, the Reynolda Link, and Waughtown.

The Forsyth Medical Route also includes an adjacent bicycle boulevard option to the north of South Hawthorn Road for less confident riders that may use low volume and low stress neighborhood streets such as Maplewood Avenue, Westover Street and Elizabeth Avenue.

The project will connect neighborhoods to the shopping centers around Hanes Mall Boulevard as well as to Hanes Mall. In addition there are a number of medical offices in the vicinity of Ashleybrook Lane and South Hawthorne Road that the Forsyth Medical Route will connect. Finally, the route connects many employment centers and households with short commute distances, particularly in the eastern end near downtown (Table 5-15).

Total Length: 8.8 miles

Key Destinations:

1. Hanes Mall Boulevard commercial area
2. Stratford Road commercial area
3. Forsyth Medical Center
4. Ardmore Park
5. Redeemer Presbyterian Church and School
6. Hawthorne Road commercial area
7. Lockland Park
8. Peters Creek Parkway commercial area
9. Granville Park
10. Piedmont International University
11. Salem Baptist Christian School
12. Old Salem
13. Salem College
14. Salem Academy

Bus Route Connections:

- Route 80
- Route 81
- Route 102
- Route 103
- Route 107

Forsyth Medical Connector

Map Label	Segment Location	Completed	Length	Stress Level	Social Equity Connections
FM-1	Proposed Little Creek Trail Greenway from South Stratford Road to Atwood Road	In Progress	2.2 miles	Low (alternative route on street is High/Moderate)	No
FM-2	Atwood Acres Neighborhood Roads (Atwood Road and Eddystone Lane	No	1.3 miles	Low	No
FM-3	Westgate Center Drive/ Ashleybrook Lane from Hanes Mall Boulevard to Healy Drive	No	1 mile	High	Yes
FM-4	Healy Drive from Ashleybrook Lane to South Hawthorne Road	No	.9 miles	Moderate	Yes
FM-5	South Hawthorne Road from Silas Creek Parkway to Academy Street	Yes	1.9 miles	Moderate/High	No
FM-6	Academy Street from South Hawthorne Rd to the Strollway	Yes	1.5 miles	Moderate	Yes
FMBB-1	Neighborhood Streets (Maplewood Ave, Belview St, Westover Dr, Melrose St, Elizabeth Ave, and Duke St)	No	1.5 miles	Low	No

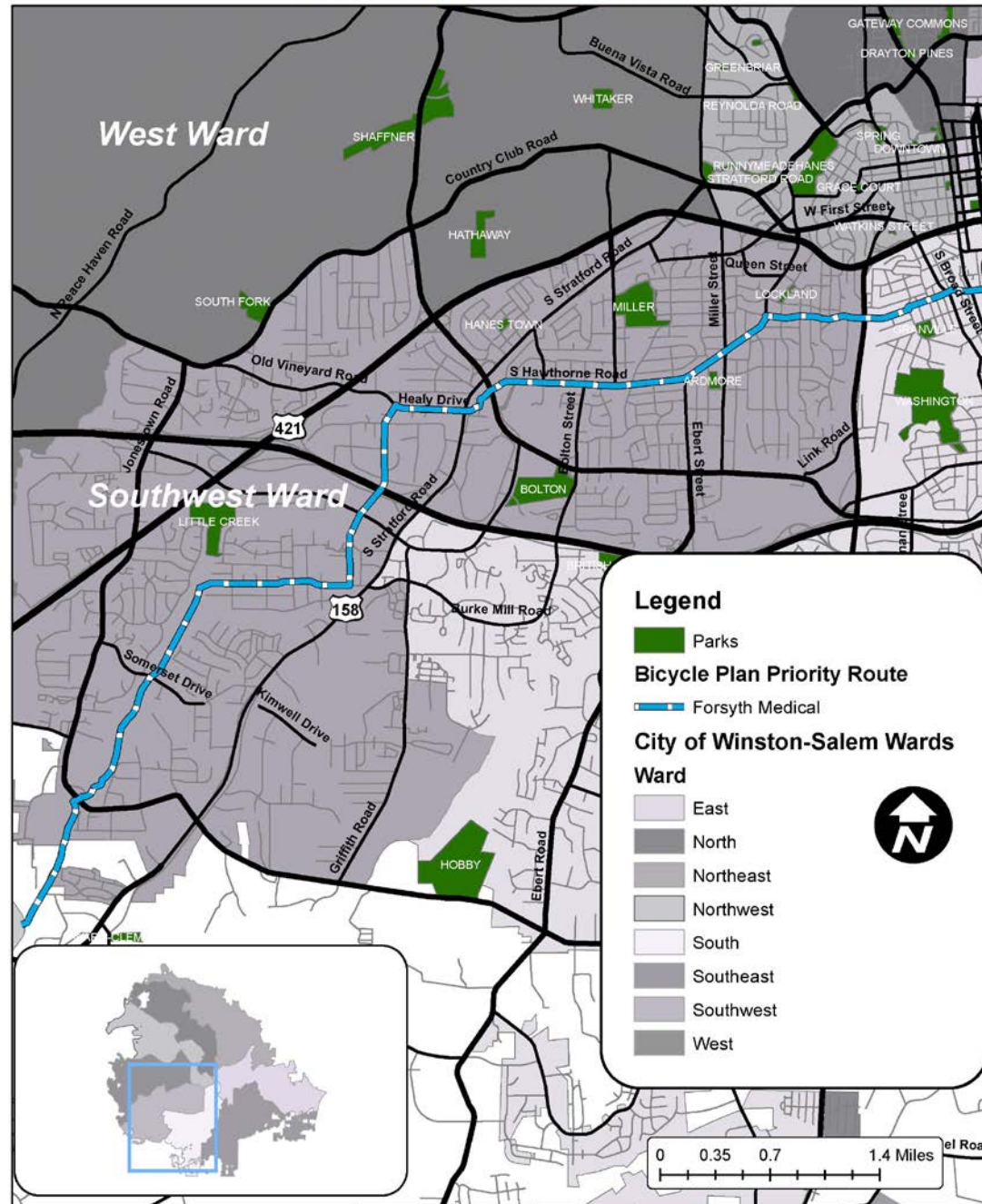
Planning Level Construction Cost Estimate :

