

# TRIANGLE REGIONAL FREIGHT PLAN



## Appendices



# APPENDIX A – BIBLIOGRAPHY OF FREIGHT PLANNING PRACTICES

## Bibliography of MPO Freight Planning and Assessment of Freight Data Resources

This Appendix summarizes the state of the practice in MPO freight planning and provides an assessment of potential freight data resources for current and future use the Triangle Region. In developing this Appendix, the project team utilized their combined national, state and local experience to develop a bibliography of relevant data, reports, and studies. These reports were then organized by purpose/geography (e.g., metropolitan, regional, statewide, facility-specific) and by focus area (e.g. data development/ forecasting, modeling, land use, etc.). The result is the matrix presented in the table below.

The second element of this Appendix is an assessment of the currently available sources of freight data and their potential applicability to the Triangle Region. These data sources were identified based on the freight plans and studies reviewed in the matrix below. The team summarized these sources by the type(s) of information they contain (i.e. commodity flow, travel time, and origin-destination) and their applicability to the Triangle Region.

Freight Study	Agency	Purpose/ Geography	Innovative Features
Countywide Goods Movement Collaborative and Plan (2015)	Alameda County Transportation Commission (ACTC)	County	<b>Local Truck Routes</b> – ACTC tied together multiple disjointed truck routes throughout the county to develop a comprehensive, hierarchical system on which to focus freight investments.
Regional Goods Movement Plan (2015)	Metropolitan Transportation Commission (MTC)	Regional	<b>Smart Technologies</b> – MTC developed a package of projects, programs, and policies that serve to support and advance technologies and innovative operations that improve goods movement and overall mobility. This was forward thinking because it recognized that transportation planning must formally recognize and facilitate the role that technology will play in improving freight mobility.
Atlanta Regional Commission Freight Mobility Plan Update (2015)	Atlanta Regional Commission (ARC)	Regional	<b>Performance-based Project Prioritization</b> – ARC combined freight performance data (i.e. congestion, reliability, volumes, etc.) with freight land use data to prioritize projects along the region’s strategic freight network.
Bi-State Region Freight Plan (2015)	Bi-State Regional Commission (BSRC)	Regional	<b>Public-Private Partnership</b> – Unsatisfied with the extent of multimodal freight services available in the region, Bi-State MPO is partnering with local industry to explore the possibility of building a new multimodal facility.
Regional Freight System Planning Recommendations Study (2010)	Chicago Metropolitan Agency for Planning (CMAP)	Regional	<b>Performance-based Policy and Infrastructure Decision-Making</b> – This study developed a tool to use commodity flow data to help decision makers understand which routes would experience the greatest truck traffic growth and may need to have improvements prioritized as a result.
Houston-Galveston Area Council Regional Goods Movement Plan (2013)	Houston-Galveston Area Council (H-GAC)	Regional	<b>Stakeholder Outreach</b> – Through its partnership with the region’s stakeholders, H-GAC was able to convincingly make the business case for freight investment by highlighting freight’s role in the regional economy.
Central Florida Regional Freight Mobility Study: Delivering the Goods, Supporting Our Economy	MetroPlan Orlando	Regional	<b>Inter-Agency Collaboration</b> – This study was innovative in the level of inter-agency collaboration it achieved across MPOs, TPOs, and State DOT.

Freight Study (2013)	Agency	Purpose/ Geography	Innovative Features
Regional Freight Commodity Profiles Study (2015)	North Jersey Transportation Planning Authority (NJTPA)	Regional	<b>Data Development/ Modeling</b> – NJTPA was innovative in its combination and use of multiple data sources in order to conduct transportation modeling and industry level forecasts.
A Comprehensive Goods Movement Action Plan Program for the New York-New Jersey Metropolitan Region (2014)	Port Authority of New York-New Jersey (PANYNJ)	Regional	<b>Local Freight Policy</b> – This study was innovative in its exploration of scaling the New York City off-peak freight delivery program up to a regional level.
On the Move – Southern California Delivers the Goods: Comprehensive Regional Goods Movement Plan and Implementation Strategy (2012)	Southern California Association of Governments (SCAG)	Regional	<b>Land Use</b> – SCAG performed a detailed assessment and forecast of the region’s warehouse/distribution needs using real estate demand data.
National Cooperative Freight Research Program Report 14: Guidebook for Understanding Goods Movement (2011)	Transportation Research Board (TRB)	City/ Sub-Regional	<b>Freight Policy and Decision-Making</b> - NCFRP Report 14 was perhaps the first single report to provide a comprehensive guide for public decision-makers to accommodate and expedite urban goods movement while mitigating negative externalities. It is novel in that it explained the role of urban supply chains in the urban economy. It also explored the impacts of land use zoning decisions on the supply chain.
National Cooperative Freight Research Program Report 24: Smart Growth and Urban Goods Movement (2013)	Transportation Research Board (TRB)	Regional	<b>Land Use</b> – NCFRP Report 24 was one of the first studies to explore the potential effects of smart growth policies on goods movement. This report included a significant modeling component that estimated the freight movement implications of various smart growth scenarios relative to baseline scenarios.

## Assessment of Freight Data Sources

Fortunately, there has been a significant increase in both the quantity of quality of freight data over the past several years. This has undoubtedly been spurred by the increased focus on freight transportation planning at all levels of government – federal, state, and local. Currently, there are several freight data sources broadly available (both free and at-cost) to agencies. However, these various data sources generally fall into one of three categories based on the type of information they contain. These categories are:

- commodity flow data,
- travel time data,
- origin-destination data.

Each of these categories, and the associated data sources, are described in detail in the sections that follow. In addition, the applicability of each of the data sources for use in Triangle regional freight planning is assessed.

## Commodity Flow Data

As its name suggests, commodity flow data consists of the flow of commodities from origin to destination by mode. The commodity classification system varies by source using either the Standard Classification of Transported Goods (SCTG) or the Standard Transportation Commodity Code (STCC). Commodity flow data is important for understanding the economic dynamics underlying goods movement. Broadly available sources of commodity flow data include the Federal Highway Administration's (FHWA) Freight Analysis Framework (FAF), IHS' Transearch database, and the Surface Transportation Board's Carload Waybill Sample (though it is mode-specific and also contains traffic volumes).

### Freight Analysis Framework (FAF)

The FAF integrates data from a variety of sources to create a comprehensive national picture of freight movements among states and major metropolitan areas by all modes of transportation. It provides a picture of freight flows to, from, and within the United States. The FAF organizes the U.S. into 132 zones that range in size from regions (roughly combined statistical areas) to states. The primary basis of the FAF is the Commodity Flow Survey (CFS). The CFS is a survey of shippers conducted every five years by the U.S. Census Bureau that is the basis for estimates on both the tons shipped and dollar value trades within and between all U.S. regions for all modes of freight transportation.

As developed by Oak Ridge National Laboratory (ORNL), the FAF is only useful to the Triangle Region for determining the total flows inbound, outbound, and internal to the region. The FAF does not assign commodity flows at a regional level (i.e. county-to-county), which is necessary for statewide or regional modeling and planning. Furthermore, the FAF combines intermodal rail commodity flows with other multimodal shipments. Therefore, the FAF must be disaggregated to the county level for more detailed regional analyses, as the project team has done for the Regional Freight Plan. Finally, while the FAF offers factored updates each year, it is tied to the five-year cycle of the CFS, so that the underlying base year grows out of date over time. However, the recent release of FAF 4.0 with a 2012 base year has provided a reasonably current resource for Plan purposes.

### Transearch

Transearch is a proprietary database created by IHS. In part, Transearch is derived from the FAF database and thus contains similar information – commodity flows by origin, destination, and mode. It is distinguished from FAF in that it utilizes additional data sources and analyses to derive county-level freight flows. Thus, the Transearch database is readily usable for regional modeling and planning in its transmitted form. Furthermore, it does not confound intermodal rail with multimodal shipment as the FAF does, and it is produced annually, offering a relatively current resource whenever planning is done. However, unlike FAF the database must be purchased and because its information is proprietary, there are strict restrictions on its use and dissemination. Transearch would be a useful tool for freight planning in the Triangle region, but for budgetary reasons it is apt to be a practical option only in a potential combined purchase with NC DOT or other agencies.

## Carload Waybill Sample

The Carload Waybill Sample (CWS) is a stratified sample of rail waybills for all U.S. rail traffic by those carriers with 4,500 or more revenue carloads annually. Among other information, it details the origin, destination, commodity, and route of rail shipments. The waybill sample is expanded to represent the totality of rail flows. Agencies may request waybill data to facilitate statewide and regional planning, and a request has been submitted for the Regional Freight Plan.

Though the Carload Waybill Sample is available at no cost, it is proprietary and must be requested from the Surface Transportation Board. Also, it does not provide a forecast which is a key aspect of regional freight planning. Therefore, further analysis of the CWS is needed for its usefulness in regional freight planning. In addition, because it only has information pertaining to rail it must be supplemented with other data sources to develop a comprehensive picture of multimodal commodity flows.

## Travel Time Data

As Federal and local agencies began recognizing the need for an increased use of performance measures in transportation planning, it became apparent that the data necessary for performance-based planning was severely lacking. This was especially true of freight transportation. However, the simultaneous advent of smartphone and GPS technologies, increase in computational processing power, and decrease in data storage costs have yielded options to agencies not broadly available a decade ago. Specifically, there are now reliably available sources of freight travel time data that can be used to support performance-based planning. These include the National Performance Research Data Set (NPMRDS) and INRIX/StreetLight.

### National Performance Research Data Set

The NPMRDS is developed for FHWA by the HERE company, with truck components provided by the American Transportation Research Institute (ATRI, an arm of the American Trucking Associations). It is comprised of link-based travel times that cover the extent of the National Highway Network (NHS) as identified in MAP-21. The data are derived from probe data generated from mobile phones, vehicles, and navigation devices, with trucking data captured by satellite transponders. The NPMRDS is accessible to any state department of transportation (DOT) or metropolitan planning organization (MPO) through FHWA.

NPMRDS data is reported monthly for each of the 50 states and the District of Columbia. In its most disaggregate form, travel times are available in 5-minute averages. Travel times are reported for passenger vehicles, freight vehicles, and all vehicles combined. Importantly, because the truck probe data is provided by ATRI, larger trucks (Gross Vehicle Weight Ratings 7 and above) are more heavily represented in NPMRDS data than smaller trucks that tend to be used in urban goods movement.

The NPMRDS is a great asset to freight planning and has been adopted for the Regional Freight Plan as the means of measuring roadway freight performance. Its drawbacks are the extent of its coverage and data quality on some routes, particularly in rural areas. Because the NPMRDS only covers the NHS, there are many roadways of concern to regional decision-makers that may not be represented in the data. HERE has additional data that provides coverage on non-NHS roadways, but it must be purchased. The other drawback is the NPMRDS sometimes reports travel times that suggest unrealistic speeds. However, outliers can be trimmed from the data with enough left to perform a robust analysis.

## INRIX/StreetLight

Like the NPMRDS, INRIX provides link-level travel time data. In its most disaggregate form, travel times are available in 5-minute averages. Unlike the NPMRDS, INRIX data must be purchased and does not provide freight travel times in its base offering. These data must be purchased at an additional cost from the company StreetLight, which offers this data in conjunction with INRIX or as a standalone product.

INRIX generally has greater coverage of the transportation network in its base offering than the NPMRDS. In addition, INRIX grants clients access to online tools that can readily produce analyses and performance measures, relieving agencies of the need to generate their own from raw travel time data. Though the freight data must be purchased either separately or as part of INRIX, it offers information not present in the NPMRDS, namely origin-destination data. StreetLight includes transportation analysis zone-level origin-destination information on truck trips which is useful as an input to travel demand models and for understanding regional truck travel patterns. In addition, StreetLight also potentially offers a broader representation of truck types as it is purported to contain more medium-duty trucks than is contained in the samples that are the basis for NPMRDS.

Like the NPMRDS, INRIX/StreetLight could be very useful in future regional freight planning efforts. It provides a basis on which to assess freight transportation performance, the results from which could be incorporated into subsequent planning efforts and decision-making. The choice between NPMRDS and INRIX/StreetLight is likely to continue to be driven by cost and network coverage.

## Origin-Destination Data

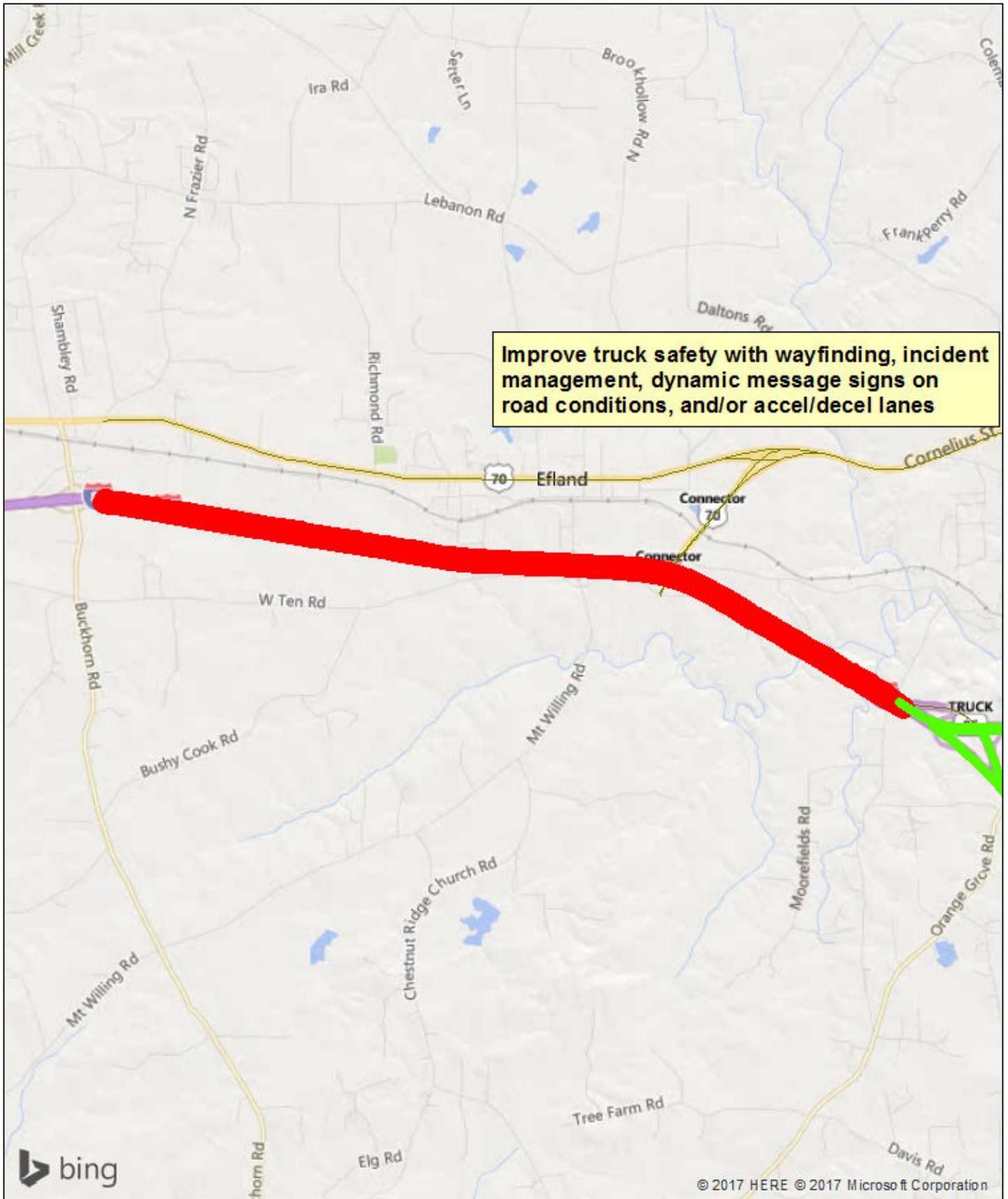
Origin-destination data is important for understanding regional truck travel patterns. It also gives an indication as to which land uses within an area are the most freight-intensive as gauged by the number of truck trips are attracted and/or generated. Truck origin-destination data is generally available from two different sources: origin-destination surveys and truck GPS data. Origin-destination surveys would have to be collected by an agency as there is no publicly available source of this data. Truck GPS data is publicly available through StreetLight (as previously discussed) and the American Transportation Research Institute (ATRI).

### ATRI Truck GPS Data

ATRI Truck GPS data is generally available in two different forms: a (relatively) raw set of GPS pings or as trip ends aggregated to the TAZ-level. The record layout of ATRI's GPS pings consist of an anonymized truck identifier, a timestamp, and a coordinate. From those individual records (GPS pings), it is up to the analyst to determine which records are indicative of a stopped truck or moving truck. Based on that analysis, the truck trip ends by analysis zone can be determined.

The alternative format of the ATRI Truck GPS data is of trip ends already aggregated to zonal levels. This is a preferred alternative if the actual GPS pings are not needed for some other analysis. The pre-aggregated form of the ATRI data saves the trouble of producing those results in-house.

