
WINSTON-SALEM URBAN AREA

CONGESTION MANAGEMENT PROCESSES (CMP) Biennial Report

Prepared by:
The Winston-Salem
Department of Transportation

2012 UPDATE

INTRODUCTION

In 1998, the Transportation Equity Act for the 21st Century (TEA-21) continued the requirement that was first established in the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) that each Transportation Management Area (TMA) with an urbanized population over 200,000 develop and implement a Congestion Management System (CMS). Additionally, a CMS must be developed and implemented as part of the regular Metropolitan Planning Organization (MPO) planning process.

On August 10, 2005, the President signed into law the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA-LU builds on the foundation of ISTEA and TEA-21 with an emphasis on the use of road pricing and the promotion of real-time traffic management in all States to help improve transportation security and provide better information to travelers and emergency responders to manage congestion. With the signing of the SAFETEA-LU came the name change from Congestion Management Systems (CMS) to Congestion Management Processes (CMP). The recent signing of the Moving Ahead for Progress in the 21st Century Act (MAP-21) continues the CMP requirement from previous legislation.

ANALYSIS

The Congestion Management Processes Biennial Report represents *Element #7 Implementation of Strategies* and *Element #8. Monitoring of Strategy Effectiveness* of the CMP plan (Sections 3.5.3.G & H of the 2035 LRTP). This report plans to achieve the following:

- Identify deficient locations using the performance measures identified in section 3.5.3.C. The locations to be analyzed should be:
 - Other Principal Arterials and higher classified by the Federal Functionally Classified road network
 - Minor Arterials and Collectors classified by the Federal Functionally Classified road network
 - Thoroughfare Plan/Comprehensive Transportation Plan network
 - Selected major intersections
 - Major traffic generators (MACs, shopping centers, etc.)
- Identify existing and/or proposed projects that may mitigate congestion in the deficient locations. Include effectiveness measures, data collection needs, and time frame for analysis or project completion date.
- If there are no existing or proposed projects planned that may mitigate congestion, identify potential strategies from the Congestion Management Processes Monitoring Toolkit for each deficient location. Coordinate the potential strategies with the project identification processes such as the Needs process, call for Enhancement, STP-DA, CMAQ, and the TIP process for project prioritization and funding. It should be noted that there may be some deficient locations that are not treatable for congestion management.
- The report will include the following:
 - List of deficient locations with mileage, V/C ratio, and FFC
 - Map of the deficient locations
 - Strategy Monitoring table listing the deficient location and strategies for each location
 - Measures of Effectiveness table with before and after Capacity, Mobility, and or Energy/Environment comparisons and a benefit identification

- Accomplishments that identify improvements implemented since the previous reporting period that may not be attributed to a specific deficient location
- Findings and recommendations

OPERATIONS POLICIES AND RECOMMENDATIONS

A variety of effective strategies, related to mitigating congestion are listed in *Element #6. Identification and Evaluation of Strategies* of the CMP (Section 3.5.3.F of the 2035 Long Range Transportation Plan (LRTP)). The following is a summary of accomplishments since the previous biennial report toward the objectives and goals of the CMP.

In 2011, the central signal system software was updated. WSDOT continues to troubleshoot communication failures on the copper communication lines until the more reliable fiber network is installed under the Signal System Upgrade project (C-5224). Design of this project is currently underway. Phase A is scheduled to be let in May 2013 and Phase B to be let in July 2013.

WSTA is currently looking at areas for service expansion as part of its 2012 Comprehensive Operations Analysis (COA). This process involves evaluating existing route structures and employing modifications resulting in an expanded service area. The process will include identifying new residential/commercial construction, expansion and relocation and evaluating service potential. Conversely, the COA will eliminate unproductive service. As of 2012, the Authority has collected surveys from both the general public and commercial entities. Additionally, WSTA has compiled data on load factors by trips and bus stop locations. WSTA has worked with the City-County Planning Department to ensure that supporting infrastructure such as sidewalks and bus shelters are installed to the maximum extent possible. A Strategic Planning retreat with the Board of Directors is scheduled for early 2013 and will incorporate recommendations for route modifications. WSTA is also using the Reorganization Process and the WSTA Bus Stop Improvement Study to identify corridors where bus stop locations can be connected to sidewalks and where space is available to install transit shelters that serve both PART and WSTA customers. This process is ongoing.