Trail: \$1,800,000

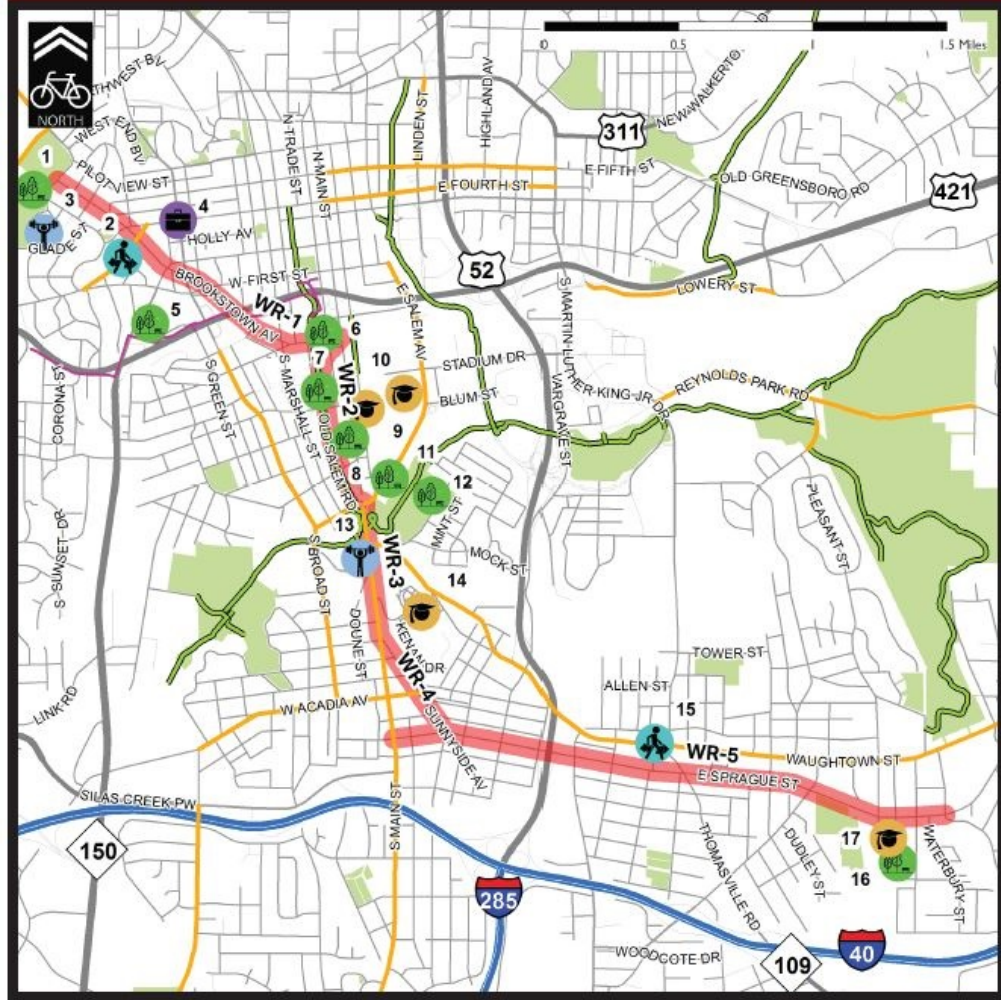
On-Street: \$350,000

Forsyth Medical Connector

City of Winston-Salem Tier 1 Project Corridor



Waughtown Route



Legend

- Waughtown Route
- Existing Bicycle Facilities
- Existing Greenways
- Parks

Key Destinations

- School
- Work/Business
- Gym
- Park/Recreation/Trail
- Shopping

5.3.16 Waughtown Route

Route Description:

The Waughtown Route provides crosstown access to a number of destinations using Brookstown Avenue, The Strollway, South Main Street and East Sprague Street. The Waughtown Route connects the West End neighborhood and western downtown to Old Salem, the School of the Arts, and the Waughtown neighborhood. Connections can be made to other parts of downtown via the CrossTown Connector. The CrossTown Connector or the Reynolda Link also connect to the Hawthorne Route and Wake Forest Baptist Medical Center. Winston-Salem State University, Salem Lake, and Washington Park can be accessed via the Parkland South Connector. The Waughtown Route will be next to, and pass through, many low-income and minority neighborhoods, and will provide additional access to jobs and commercial areas. It will also provide connectivity to, and between, several existing and proposed greenways, including the Salem Creek Greenway (Table 5-17).

Total Length: 5.1 miles

Bus Route Connections:

- Route 83
- Route 86
- Route 104
- Route 107

Key Destinations:

1. Hanes Park
2. West End / Burke Street commercial area
3. William G. White Jr. Family YMCA
4. Downtown Winston-Salem
5. BB&T Ballpark
6. Kaleideum Downtown Children's Museum
7. The Strollway
8. Old Salem
9. Salem College
10. Salem Academy
11. Central Park
12. Happy Hill Park
13. YWCA
14. UNC School of the Arts
15. Waughtown Street commercial area
16. Sprague Street Park
17. Hanes Magnet School
18. Winston-Salem Career Center
19. Salem Creek Trail (proposed)
20. Hobby Park