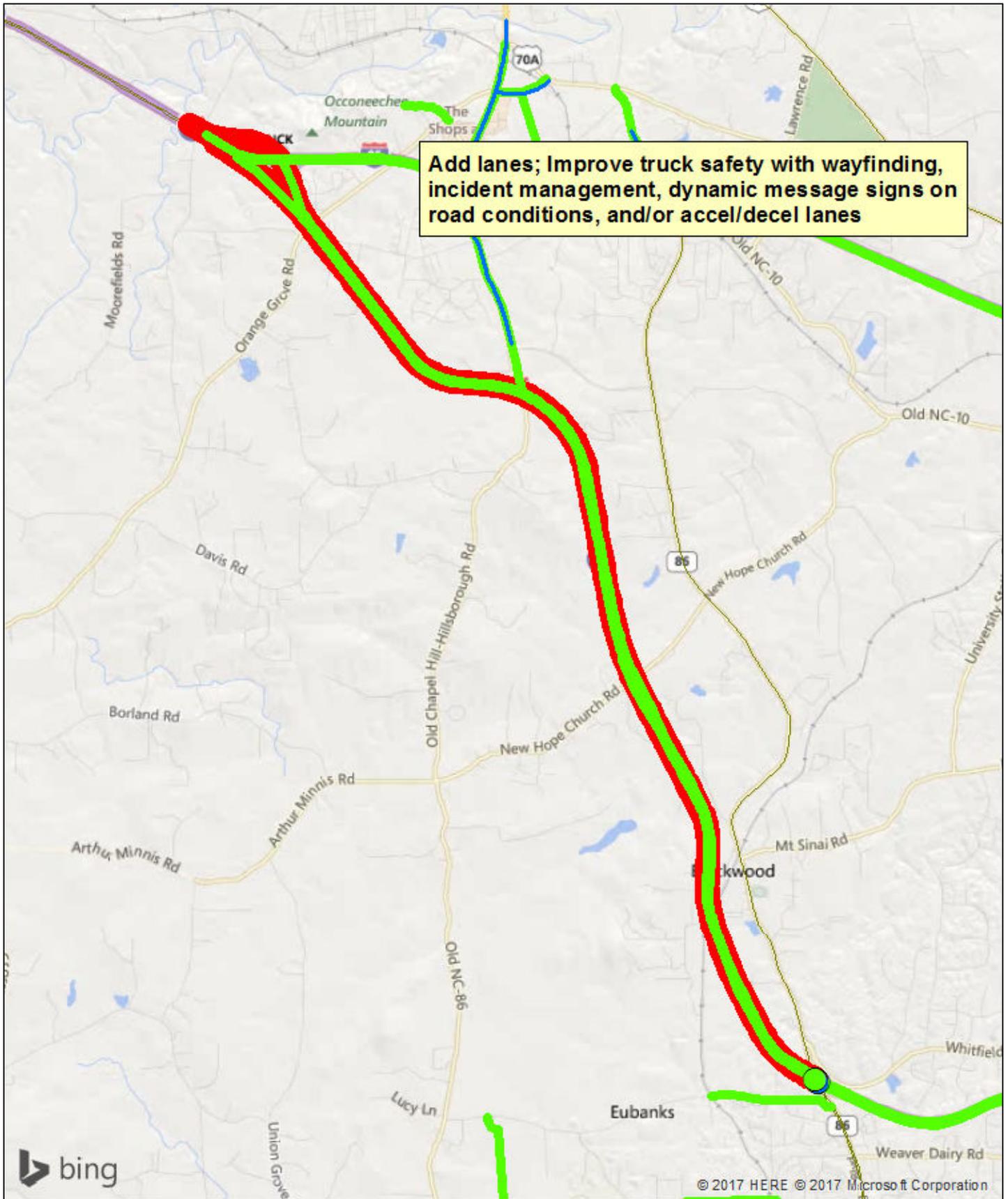
# APPENDIX B – PROJECT MAPS



**Project No. 1**

**I-40 / I-85: Buckhorn Rd to I-40 / I-85 Split**

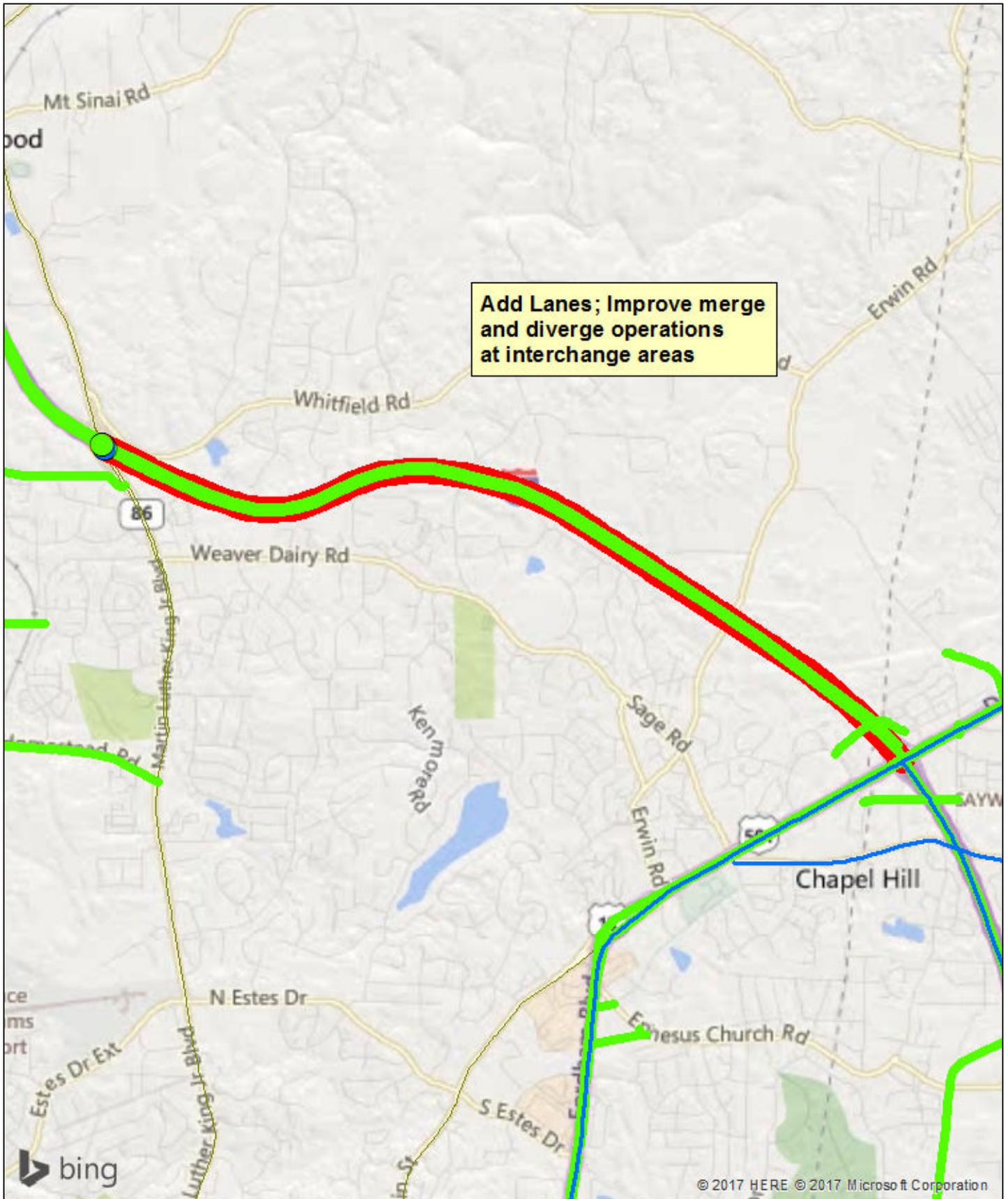
- Recommended Freight Project
- STIP Projects
- MTP Projects
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**Project No. 2**

**I-40: I-85 to NC 86**

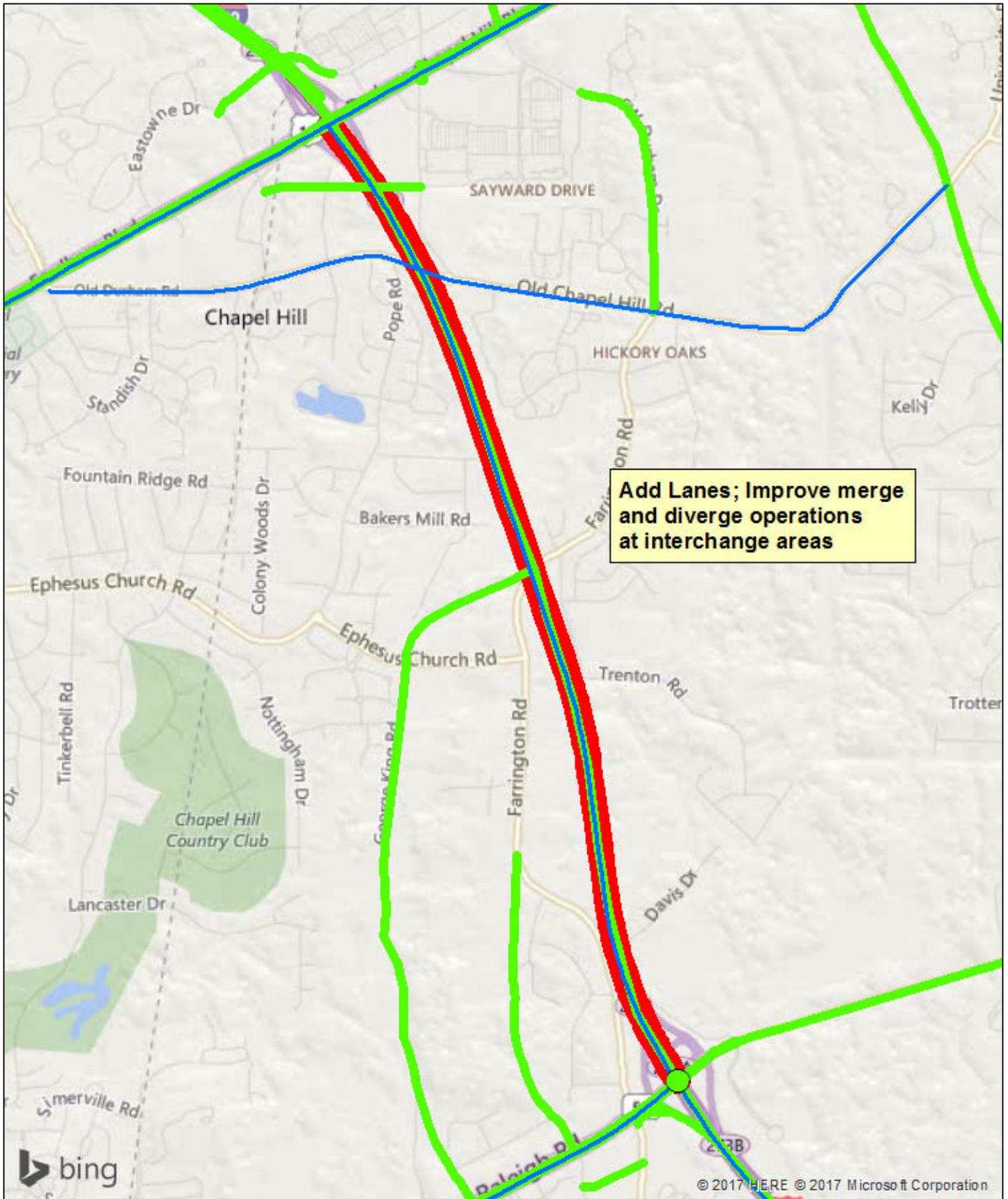
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
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**Project No. 3**