A Regional Pass Program has been implemented which has made it easier for passengers to make regional trips using more than one public transportation system. This program has encouraged people to use public transportation for these types of trips and has resulted in some increases in ridership. Also, an unlimited ride pass provides economic value for passengers who frequently use public transportation. From a system standpoint, encouraging passengers to travel between systems allows each system to benefit from increased boarding which positively affects federal and state funding allocations. All systems have worked out an agreement for a regional fare reimbursement to the local systems

The urban systems (GTA, WSTA, PART, Hi-Tran and Burlington) are presently engaged in a Regional Technology Project which is an effort to coordinate software and technology. Currently, all systems share a Trapeze scheduling database emanating from a server in Winston-Salem. Winston-Salem is currently installing a real-time passenger information system which can form the foundation for a regional real-time information system. Eventually, this system will be integrated into a statewide "511" system. The system also provides AVL data for internal consumption.

PART has expanded service into Davie County and increased its routes into Surry County. Funding challenges have limited expansion to other areas though PART continues to study possibilities for expanded services.

PART has increased connectivity for rural and urban providers by providing services throughout a 10-county territory and incorporating stops at major hospitals, downtowns, and colleges/universities. PART implemented the regional value pass program and the Triad Commute challenge to encourage regional ridership. PART expanded the RideShare Vanpool Program throughout the region, the Air Awareness Program, and the park and ride lot program throughout the region. To date, PART has constructed 17 park and ride facilities and has a total of 24 locations available for public use.

Since the 2009 Biennial Update, over 5 miles of bicycle lanes have been installed in the City of Winston-Salem. An additional 20 miles are planned within the next 4 years and a total of 60 additional miles are planned by 2022.

REPORTINGS

This 2012 biennial report is the continuation of the WSUA CMP. What will be presented are the deficient locations both in a table and map format, the Strategy Monitoring table, and a list of accomplishments since the 2009 Biennial Update. Due to the timeframes for the projects identified in the Strategy Monitoring Table, there is no report at this time on the Measures of Effectiveness for the deficient locations nor is there a report on the findings and recommendations. Refer to section 3.5.4 *Future Initiatives* of the CMP to see the planned tasks for the next Biennial Report.