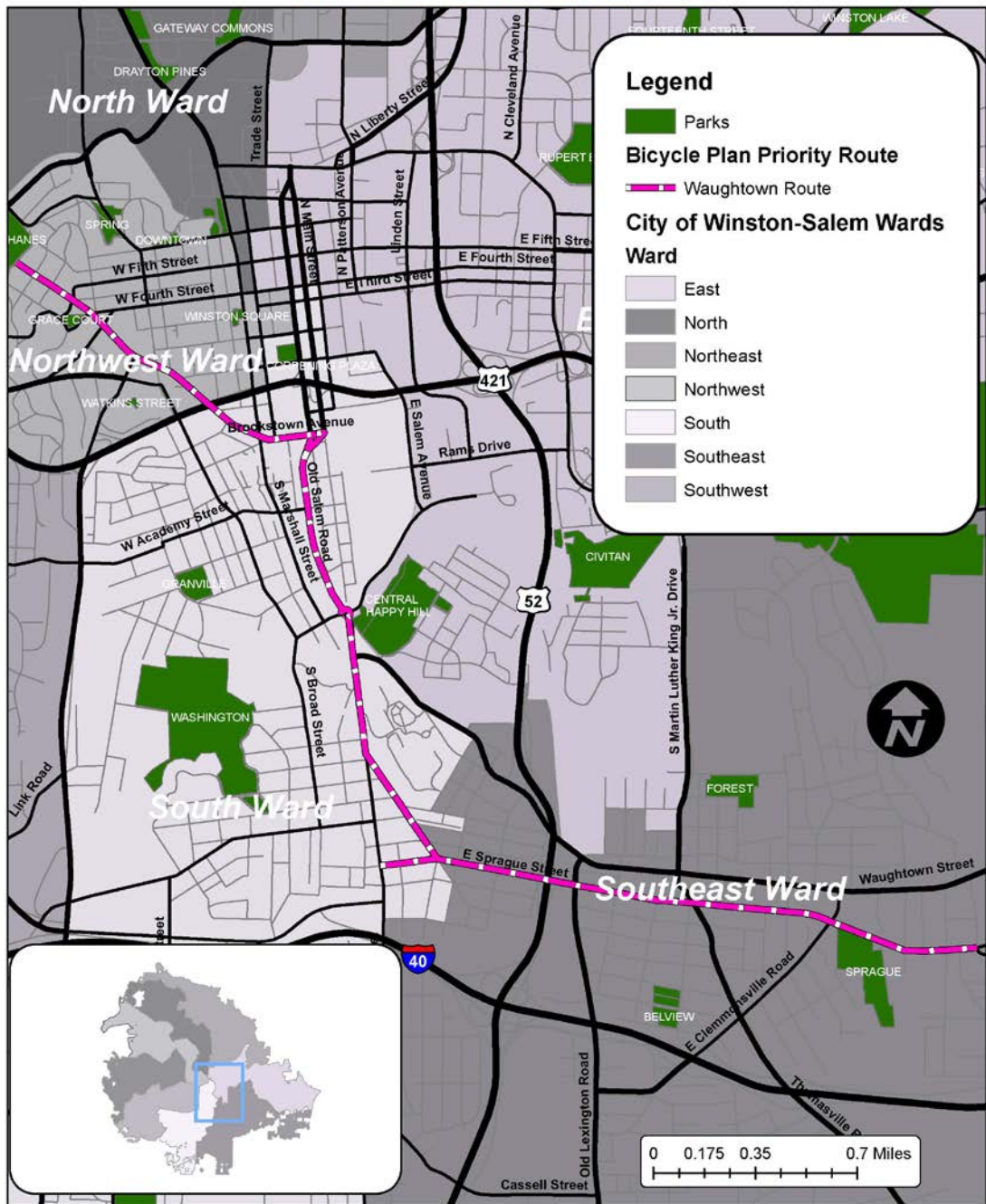
Waughtown Route

Map Label	Segment Location	Completed	Length	Stress Level	Social Equity Connections
WR-1	Brookstown Avenue from West End Boulevard to Old Salem Road	No	1.2 miles	Low-Moderate	Yes
WR-2	Old Salem Road from Brookstown Avenue to S Main Street	No	.8 miles	High	Yes
WR-3	South Main Street from Old Salem Road to Sunnyside Avenue	Yes	.5 miles	Moderate/High	Yes
WR-4	Sunnyside Avenue from South Main Street to Sprague Street	No	.4 miles	Low	Yes
WR-5	Sprague Street from South Main Street to Brindle Street	No	2.1 miles	Moderate	Yes

Planning Level Construction Cost Estimate : \$590,000

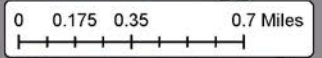
Waughtown Route

City of Winston-Salem Tier 1 Project Corridor



Legend

- Parks
- Bicycle Plan Priority Route**
- Waughtown Route
- City of Winston-Salem Wards**
- Ward**
- East
- North
- Northeast
- Northwest
- South
- Southeast
- Southwest



Bethabara Brightway



Legend

- Bethabara Brightway
- Existing Bicycle Facilities
- Existing Greenways
- Parks

Key Destinations

- Work/Business
- Park/Recreation/Trail
- Shopping
- Church

Key Destinations:

1. Mill Creek Trail
2. Aldi grocery store
3. Bethabara Moravian Church
4. Sara Lee Soccer Complex
5. North Forsyth High School
6. Hine Park
7. Davis Field
8. Waterfall Field
9. Spry Soccer Stadium
10. Historic Bethabara Park
11. Wake Forest Connector Greenway (proposed)
12. Reynolda Business Center

5.3.10 Bethabara Brightway

Route Description:

The Bethabara Brightway uses an existing trail and proposed improvements on Bethabara Road, as well as proposed greenways, to provide a connection between Wake Forest University and residential and commercial areas on Hanes Mill Road. The route begins at Polo Road and heads north, using existing trails on Long Drive and University Parkway. The route turns northwest on Bethabara Road, using proposed Class IV improvements and connects to the proposed Mill Creek Trail Greenway. Users may use the greenway to go north to East Hanes Mill Road near Brassfield Drive. This route links to both the Northside Terrace and Brightway Interim Routes. In addition to providing access to retail and employment centers, the Bethabara Brightway will connect several transit lines and provide additional mobility and access for low-income minority neighborhoods in northern Winston-Salem (Table 5-11).