**I-40: NC 86 to US 15-501**

- █ Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects

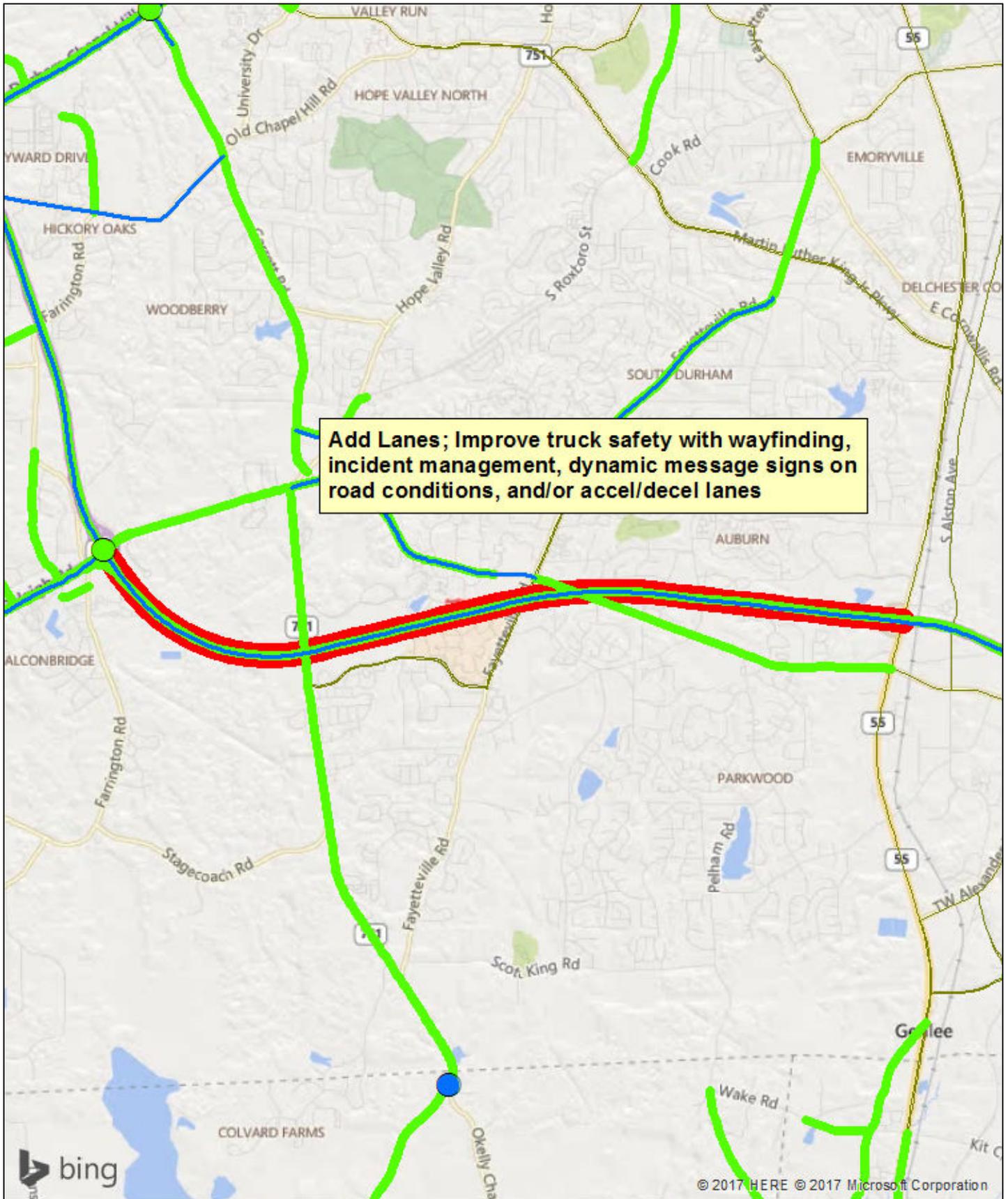


**Project No. 4**

**I-40: US 15-501 to NC 54**

-  Recommended Freight Project
-  STIP Projects
-  MTP Projects

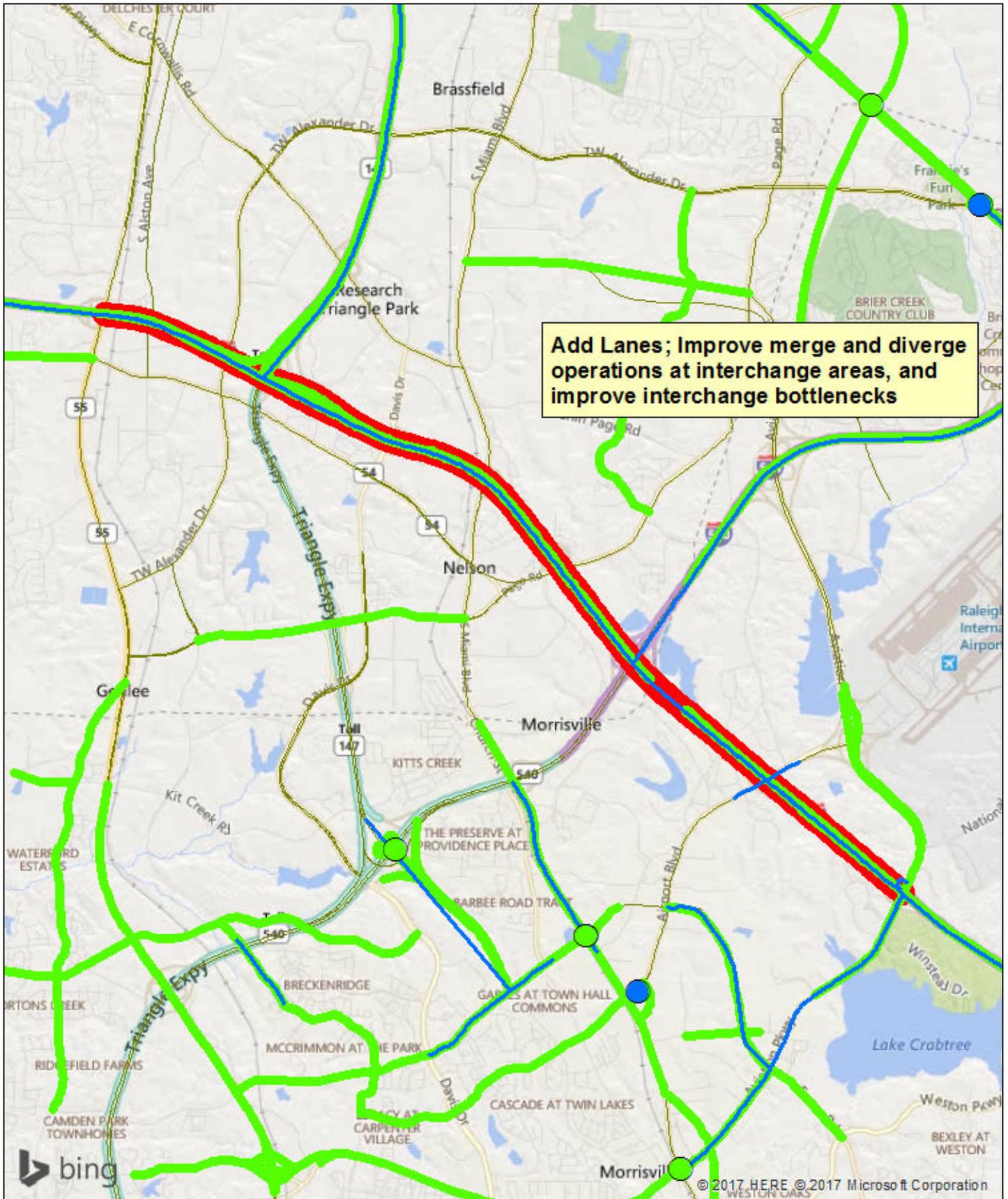
-  STIP Projects
-  MTP Projects



**Project No. 5**

**I-40: NC 54 to NC 55**

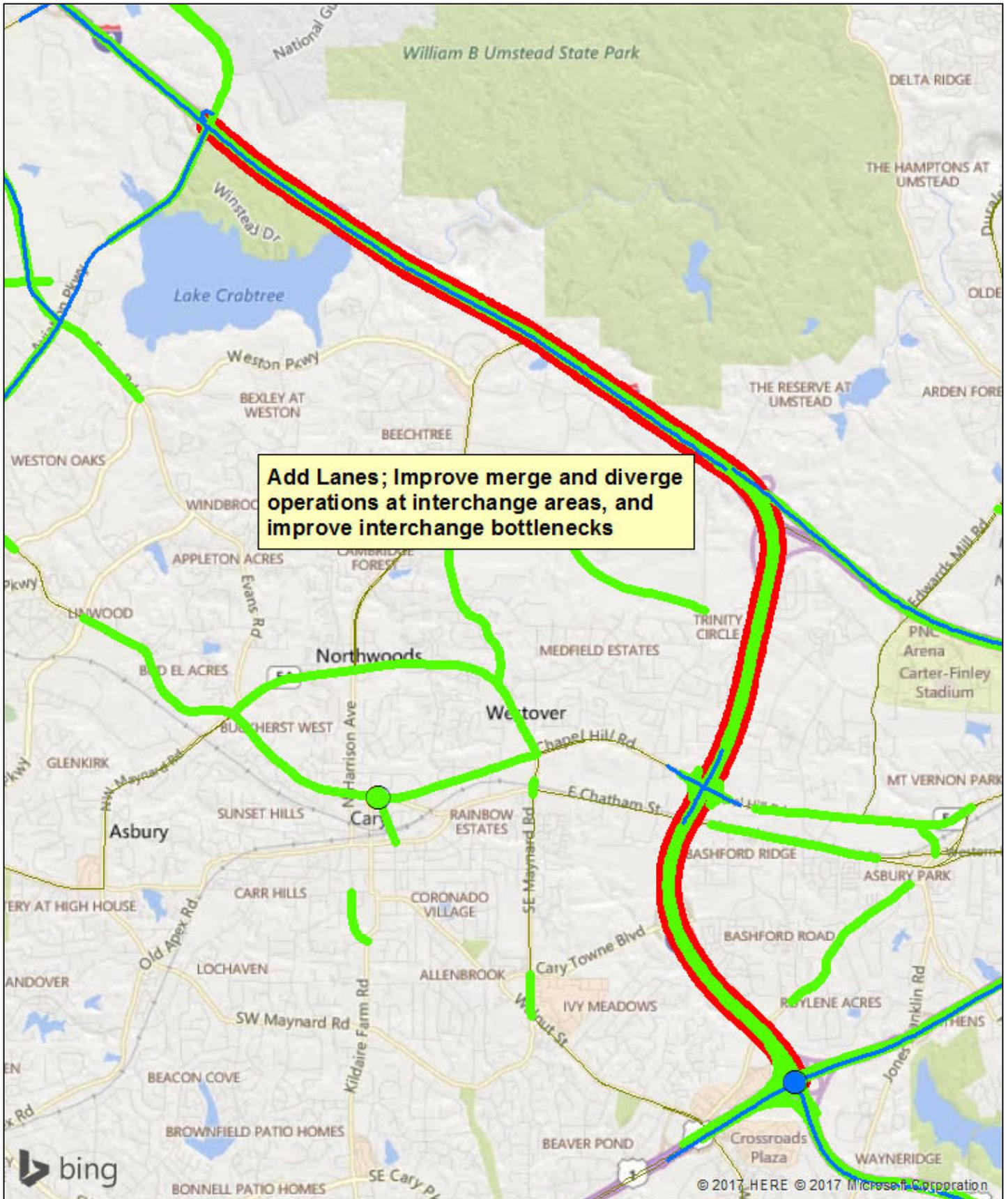
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- MTP Projects
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**Project No. 6**

**I-40: NC 55 to Aviation Pkwy**

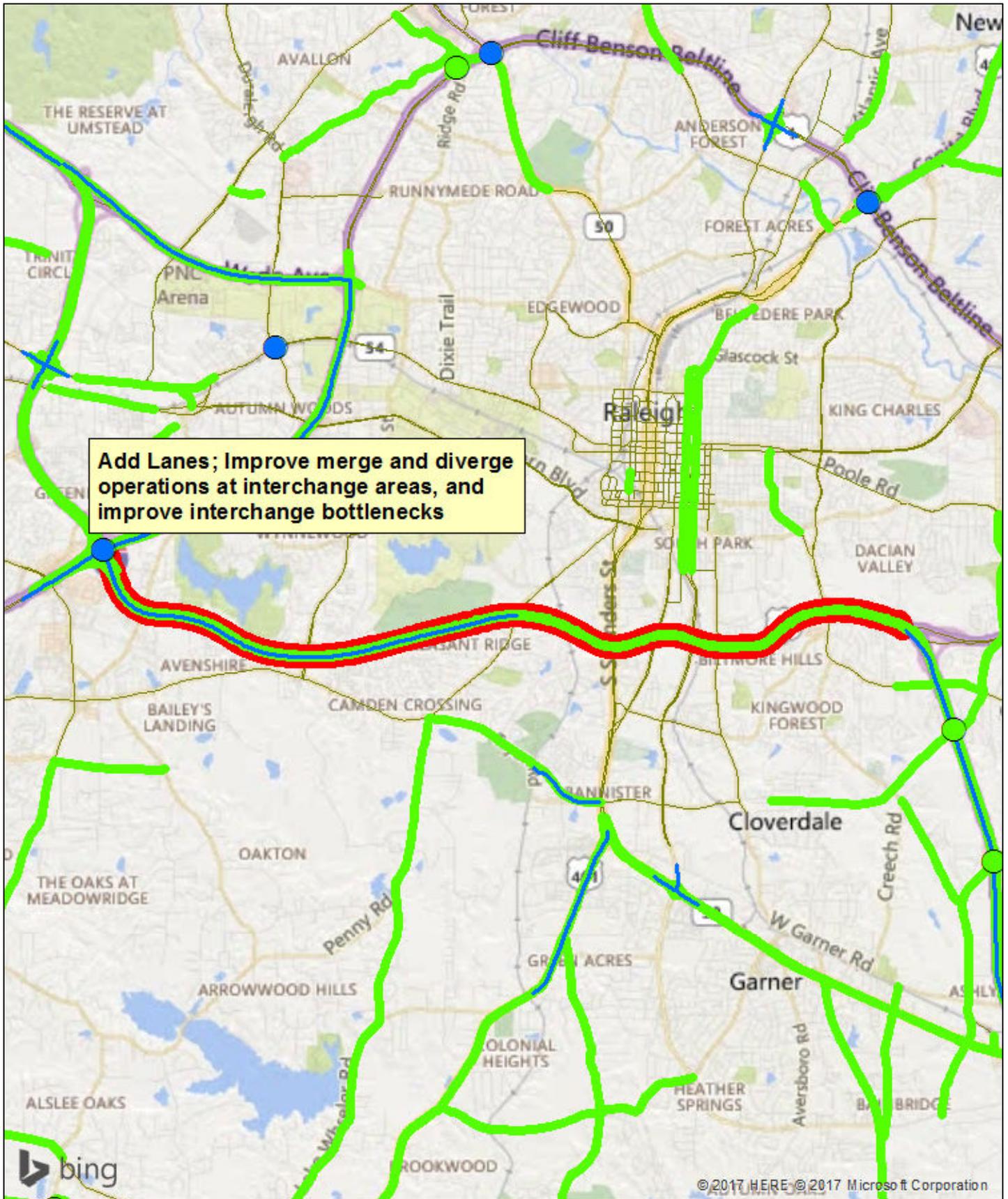
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**Project No. 7**

**I-40: Aviation Pkwy to I-440 / US 64 / US 1**

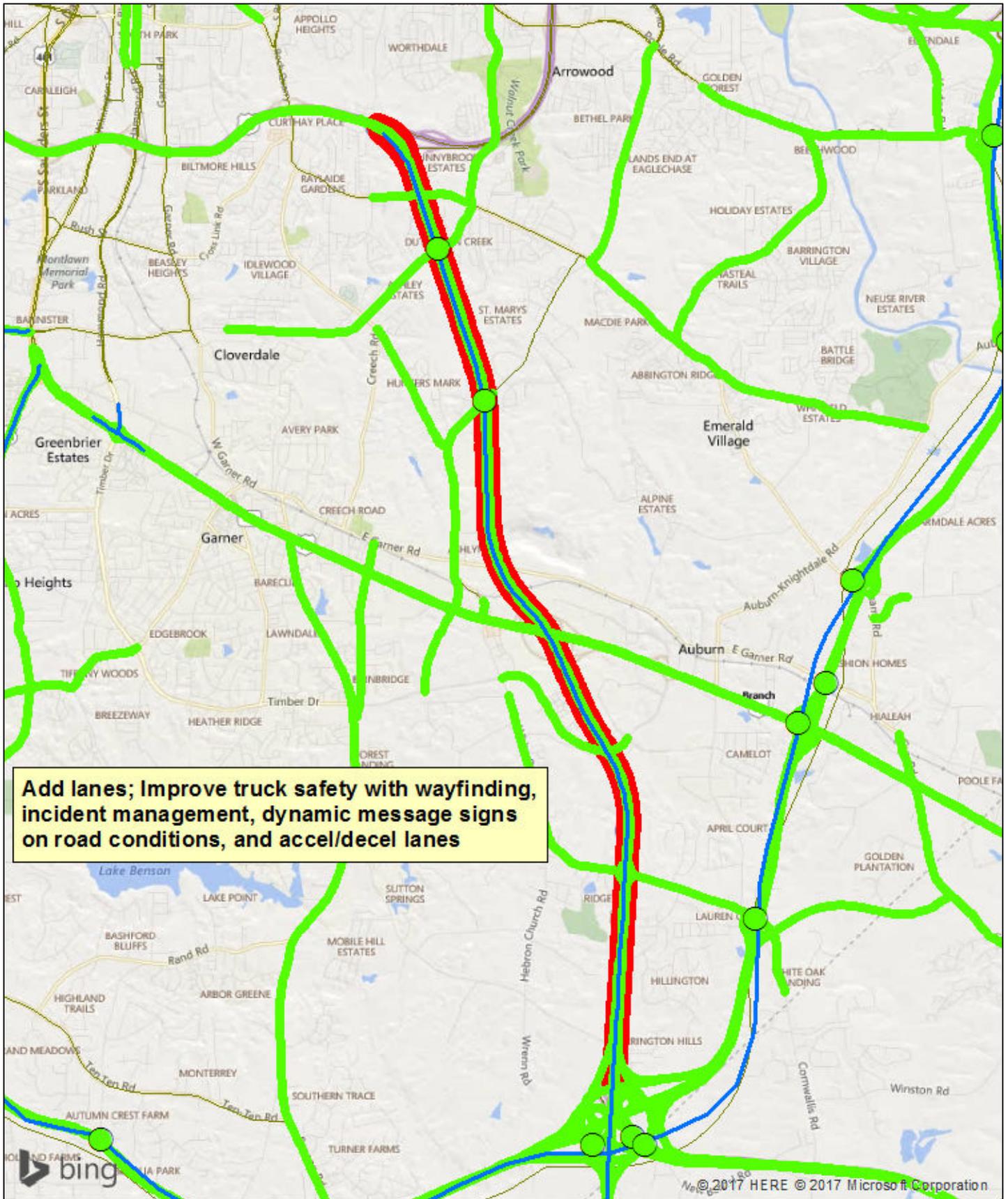
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- STIP Projects
- MTP Projects
- STIP Projects
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**Project No. 8**

**I-40: I-440 / US 64 / US 1 to I-40 / I-440 Split**

- Recommended Freight Project
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- MTP Projects
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- MTP Projects

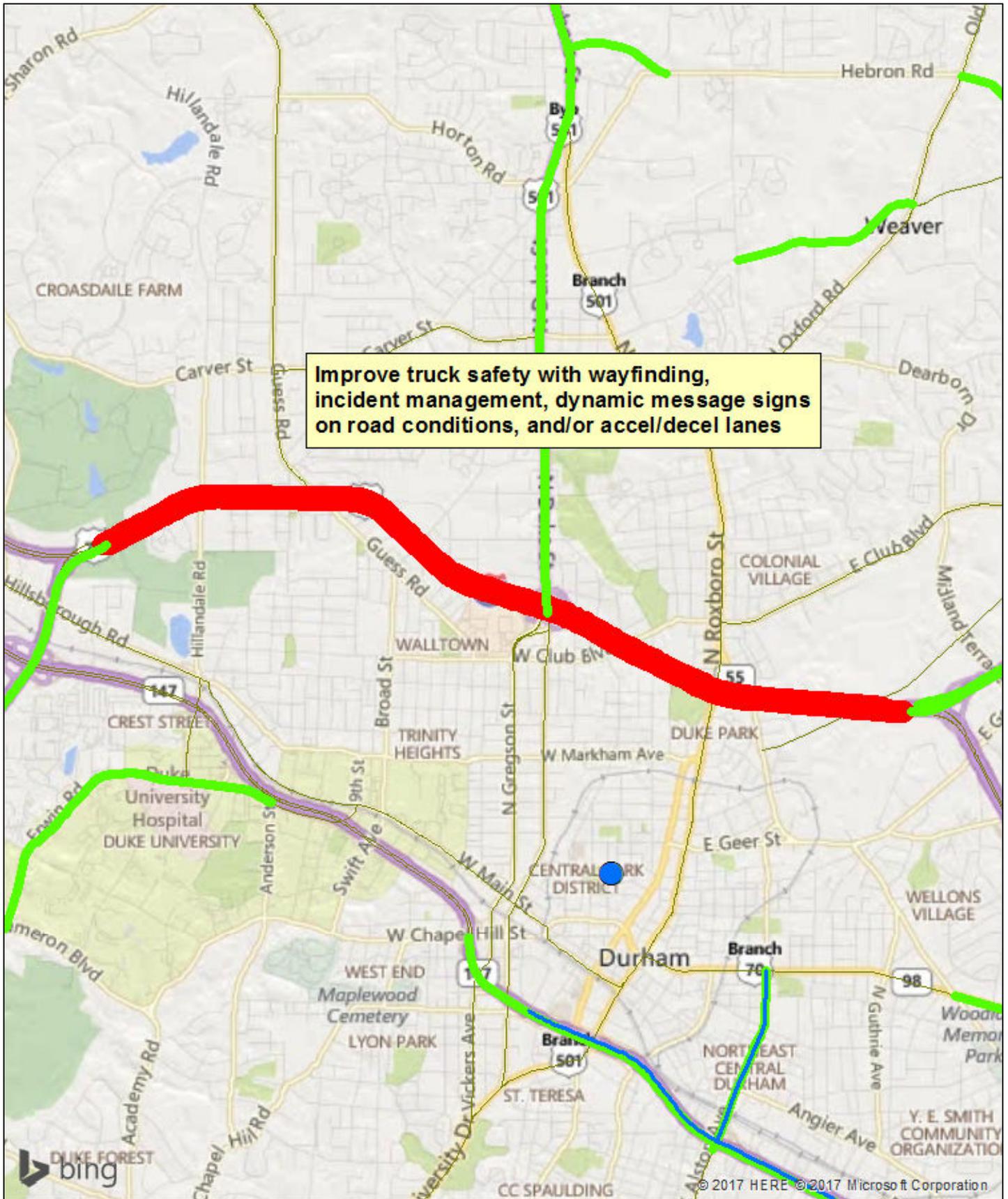


**Project No. 9**

**I-40: I-40 / I-440 Split to US 70 (Clayton Bypass)**

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- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects