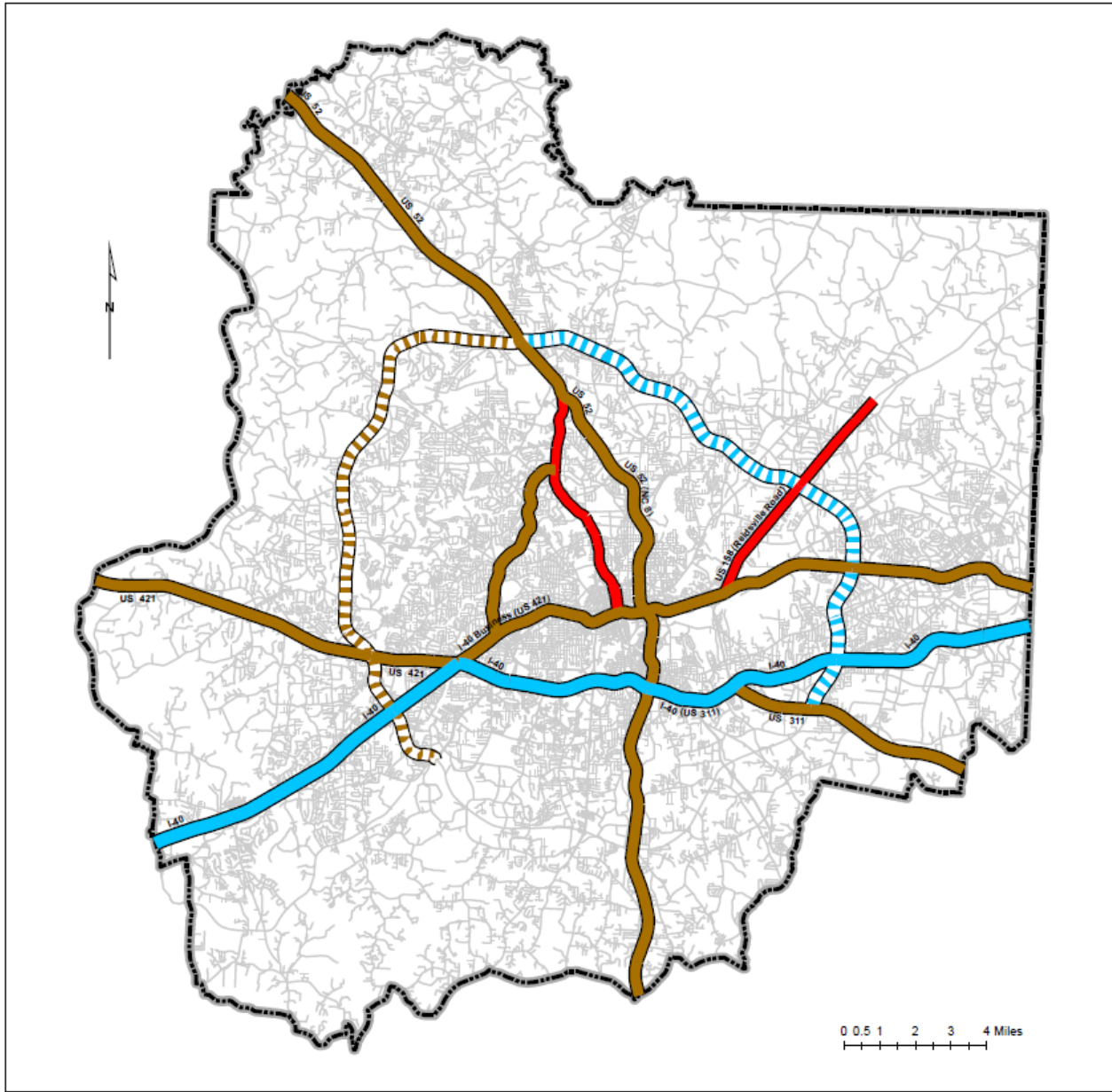
PRIMARY DEFICIENT LOCATIONS

FACILITY	SECTION	2005 v/c	2009 v/c	2011 v/c	Fed. Funct. Class.
BUSINESS 40 (US 421)	SILAS CREEK PARKWAY (NC 67) - KNOLLWOOD STREET	0.00	0.96	0.93	FREEWAY/EXPRESSWAY
BUSINESS 40 (US 421)	KNOLLWOOD STREET - S STRATFORD ROAD (US 158)	0.00	0.96	0.93	FREEWAY/EXPRESSWAY
BUSINESS 40 (US 158, US 421)	S STRATFORD ROAD - CLOVERDALE AVENUE	0.00	1.04	1.01	FREEWAY/EXPRESSWAY
BUSINESS 40 (US 158, US 421)	CLOVERDALE AVENUE - LOCKLAND AVENUE/W FIRST STREET	0.00	0.98	0.96	FREEWAY/EXPRESSWAY
BUSINESS 40 (US 158, US 421)	LOCKLAND AVENUE/W FIRST STREET - PETERS CREEK PARKWAY (NC 150)	0.00	1.12	1.11	FREEWAY/EXPRESSWAY
BUSINESS 40 (US 158, US 421, NC 150)	PETERS CREEK PARKWAY (NC 150) - S BROAD STREET	0.00	1.22	1.19	FREEWAY/EXPRESSWAY
BUSINESS 40 (US 158, US 421, NC 150)	S BROAD STREET - S MARSHALL STREET	0.00	1.24	1.19	FREEWAY/EXPRESSWAY
BUSINESS 40 (US 158, US 421, NC 150)	S MARSHALL STREET - S MAIN STREET	0.00	1.17	1.16	FREEWAY/EXPRESSWAY
BUSINESS 40 (US 158, US 421, NC 150)	S MAIN STREET - US 52 (US 311, NC 8)	0.00	1.11	1.09	FREEWAY/EXPRESSWAY
BUSINESS 40 (US 158, US 421, NC 150)	US 52 (US 311, NC 8) - N MARTIN LUTHER KING, JR. DRIVE	0.00	1.19	1.14	FREEWAY/EXPRESSWAY