Total Length: 6.5 miles (8 percent complete)

Total Cost: \$1,593,050

Bus Route Connections:

- Route 87
- Route 97
- Route 109

Bethabara Brightway

Map Label	Segment Location	Completed	Length	Stress Level	Social Equity Connections
BB-1	Long Drive and University Parkway from Polo road to Bethabara Road	Yes	.5 miles	Low	Yes
BB-2	Bethabara Road and Bethania Station Road from University Parkway to Bethabara Parkway	No	1.6 miles	Low	Yes
BB-3	Mill Creek Greenway	No	2.2 miles	Low	Yes

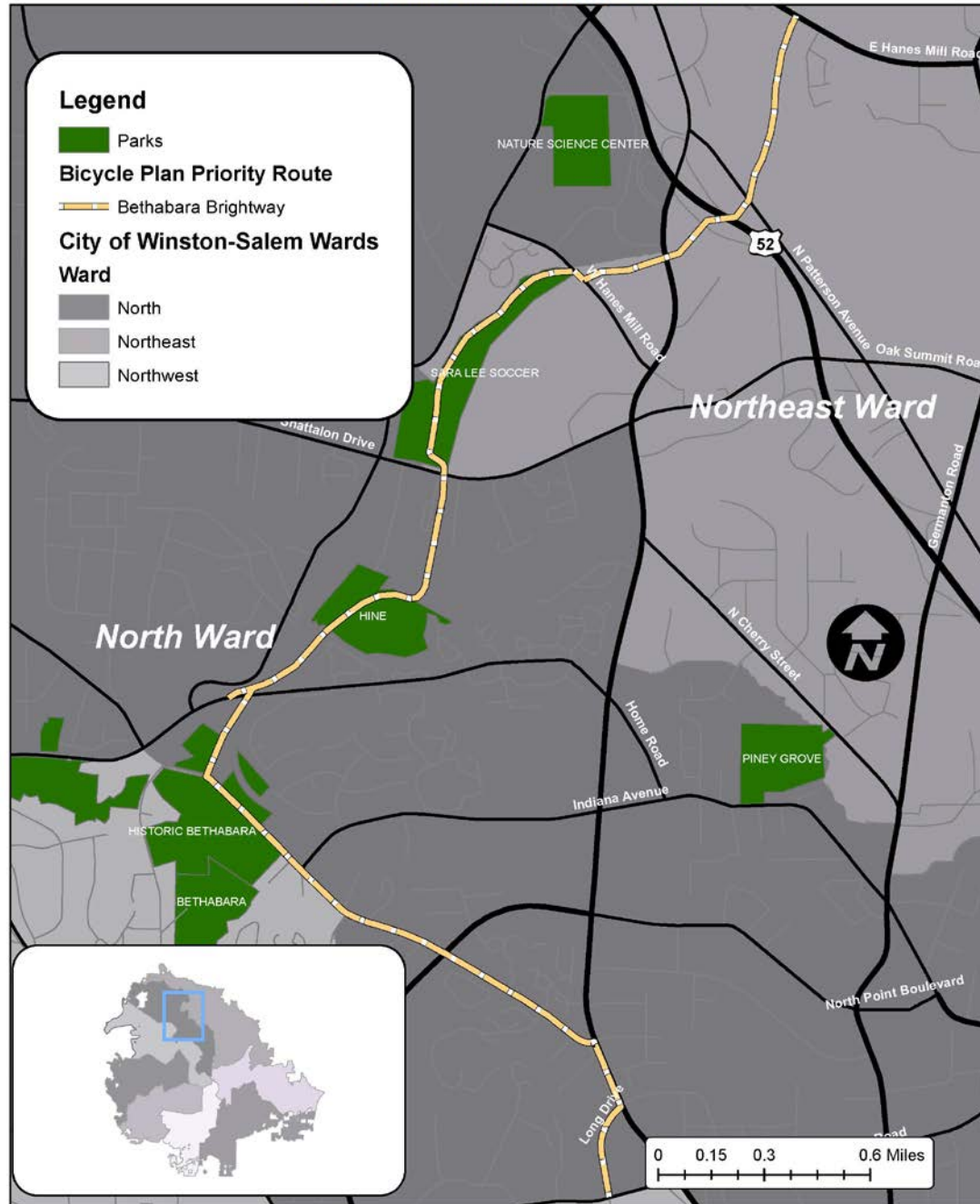
Planning Level Construction Cost Estimate :

Trail: \$5,500,000

On-Street: \$600,000

Bethabara Brightway

City of Winston-Salem Tier 1 Project Corridor



Bicycle Master Plan Next Steps

- Public Works Committee
- Design Tier 1 On-Street Projects with 2018 Bond Funding (\$400,000)
- Establish Construction Budget
- Construction