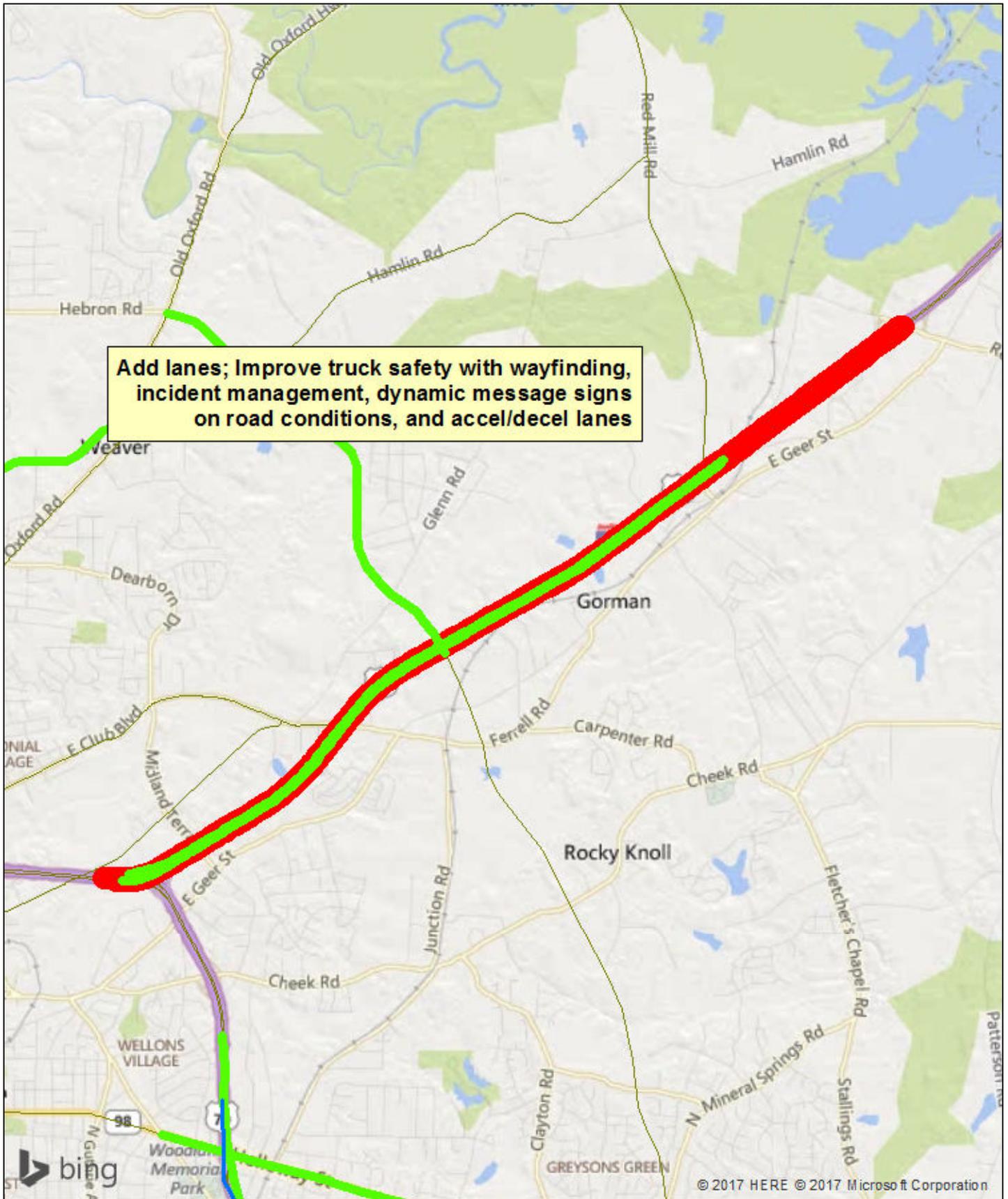




**Project No. 11**

**I-85: US 15-501 to US 70**

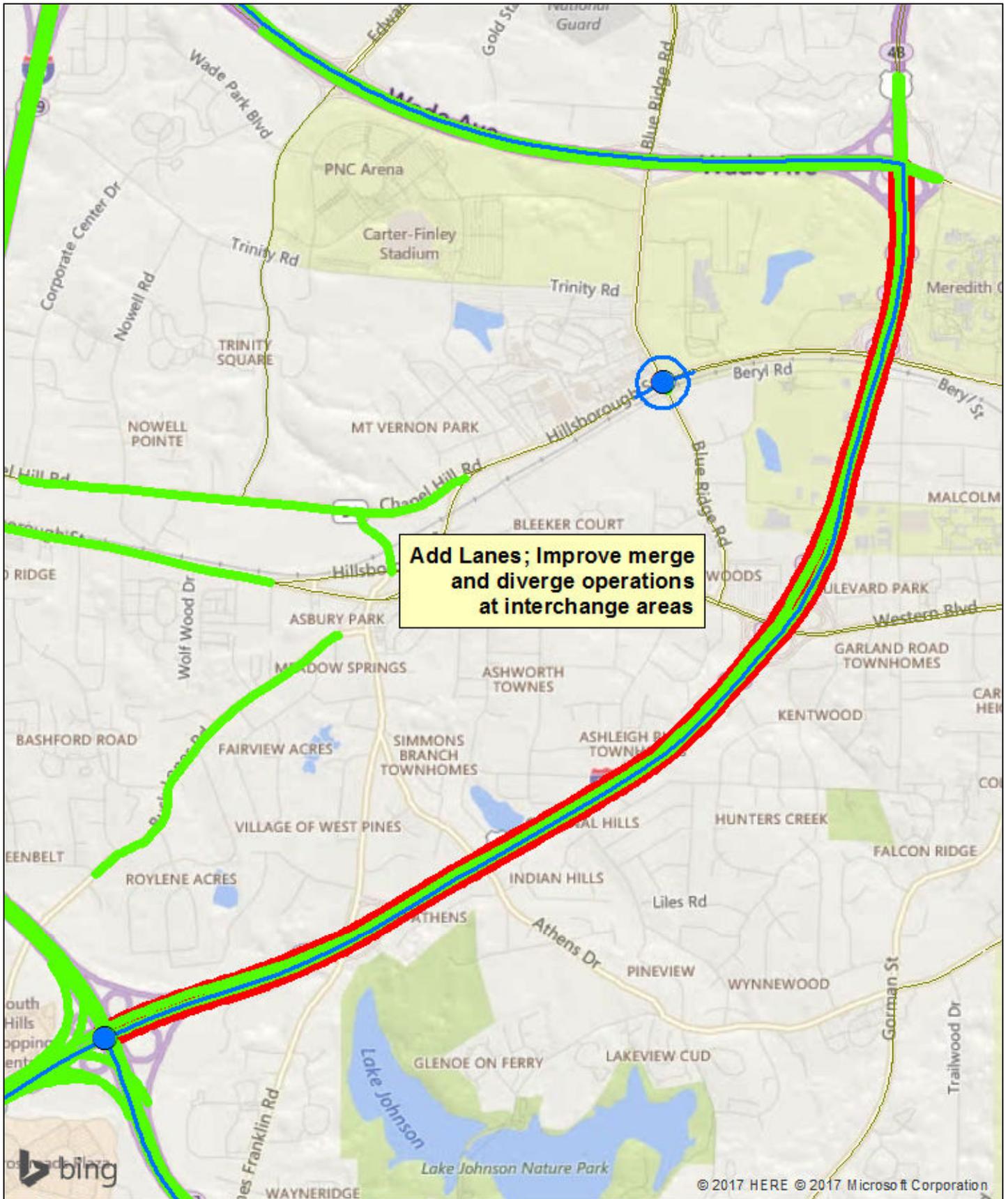
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- STIP Projects
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**Project No. 12**

**I-85: US 70 to Redwood Rd**

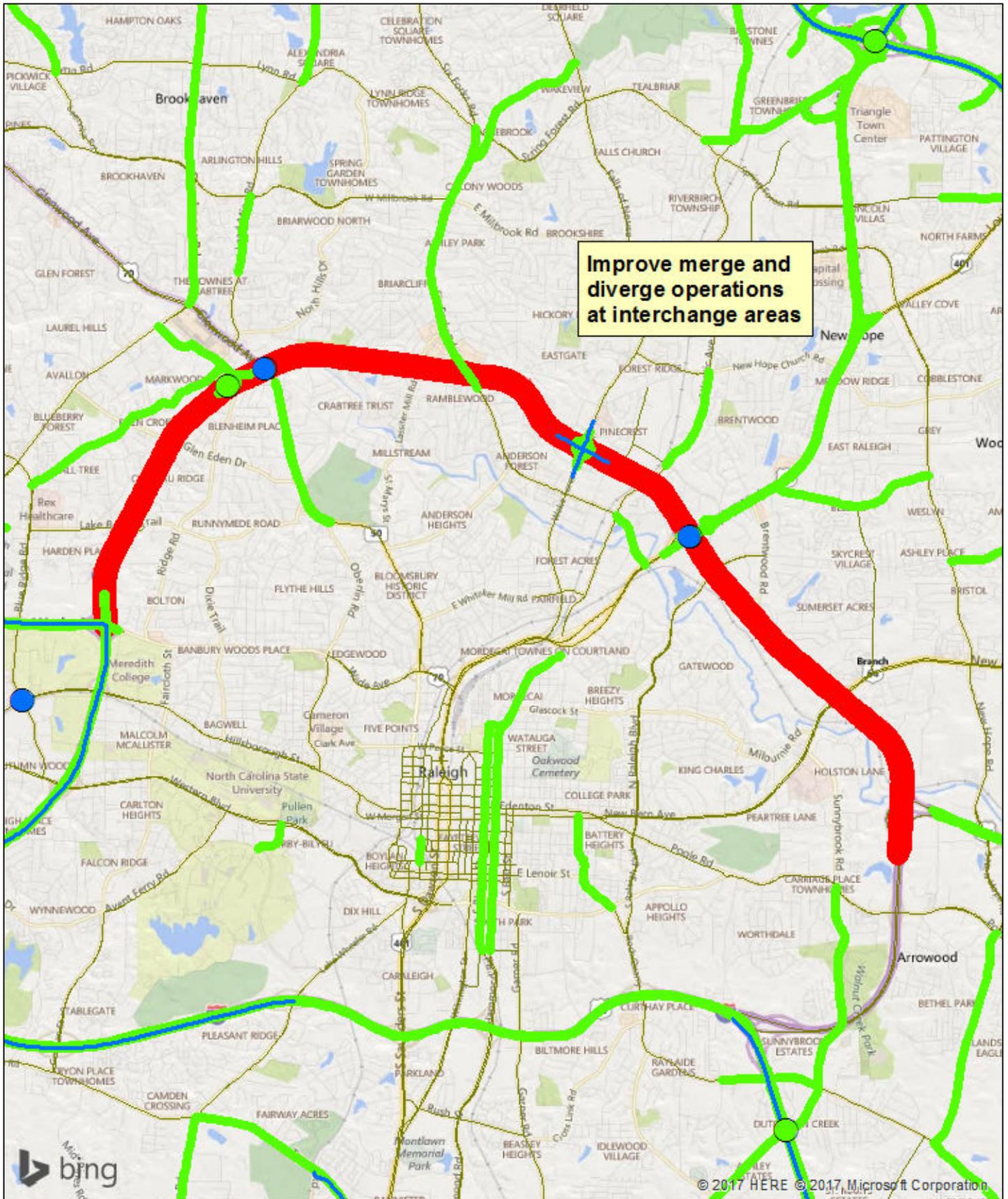
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**Project No. 13**

**I-440: US 64 / US 1 to Wade Ave**

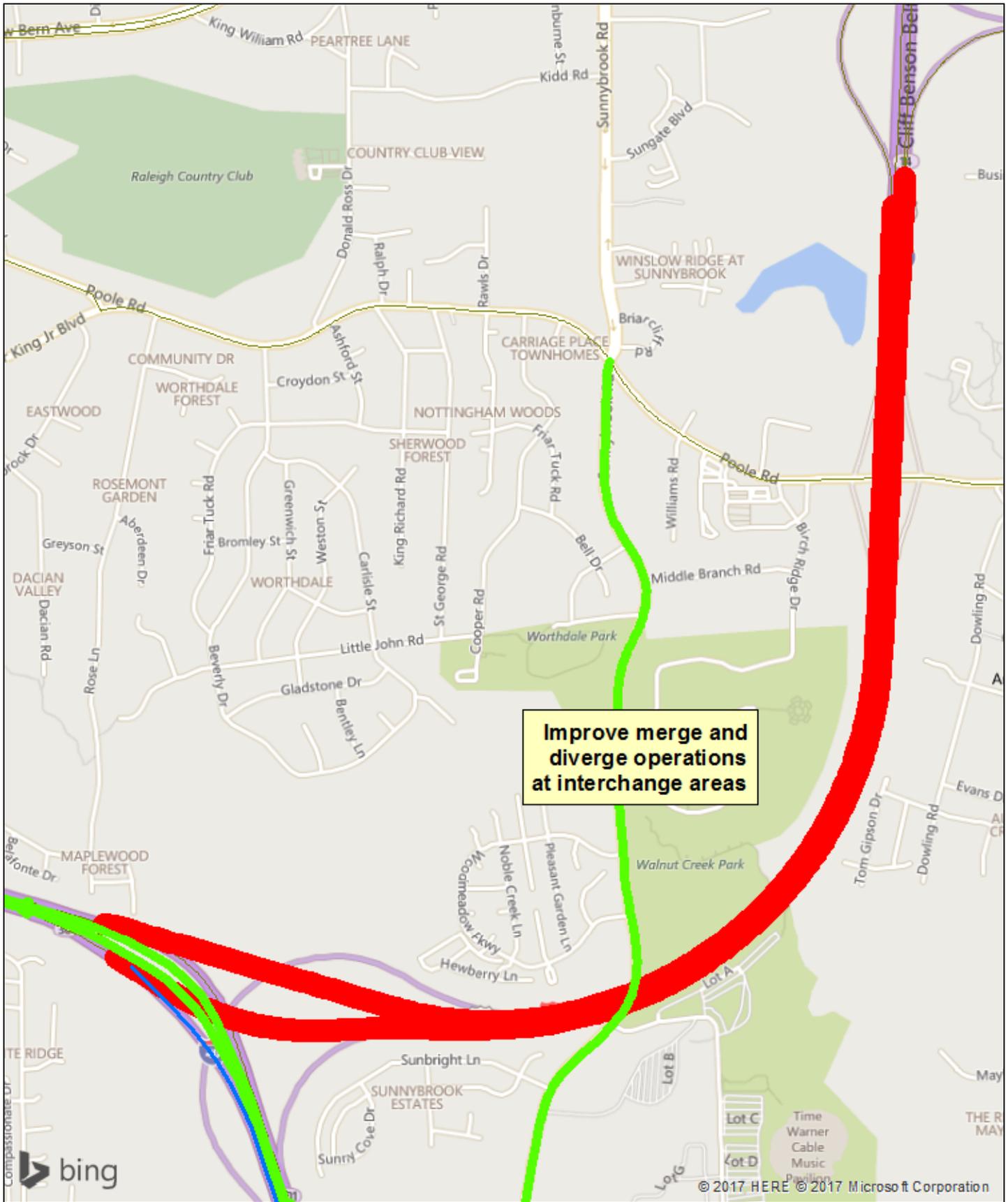
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**Project No. 14**