BUSINESS 40 (US 158, US 421, NC 150)	N MARTIN LUTHER KING, JR. DRIVE - E FIFTH STREET	0.00	1.11	1.14	FREEWAY/EXPRESSWAY
BUSINESS 40 (US 158, US 421, NC 150)	E FIFTH STREET - LOWERY STREET	0.00	0.00	0.00	FREEWAY/EXPRESSWAY
BUSINESS 40 (US 158, US 421, NC 150)	LOWERY STREET - REIDSVILLE ROAD (US 158)	0.00	1.11	1.12	FREEWAY/EXPRESSWAY
INTERSTATE 40	HANES MALL BOULEVARD - PETERS CREEK PARKWAY (NC 150)	1.05	0.99	1.02	INTERSTATE
INTERSTATE 40	SILAS CREEK PARKWAY RAMPS - US 52 (NC 8)	1.06	1.02	1.05	INTERSTATE
INTERSTATE 40 (US 311)	US 52 (NC 8) - THOMASVILLE ROAD (NC 109)	1.01	1.00	1.02	INTERSTATE
INTERSTATE 40	UNION CROSS ROAD - NC 66	0.95	0.93	0.98	INTERSTATE
INTERSTATE 40	NC 66 - GUILFORD COUNTY LINE	0.93	0.95	0.96	INTERSTATE
REIDSVILLE ROAD (US 158)	OLD GREENSBORO ROAD - OLD BELEWS CREEK ROAD (S)	1.24	1.24	1.31	OTHER PRINCIPAL ARTERIAL
REIDSVILLE ROAD (US 158)	OLD BELEWS CREEK ROAD (S) - OLD BELEWS CREEK ROAD (N)	0.92	0.92	0.98	OTHER PRINCIPAL ARTERIAL
REIDSVILLE ROAD (US 158)	OLD BELEWS CREEK ROAD (N) - NORTHERN BELTWAY (EAST)	0.00	0.89	1.01	OTHER PRINCIPAL ARTERIAL
REIDSVILLE ROAD (US 158)	NORTHERN BELTWAY (EAST) - DARROW ROAD	0.92	0.98	0.98	OTHER PRINCIPAL ARTERIAL