**I-440: Wade Ave to I-495 / US 64 / US 264**

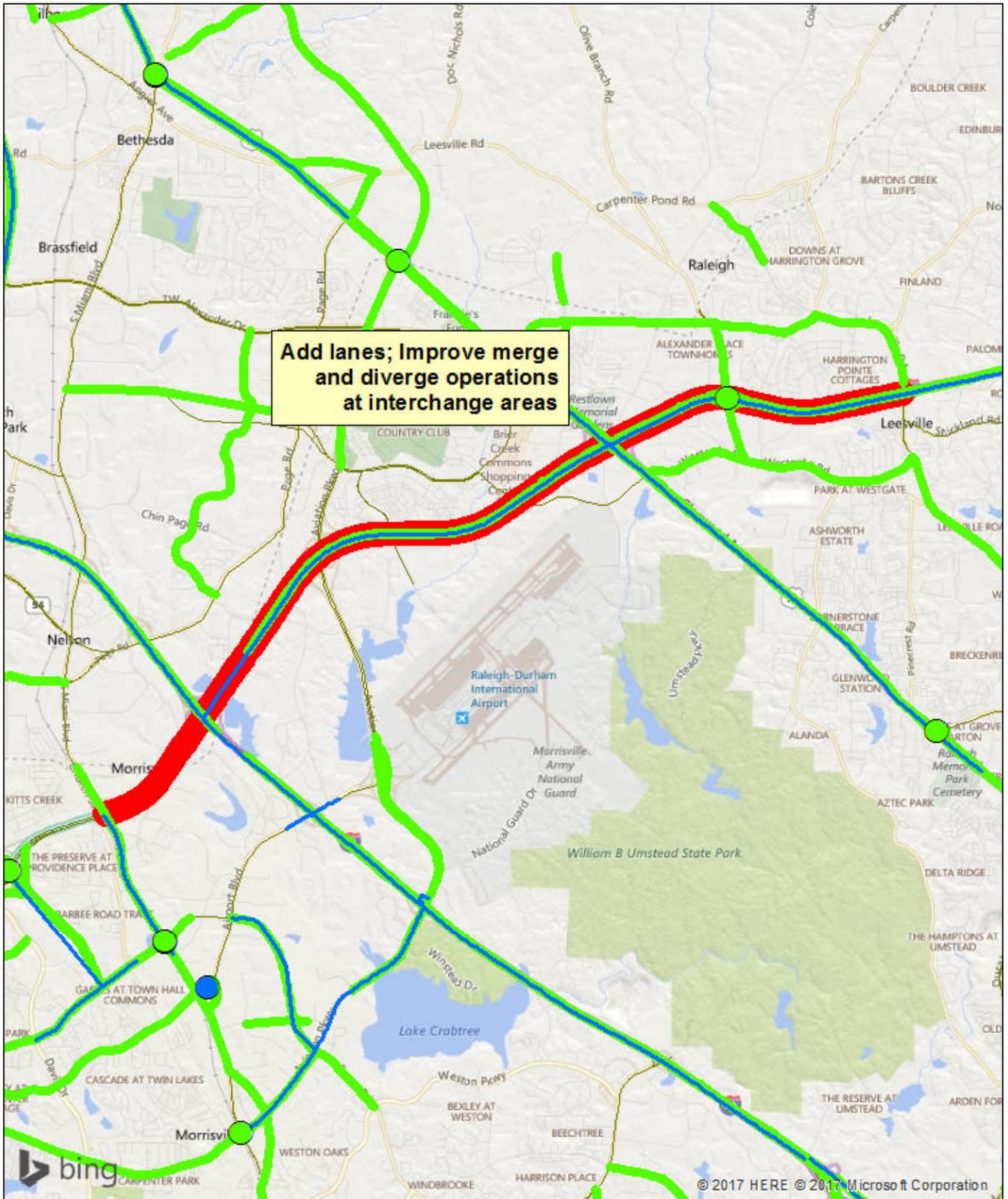
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**Project No. 15**

**I-440: I-495 / US 64 / US 264 to I-40**

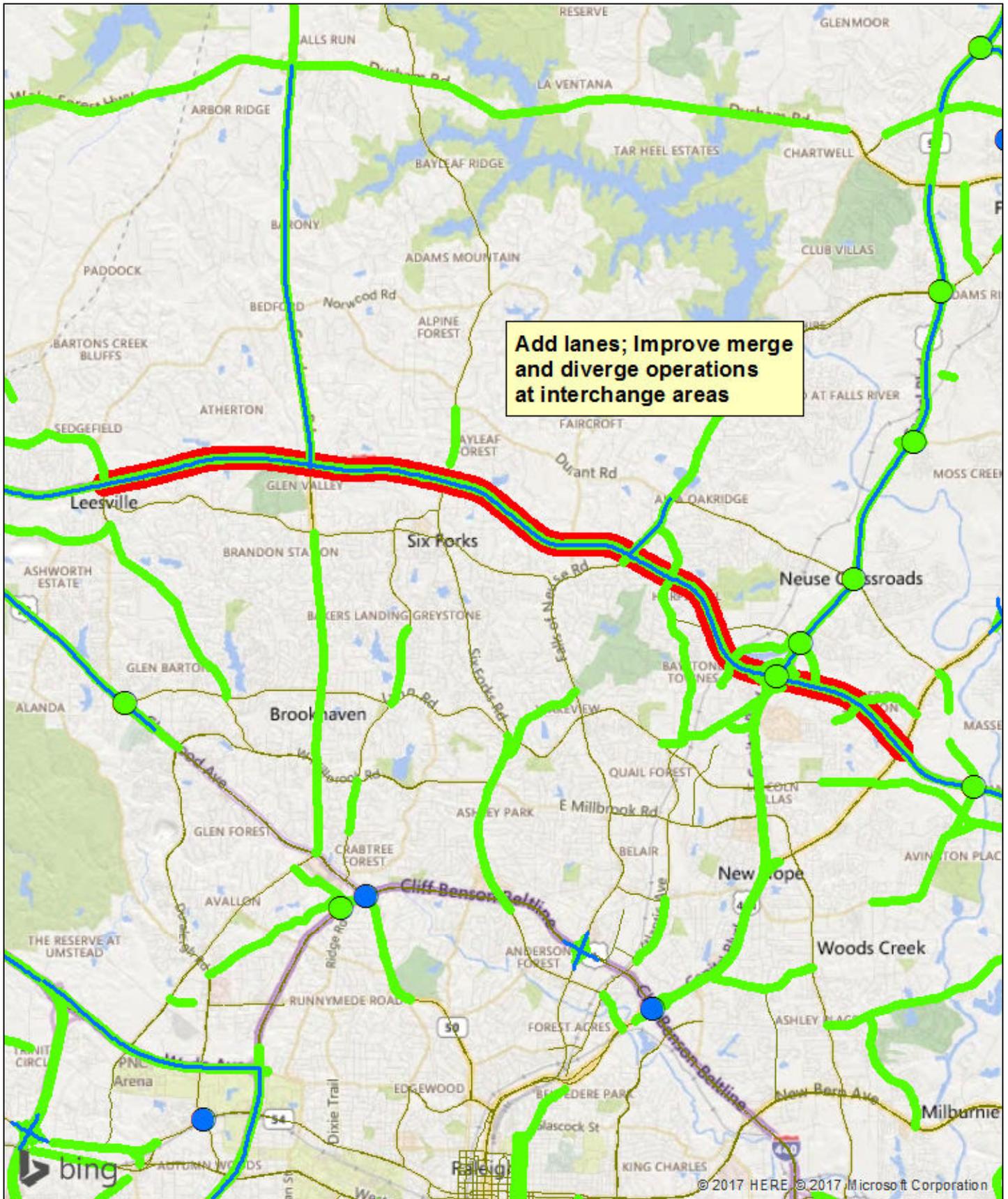
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**Project No. 16**

**I-540: NC 54 to Leesville Rd**

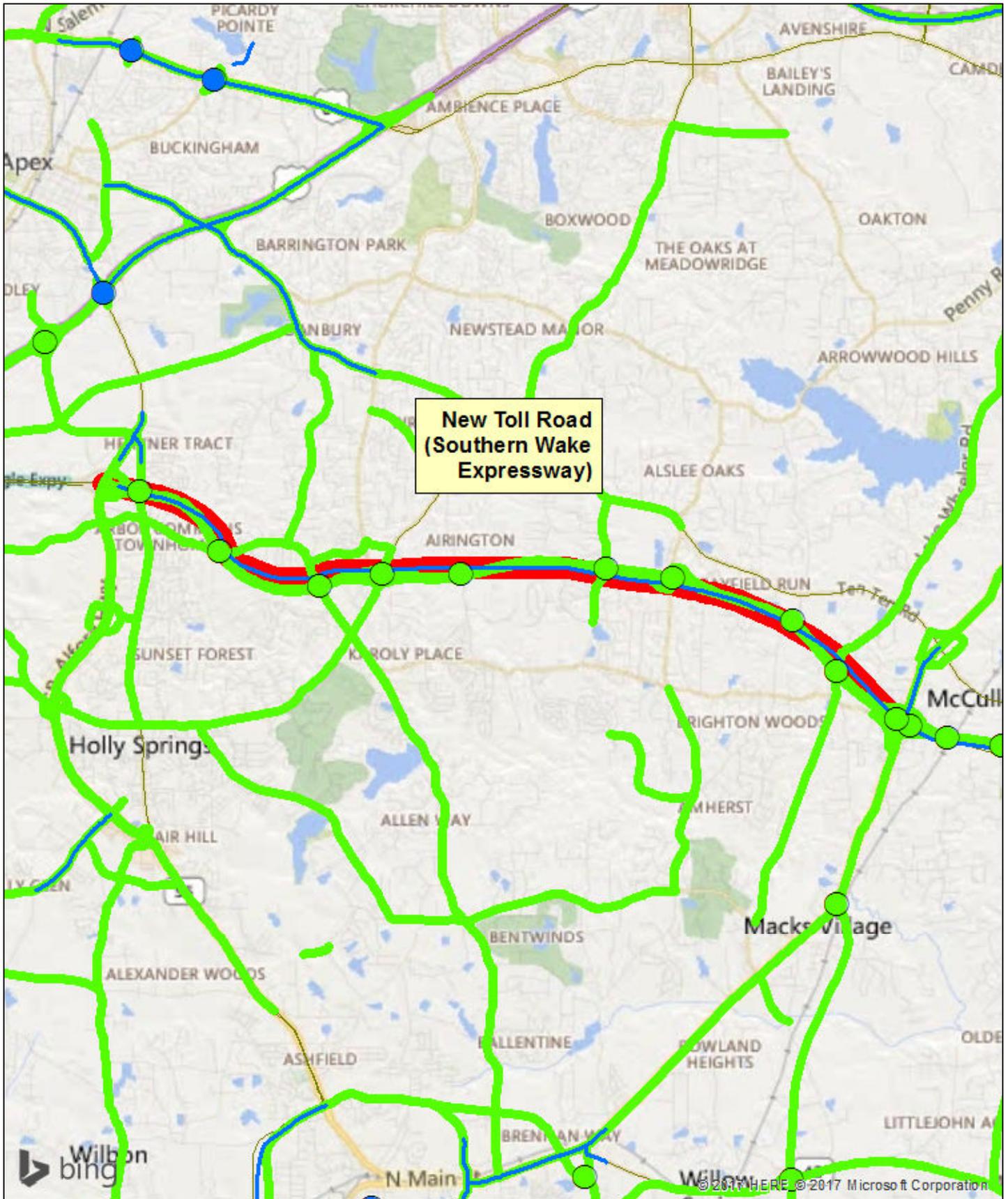
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**Project No. 17**

**I-540: Leesville Rd to US 401 (North)**

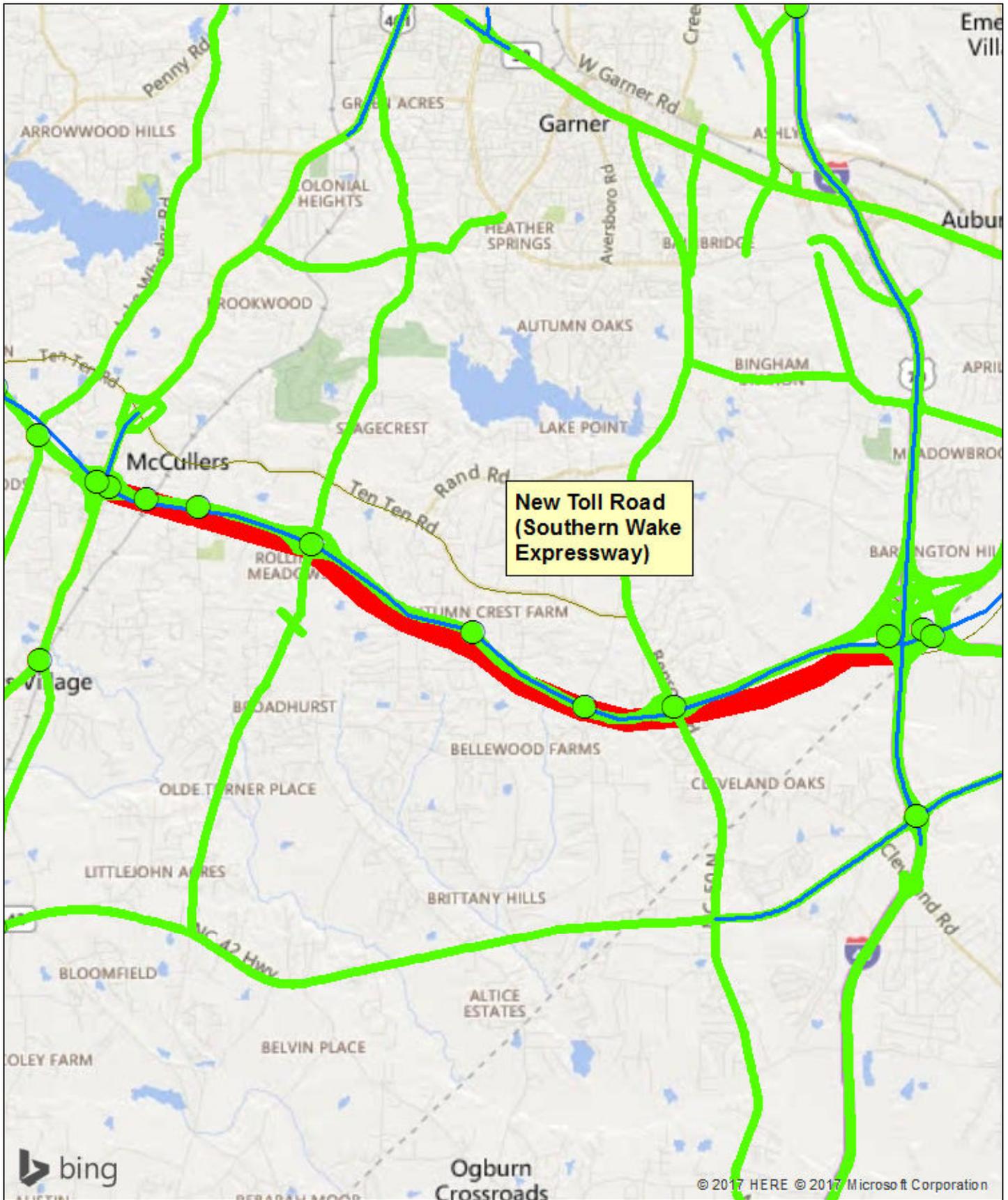
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**Project No. 18**

**NC 540: NC 55 to US 401 (South)**

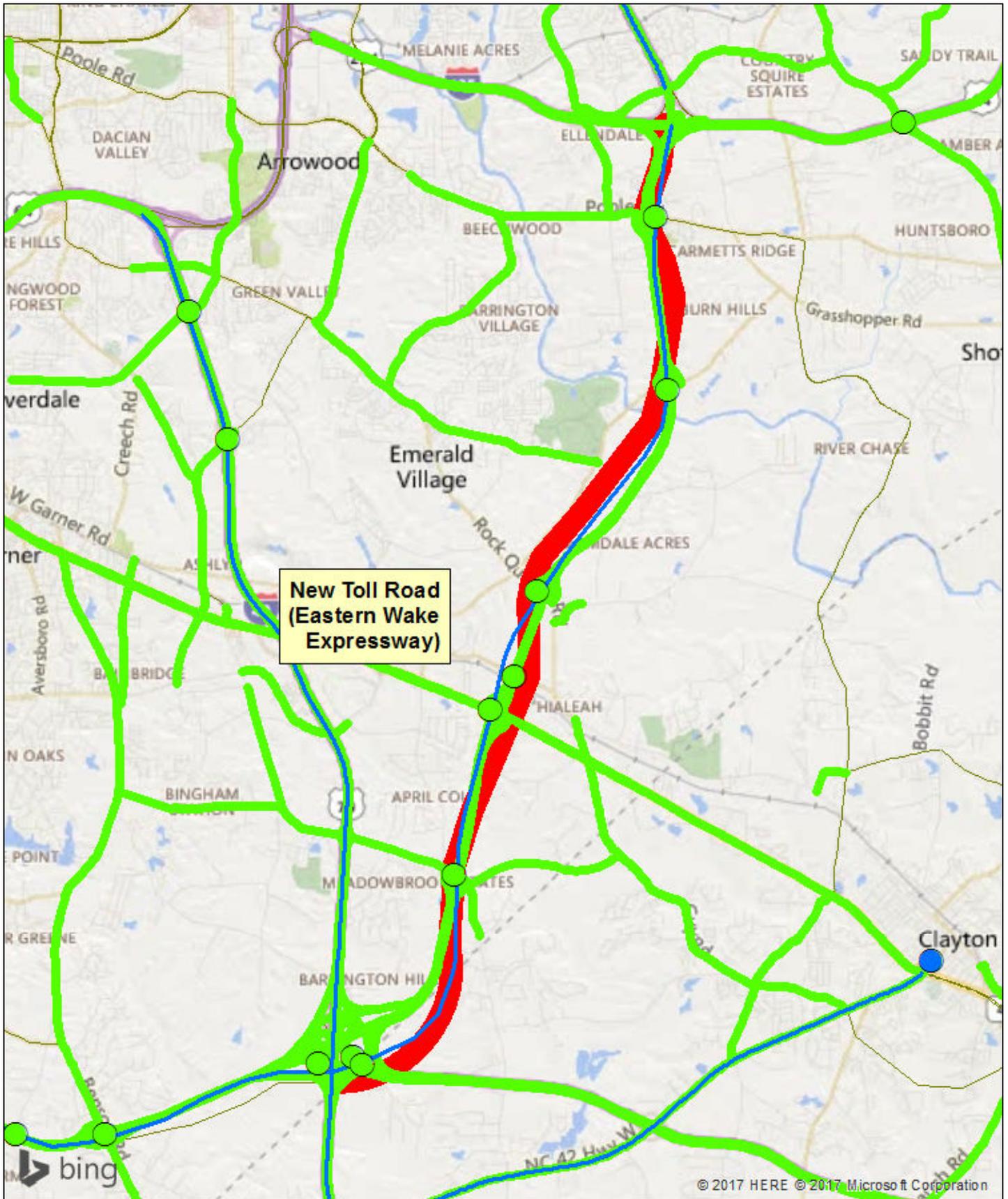
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- STIP Projects
- MTP Projects



Project No. 19

NC 540: US 401 (South) to I-40

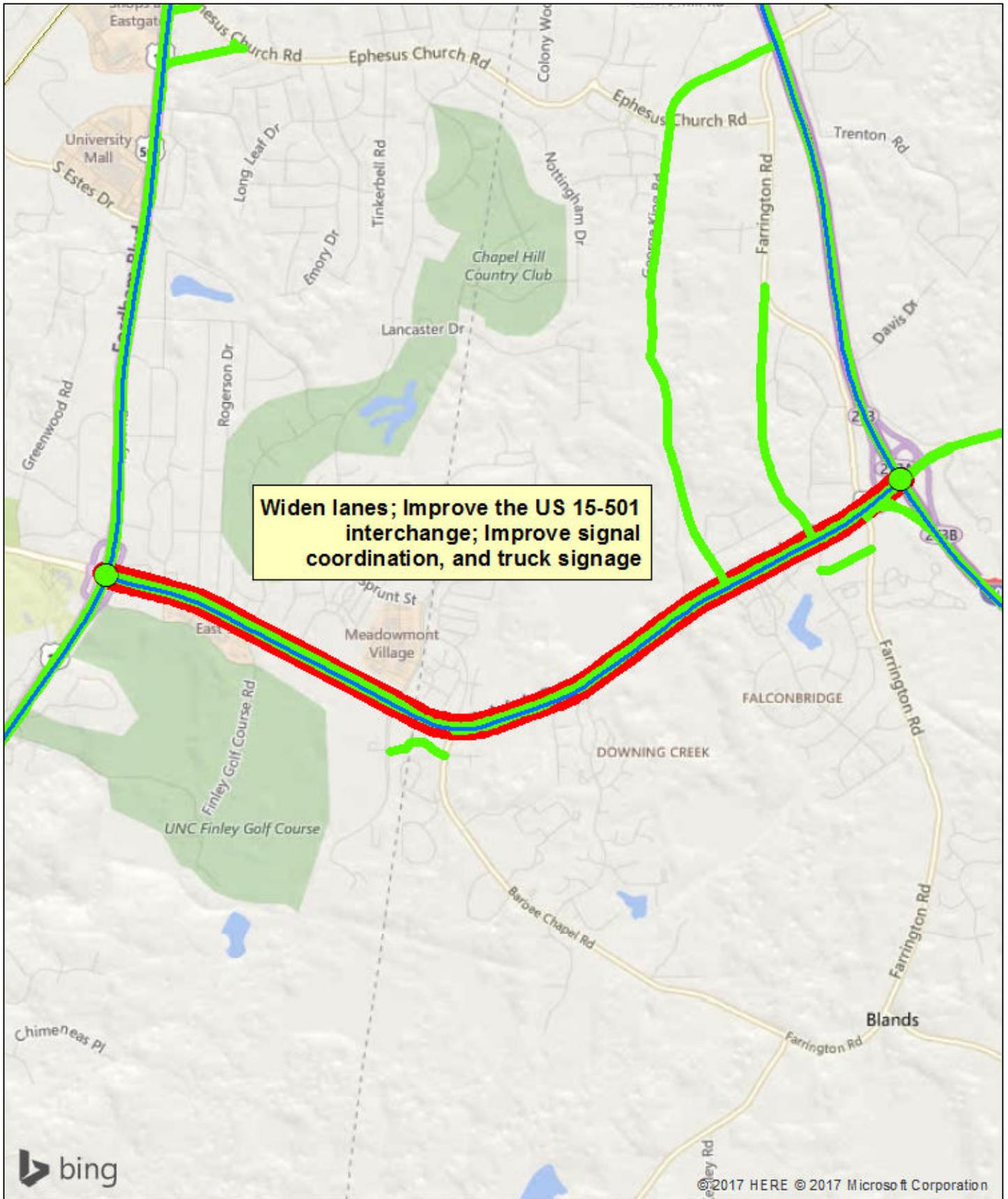
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**Project No. 20**

**NC 540: I-40 to US 64 / US 264**

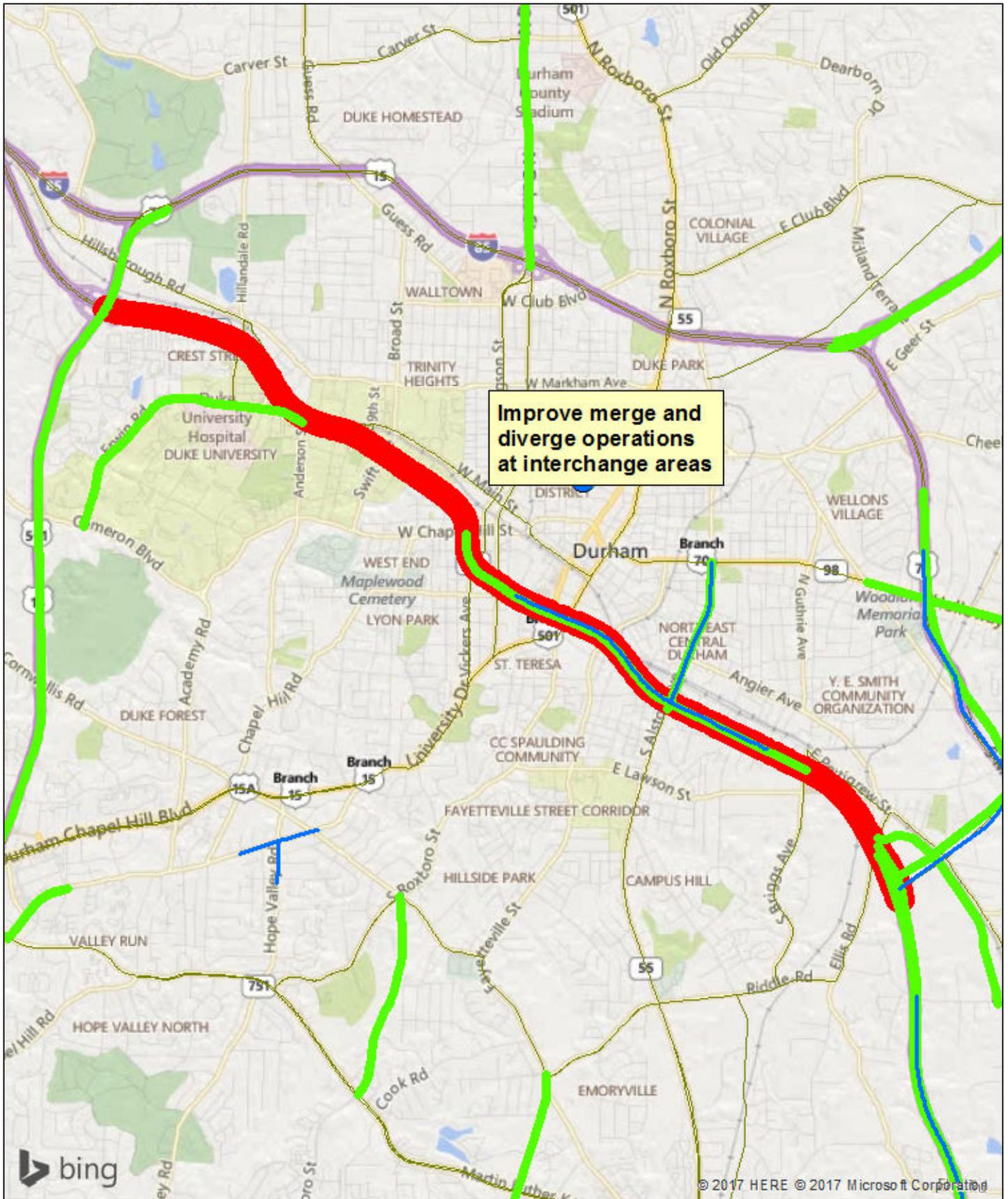
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- MTP Projects
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**Project No. 21**

**NC 54: US 15-501 to I-40**

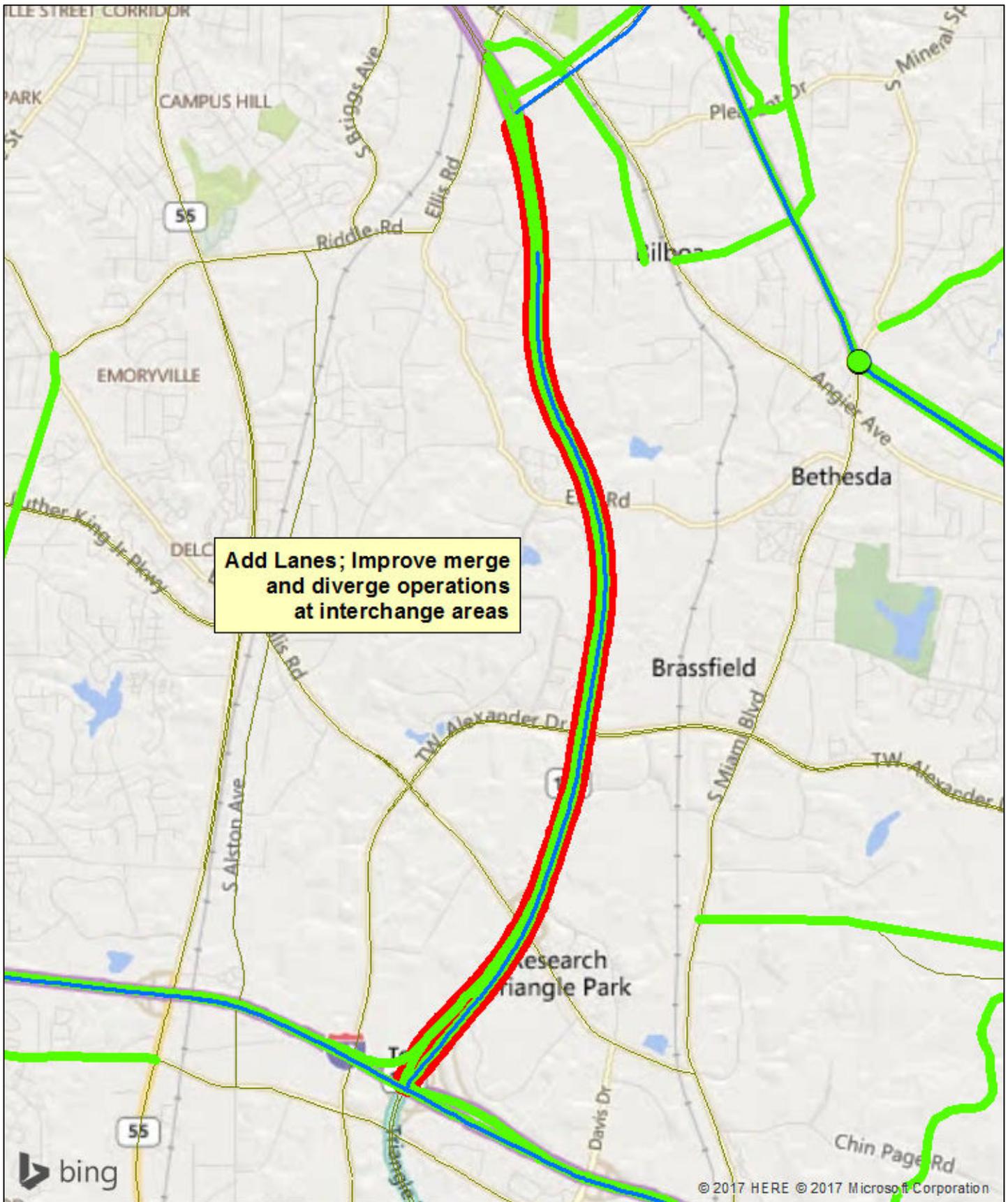
- Recommended Freight Project
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- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 22**

**NC 147: US 15-501 to East End Connector (Future I-885)**

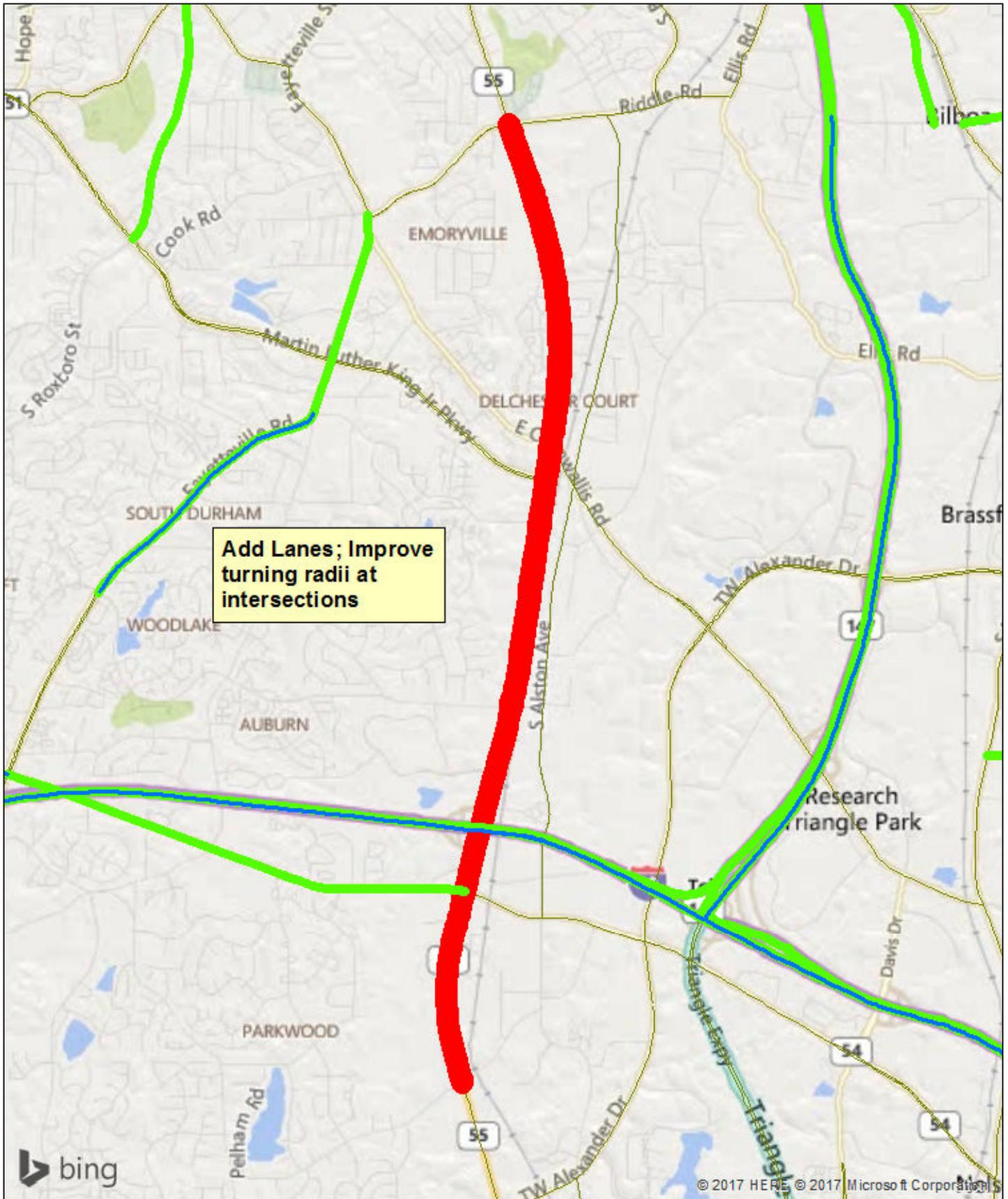
- Recommended Freight Project
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**Project No. 23**