REIDSVILLE ROAD (US 158)	OLD HOLLOW ROAD (NC 66) - VANCE ROAD	1.08	1.01	1.01	OTHER PRINCIPAL ARTERIAL
SILAS CREEK PARKWAY (NC 67)	COUNTRY CLUB ROAD - ROBINHOOD ROAD	1.14	1.04	1.04	FREEWAY/EXPRESSWAY
US 52 (US 311, NC 8)	I-40 - E SPRAGUE STREET	0.00	0.95	0.98	FREEWAY/EXPRESSWAY
US 52 (US 311, NC 8)	E SPRAGUE STREET - WAUGHTOWN STREET	0.00	0.00	0.00	FREEWAY/EXPRESSWAY
US 52 (US 311, NC 8)	WAUGHTOWN STREET - VARGRAVE STREET	0.00	0.96	0.98	FREEWAY/EXPRESSWAY
US 52 (US 311, NC 8)	VARGRAVE STREET - STADIUM DRIVE/RAMS DRIVE	0.00	0.98	0.98	FREEWAY/EXPRESSWAY
US 52 (US 311, NC 8)	STADIUM DRIVE/RAMS DRIVE - BUSINESS 40 (US 158, US 421, NC 150)	0.00	1.04	1.08	FREEWAY/EXPRESSWAY
US 52 (US 311, NC 8)	BUSINESS 40 (US 158, US 421, NC 150) - E THIRD STREET	0.00	1.43	1.46	FREEWAY/EXPRESSWAY
US 52 (US 311, NC 8)	E THIRD STREET - E FIFTH STREET	0.00	0.00	0.00	FREEWAY/EXPRESSWAY
US 52 (US 311, NC 8)	E FIFTH STREET - N MARTIN LUTHER KING, JR. DRIVE	0.00	1.40	1.38	FREEWAY/EXPRESSWAY
US 52 (NC 8)	N MARTIN LUTHER KING, JR. DRIVE - N LIBERTY STREET (S)	0.00	1.28	1.22	FREEWAY/EXPRESSWAY
US 52 (NC 8)	N LIBERTY STREET (S) - E NORTHWEST BOULEVARD	0.00	1.27	1.22	FREEWAY/EXPRESSWAY