**NC 147: East End Connector (Future I-885) to I-40**

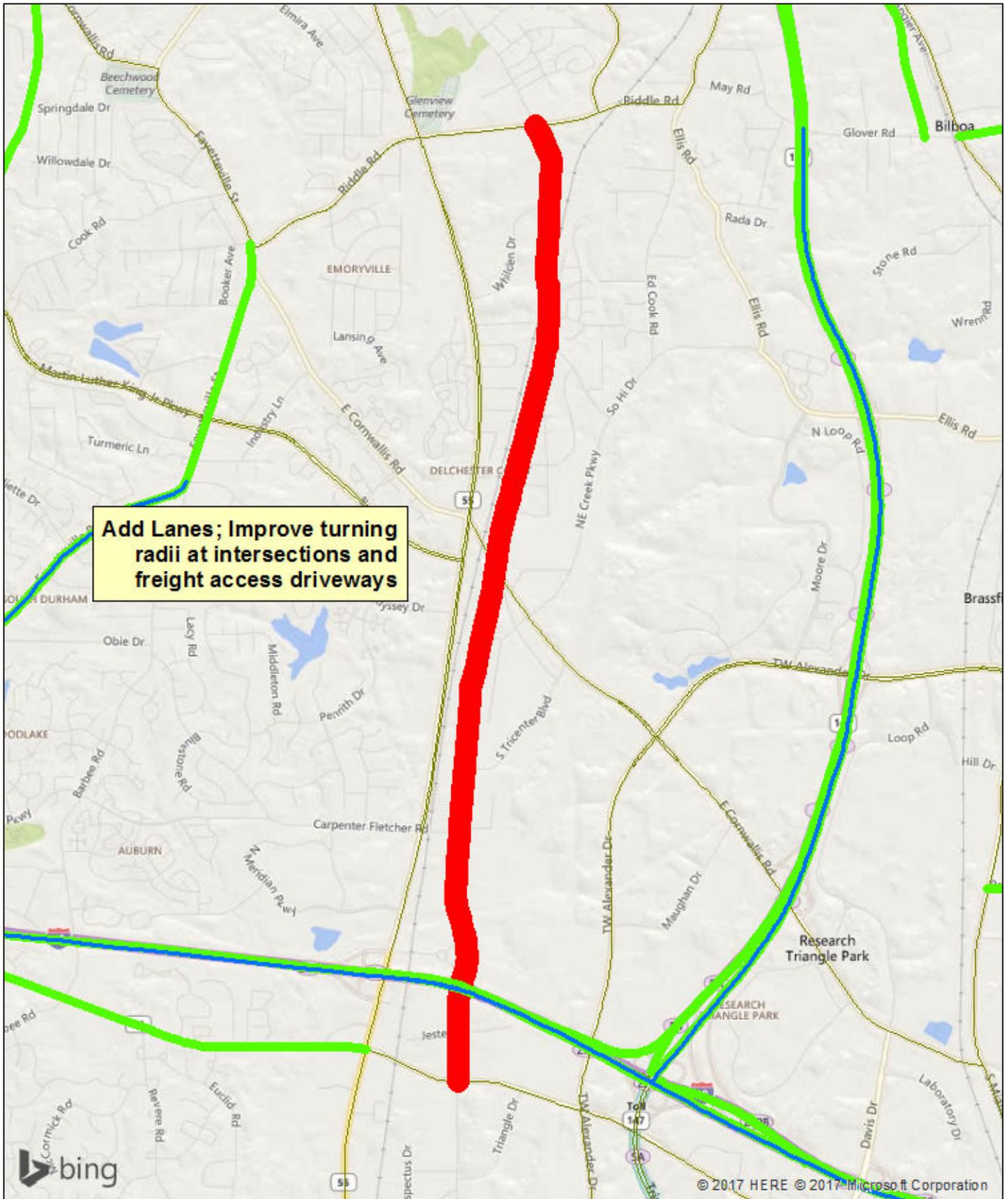
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- MTP Projects
- STIP Projects
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**Project No. 24**

**NC 55: Sedwick Rd to Riddle Rd**

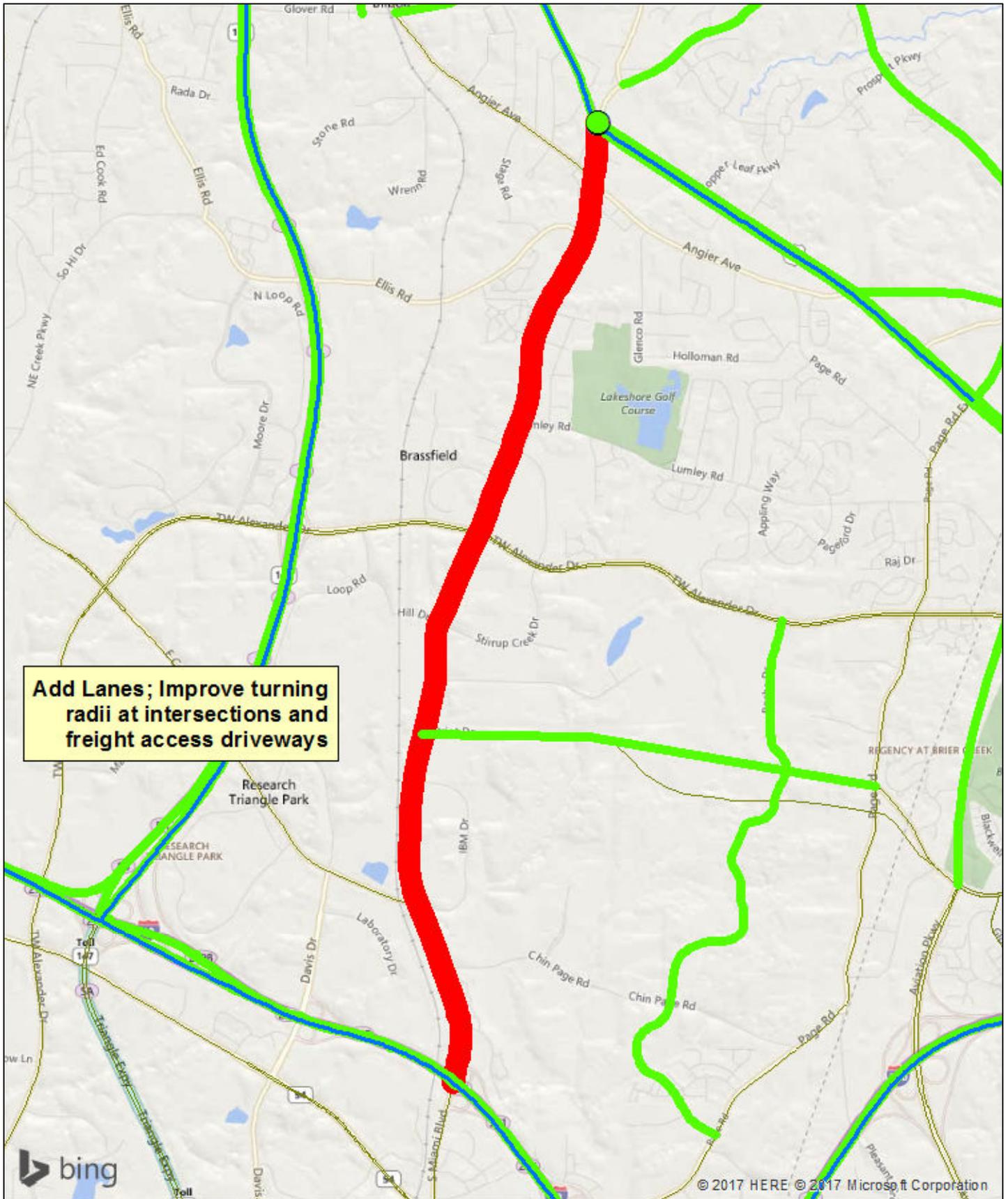
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- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 25**

**S. Alston Ave: NC 54 to Riddle Rd**

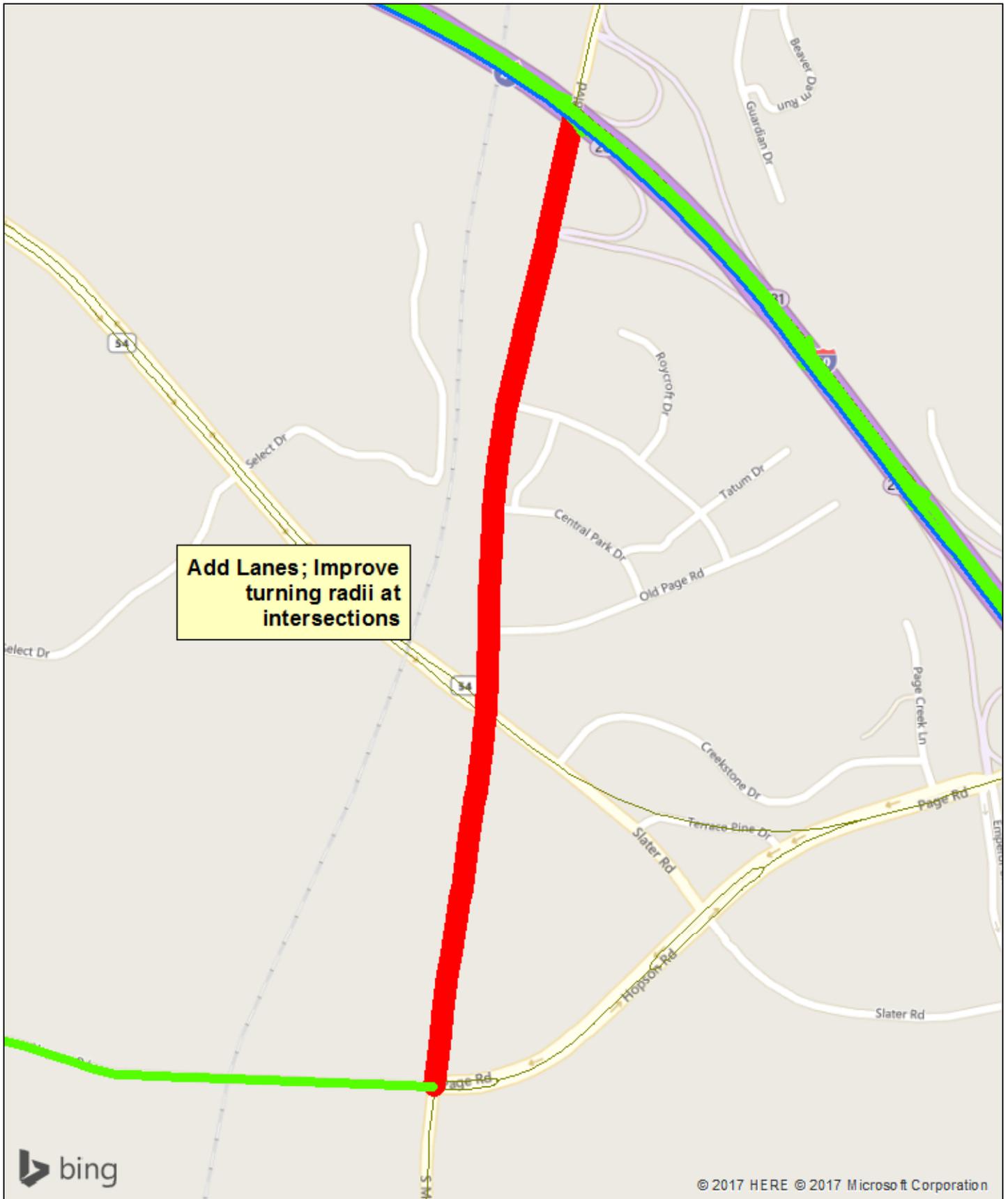
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- STIP Projects
- MTP Projects



**Project No. 26**

**S Miami Blvd: I-40 to US 70**

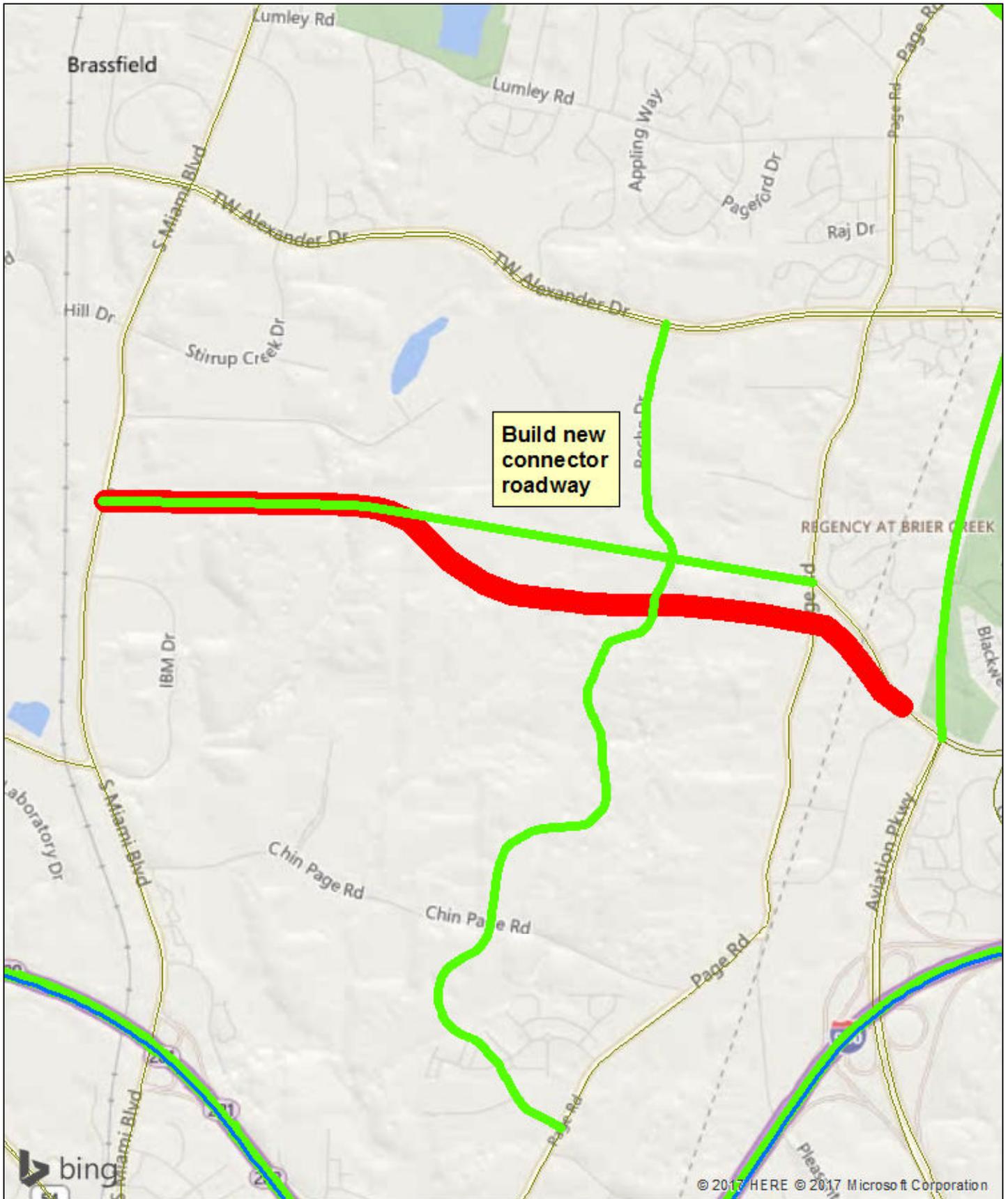
- Recommended Freight Project
- STIP Projects
- MTP Projects