PRIMARY DEFICIENT LOCATIONS

FACILITY	SECTION	2005 v/c	2009 v/c	2011 v/c	Fed. Funct. Class.
US 52 (NC 8)	E NORTHWEST BOULEVARD - N LIBERTY STREET (C)	0.00	1.30	1.24	FREEWAY/EXPRESSWAY
US 52 (NC 8)	N LIBERTY STREET (C) - E TWENTY-FIFTH STREET	0.00	1.20	1.14	FREEWAY/EXPRESSWAY
US 52 (NC 8)	E TWENTY-FIFTH STREET - N LIBERTY STREET (N)	0.00	1.12	0.00	FREEWAY/EXPRESSWAY
US 52 (NC 8)	N LIBERTY STREET (N) - AKRON DRIVE	0.00	0.00	1.09	FREEWAY/EXPRESSWAY

Note: Where the v/c is 0.00, a traffic count was not available.

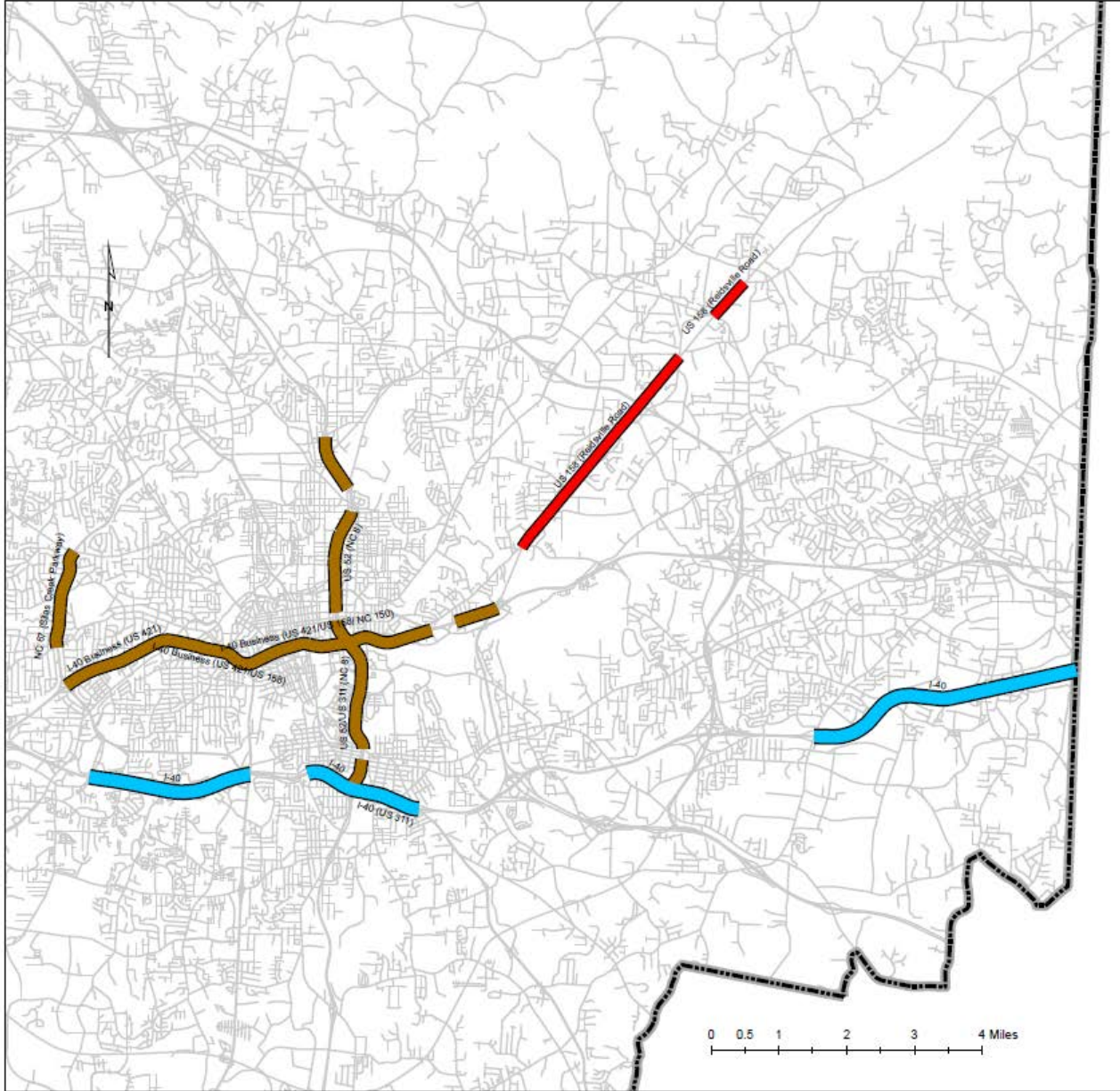


Winston-Salem Urban Area Federal Functional Classifications Principal Arterials

Legend

Federal Functional Class Classification

- Interstate
- Future Interstate
- Freeway/Expressway
- Future Freeway/Expressway
- Other Principal Arterial
- Other Streets
- Metropolitan Area Boundary



Winston-Salem Urban Area Principal Arterials with a V/C Ratio of 0.93 or Greater

Legend

**Congested Principal Arterials
Classification**

- █ Interstate
- █ Freeway/Expressway
- █ Other Principal Arterial
- Other Streets

STRATEGY MONITORING TABLE

Deficient Location	Potential Strategy Tool(s)**	Planned or Proposed Project [Tip # (LRTP Map #)]	Construction Timeframe	Measures of Effectiveness
BUSINESS 40 (US 421) - Silas Creek Parkway (NC 67) to Peters Creek Parkway (NC 150)	HI3, HI4, TI3, TI5, FM2, IT2, IT3, IT4	R-2247 (09,10)	2026-2035	Mobility, Capacity, Energy/Environment
BUSINESS 40 (US 158, US 421, NC150) - Peters Creek Parkway to US 52	HI3, HI4, TI3, TI5, FM2, IT2, IT3, IT4	U-2827B (01) MLK Extension (16) R-2247 (09,10)	2016-2021 2016-2025 2026-2035	Mobility, Capacity, Energy/Environment
BUSINESS 40 (US 158, US 421, NC150) - US 52 to Reidsville Road (US 158)	HI3, HI4, TI3, TI5, FM2, IT2, IT3, IT4	U-2579 (02,08) US 311 Connector (13)	2016-2025 2026-2035	Mobility, Capacity, Energy/Environment
INTERSTATE 40 - Hanes Mall Blvd to Peters Creek Parkway	HI4, FM1, FM2, TO1, IT2, IT3, IT4	N/A		Mobility, Capacity, Energy/Environment
INTERSTATE 40 - Silas Creek Parkway Ramps to Thomasville Road (NC 109)	HI4, FM1, FM2, TO1, IT2, IT3, IT4	Ebert/Stratford Connector (13)	2016-2025	Mobility, Capacity, Energy/Environment
INTERSTATE 40 - Union Cross Road to Guilford County Line	HI4, FM1, FM2, TO1, IT2, IT3, IT4	I-40 Widening (11)	2022-2025	Mobility, Capacity, Energy/Environment
REIDSVILLE ROAD (US 158) - Old Greensboro Road to Northern Beltway (East)	HI2, H14, BP3, FM2, TO1, TO2, TO3, AM2	R-2577A (05) U-2579 (02,08)	2016-2025 2016-2025	Mobility, Capacity, Safety, Energy/Environment
REIDSVILLE ROAD (US 158) - Northern Beltway (East) to Darrow road	HI2, H14, BP3, FM2, TO1, TO2, TO3, AM2	R-2577A (05)	2016-2025	Mobility, Capacity, Safety, Energy/Environment
REIDSVILLE ROAD (US 158) - Old Hollow Road to Vance Road	HI2, HI4, BP3, FM2, TO1, TO2, TO3, AM2	R-2577B (05)	2026-2035	Mobility, Capacity, Safety, Energy/Environment
SILAS CREEK PARKWAY (NC 67) - Country Club Road to Robinhood Road	HI2, HI4, TO1, TO3, AM1, AM2, AM4	R-2247 (09)	2026-2035	Mobility, Capacity, Safety
US 52 (US 311, NC 8) - Interstate 40 to Vargrave Street	HI4, TI2, TI3, TI5, FM2, TO1, TO5, IT2, IT3, IT4,	N/A		Mobility, Capacity, Safety, Energy/Environment

**See Strategy Monitoring Toolkit, Table 5, Section 3.5 of the LRTP

STRATEGY MONITORING TABLE

Deficient Location	Potential Strategy Tool(s)**	Planned or Proposed Project [Tip # (LRTP Map #)]	Construction Timeframe	Measures of Effectiveness
US 52 (US 311, NC 8) - Vargrave Street to Business 40 (US 158, US 421, NC 150)	HI4, TI2, TI3, TI5, FM2, TO1, TO5, IT2, IT3, IT4,	U-2925 (06)	2012-2015	Mobility, Capacity, Safety, Energy/Environment
US 52 (NC 8) - Business 40 (US 158, US 421, NC 150) to Martin Luther King Jr. Drive	HI4, TI2, TI3, TI5, FM2, TO1, TO5, IT2, IT3, IT4,	U-2579 (02,08) U-4918A (01) U-2826 (04)	2016-2025 2012-2015 2012-2015	Mobility, Capacity, Safety, Energy/Environment
US 52 (NC 8) - Martin Luther King Jr. Drive to Akron Drive	HI4, TI2, TI3, TI5, FM2, TO1, TO5, IT2, IT3, IT4,	U-2579 (02,08) U-2826 (06)	2026-2035 2012-2035	Mobility, Capacity, Safety, Energy/Environment

****See Strategy Monitoring Toolkit, Table 5, Section 3.5 of the LRTP**

ACCOMPLISHMENTS

- **Plans and Documents**
 - **2012** – *Winston-Salem Urban Area Greenway Plan* update
- **Feasibility/Corridor Studies**
 - Cloverdale Avenue Pedestrian & Bicycle Study
 - Big Mill Farm Road Feasibility Study
 - South Main Street Corridor Study (Kernersville)
- **Funded Improvements**
 - **STP-DA Bicycle and Pedestrian Projects:** \$5.4 million has been allocated for bicycle, sidewalk, and greenway projects for FY 2011 and \$6.8 million in FY2012. An additional allocation of \$6.6 million is expected later this year.
 - **STP-DA Intersection Improvement Projects:** A TIP program number U-4742 has been established to fund a minimum of \$300,000 per year through to FY 2015 for intersection improvements projects throughout the MPO
 - **CMAQ Projects:** The C-5142B project to upgrade the CCTV equipment for the City and to retiming signals on 6 corridors is currently underway with expected completion in the fall of 2012. An additional 6 cameras and a closed loop system on Hanes Mill Road will be installed as project C-4981 with expected completion in 2013.
- **Signal Corridor Retimings & Travel Time Studies**
 - Peters Creek Parkway, Academy Street to Southpark Boulevard
 - Martin Luther King, Jr. Drive, New Walkertown Road (US 311) to Reynolds Park Drive
 - University Parkway, Hanes Mill Road North to North Point Boulevard
 - Hanes Mall Boulevard, Jonestown Road to Silas Creek Parkway
 - Jonestown Road, Country Club Road to Kester Mill Road
 - Stratford Road, Oakwood Drive to I-40 WB Ramp
 - Silas Creek Parkway, Hanes Mall Boulevard to Hawthorne Road
 - Silas Creek Parkway, Ebert Street to Buchanan Street
 - Reynolda Road, Old Town Drive to Stratford Road
 - Robinhood Road, Norman Road to Silas Creek Parkway SB Ramp
 - University Parkway, Cherry Street to Northwest Boulevard
- **Completed Projects**
 - Silas Creek/Bethabara/North Point Intersection Improvements
 - Ebert Street & Oak Grove Road Signal
 - Polo Road & Peace Haven/Petree Intersection Improvements
 - Highland & MLK Eastbound Left Turn Lane
 - On-Street Bike Facilities
 - Waughtown Street from Main Street to Lomond Street
 - Northwest Boulevard from Hawthorne Road to Reynolda Road
 - Salem Avenue from Broad Street to Main Street
 - 4th Street from Liberty Street to MLK, Jr. Drive
 - 5th Street from Liberty Street to MLK, Jr. Drive
 - Greenways & Multiuse Paths
 - Brushy Fork Greenway from Lowery Street to Old Greensboro Road

- Salem Creek Greenway underpasses at Broad Street and Main Street
- Long Drive Multiuse Path
- Sidewalks
 - Addison Avenue, New Walkertown Road to 12th Street
 - Aureole Street, Old Lexington Road to Belview Park
 - Bretton Street, Pleasant Street to Peachtree Street
 - Buchanan Street, Sprague Street to Salisbury Ridge Road
 - Foxcroft Drive, Little Creek Recreation Center to Flintfield Drive
 - Hawthorne Road, Silas Creek Parkway to Bethesda Road
 - Junia Avenue, Martin Luther King, Jr. Drive to Peachtree Street
 - Link Road, Peter's Creek Parkway to Waybridge Lane
 - New Walkertown Road, Waterworks Road to Spaulding Drive
 - Old Vineyard Road, Country Club Road to Johnsborough Court
 - Peter's Creek Parkway, Brewer Road to Bus Stop South of I-40
 - Pitts Street, Alder Street to Free Street
 - Pleasant Street, Peachtree Street to West Sedgefield Street
 - Reynolda Road, Loch Drive to Andrews Drive
 - Wellington Road, Robinhood Road to Pine Valley Road
 - York Road, Clovelly Road to Existing Sidewalk
 - WSSU Pedestrian Improvements, Reynolds Park Road to Cromartie Street

FINDINGS AND RECOMMENDATIONS

The data collected since the 2009 biennial report shows that the deficient segments within the Winston-Salem Urban Area have remained the same along the Business 40, Interstate 40, US 52, and Reidsville Road (US 158) corridors. This was expected since projects to address congestion in these locations are still under construction or planned for the future. As projects are completed over the next several years, the Congestion Analysis portion of the CMP will be critical in determining if these projects have been effective at addressing the main areas of concern within the urban area.