**Project No. 27**

**S Miami Blvd: Hopson Rd to I-40**

- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects

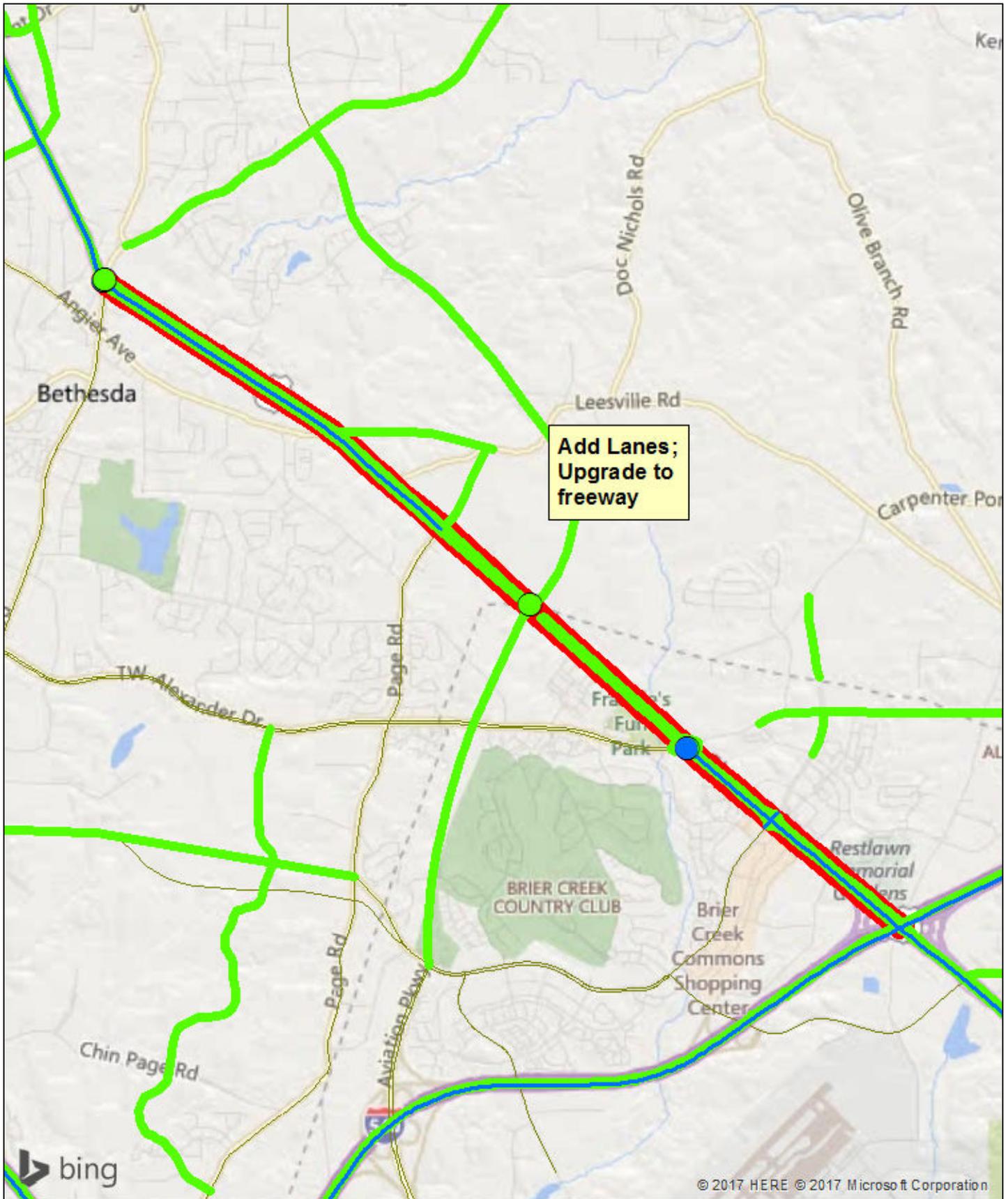


**Project No. 28**

**Patriot Dr / Globe Rd Extension: Page Rd to S Miami Blvd**

- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects

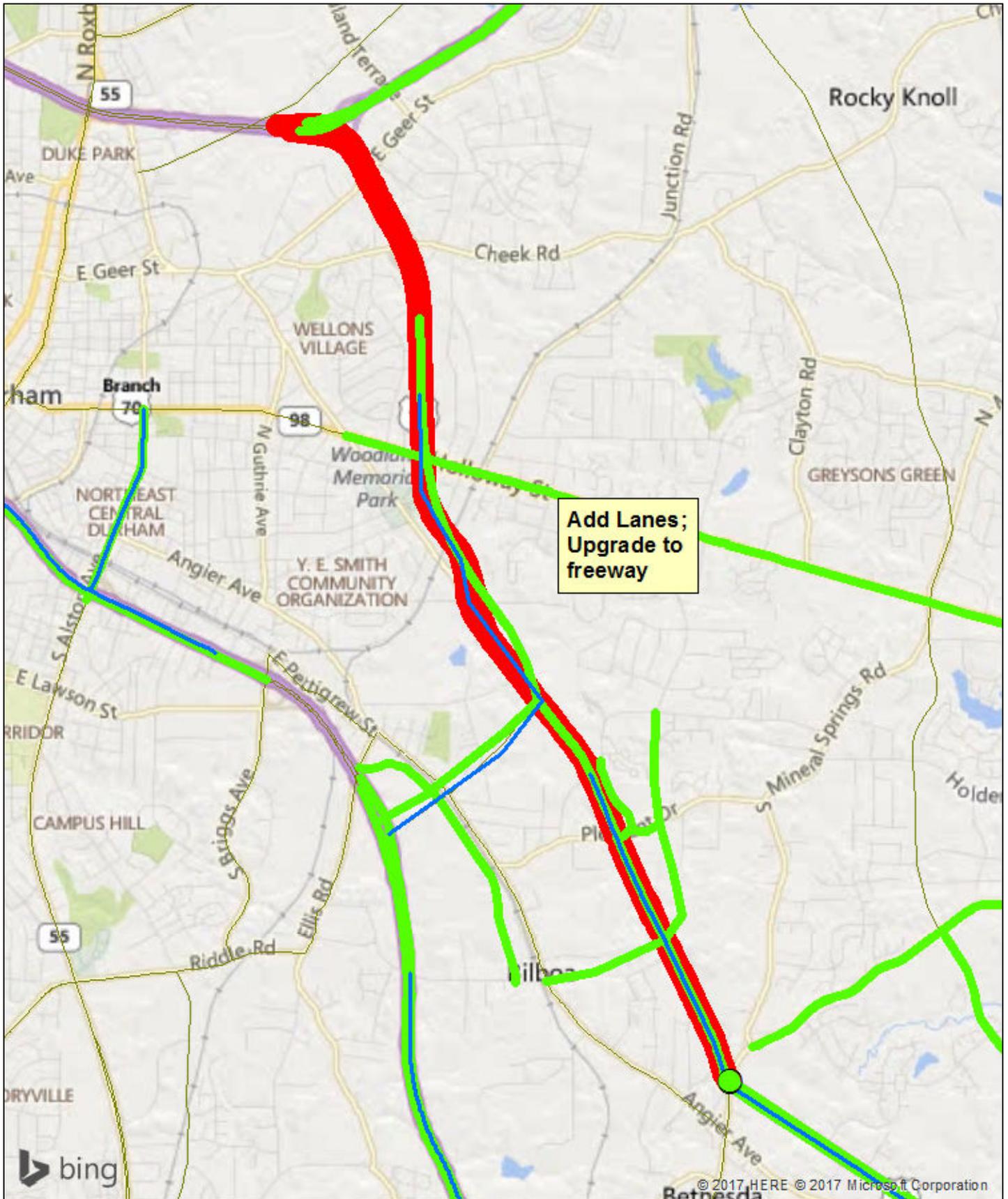




**Project No. 30**

**US 70: I-540 to S Miami Blvd**

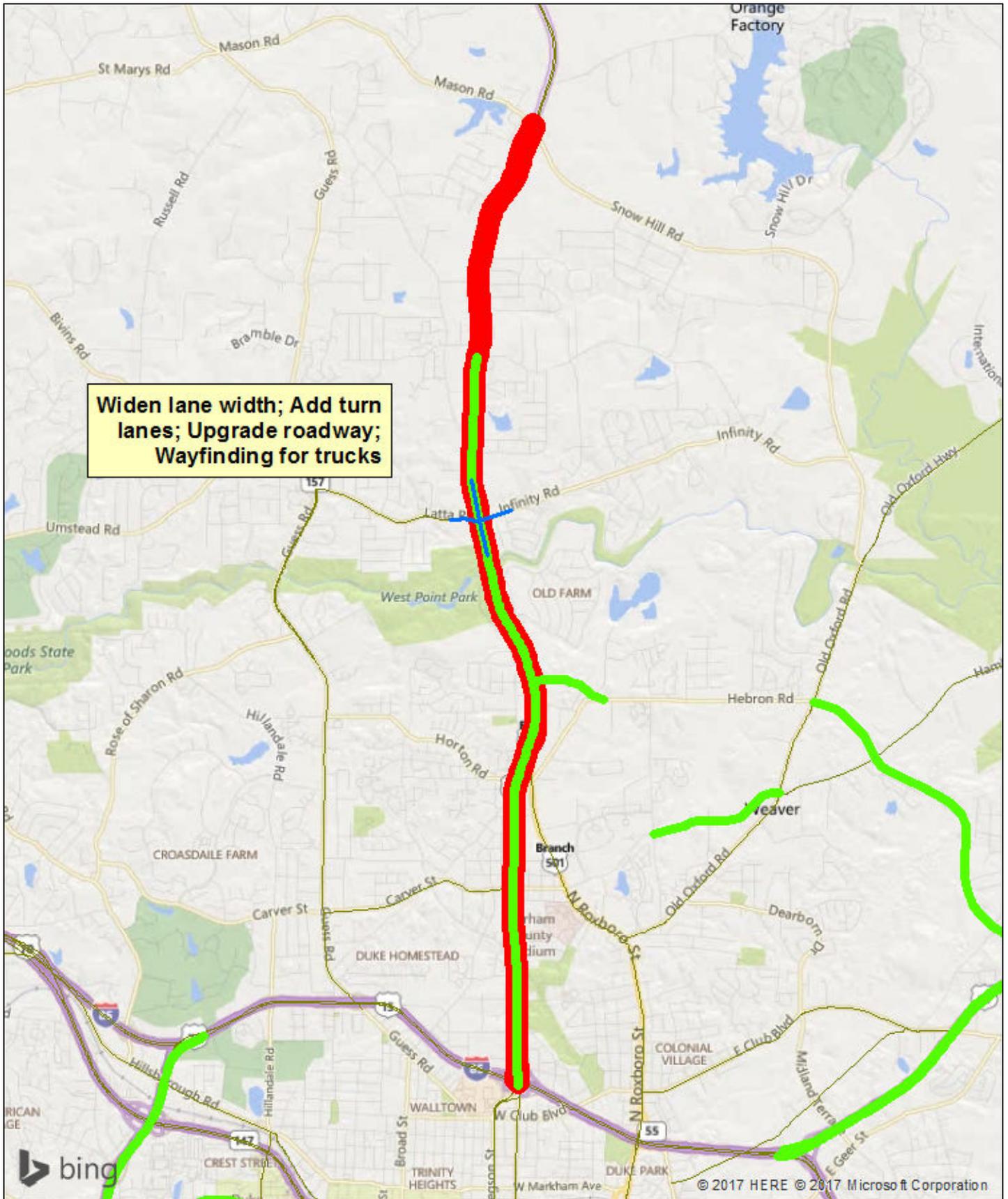
- █ Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 31**

**US 70: S Miami Blvd to I-85**

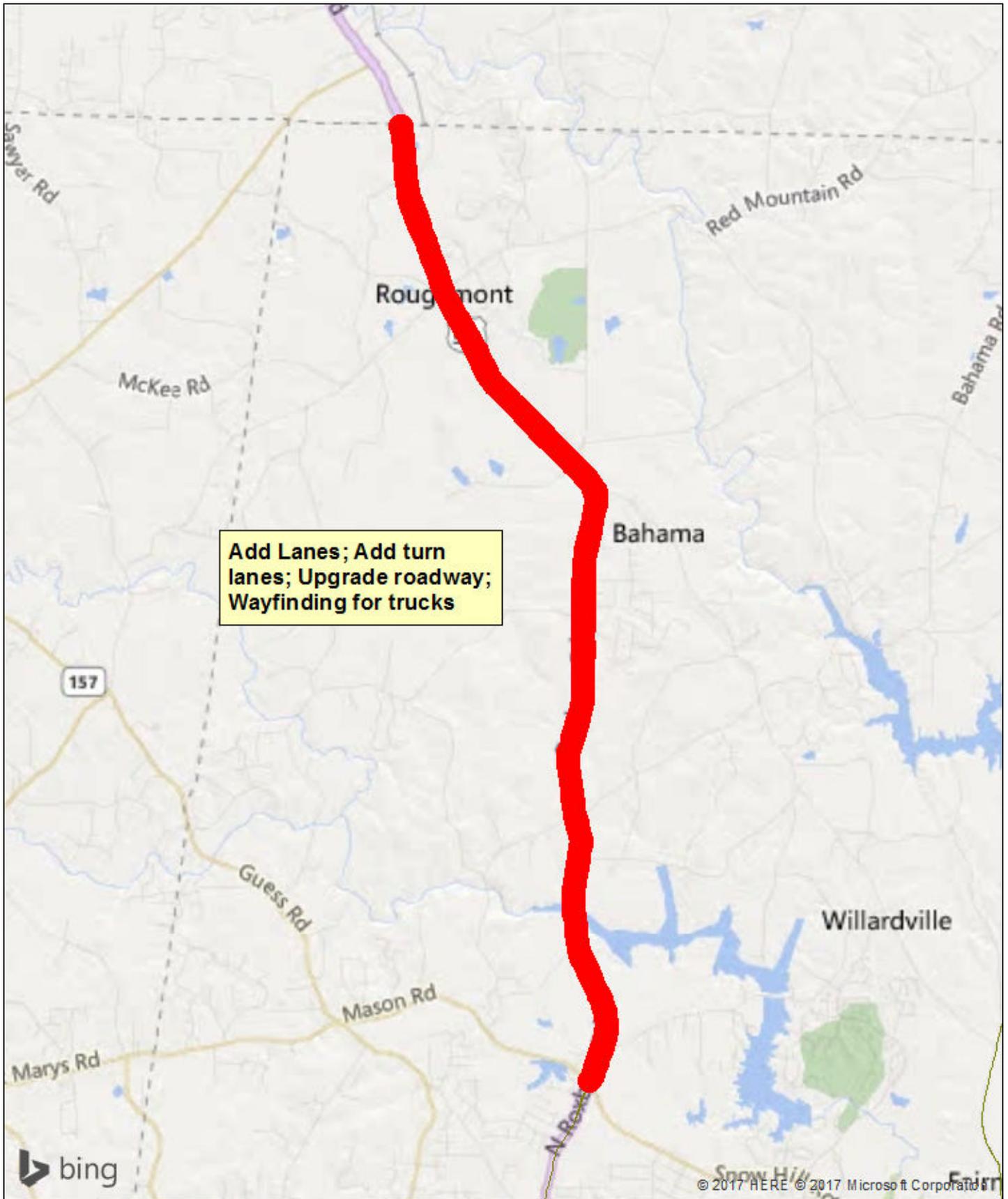
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 32**

**US 501 (N Duke St / N Roxboro St): I-85 to Snow Hill Rd / Mason Rd**

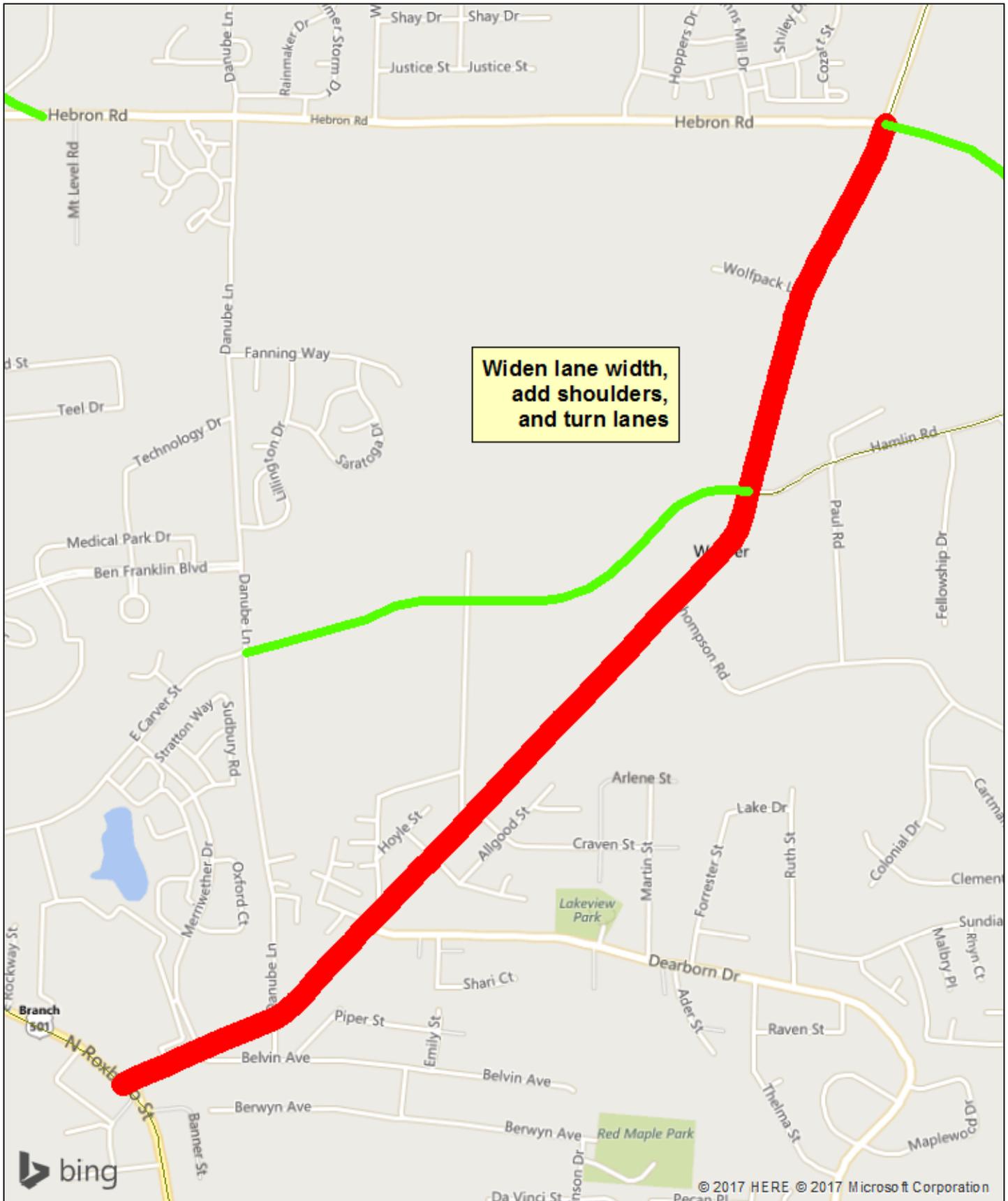
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 33**

**US 501 (N Roxboro Rd): Snow Hill Rd / Mason Rd to Durham County Line**

- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 34**

**Old Oxford Rd: N Roxboro St to Hebron Rd**

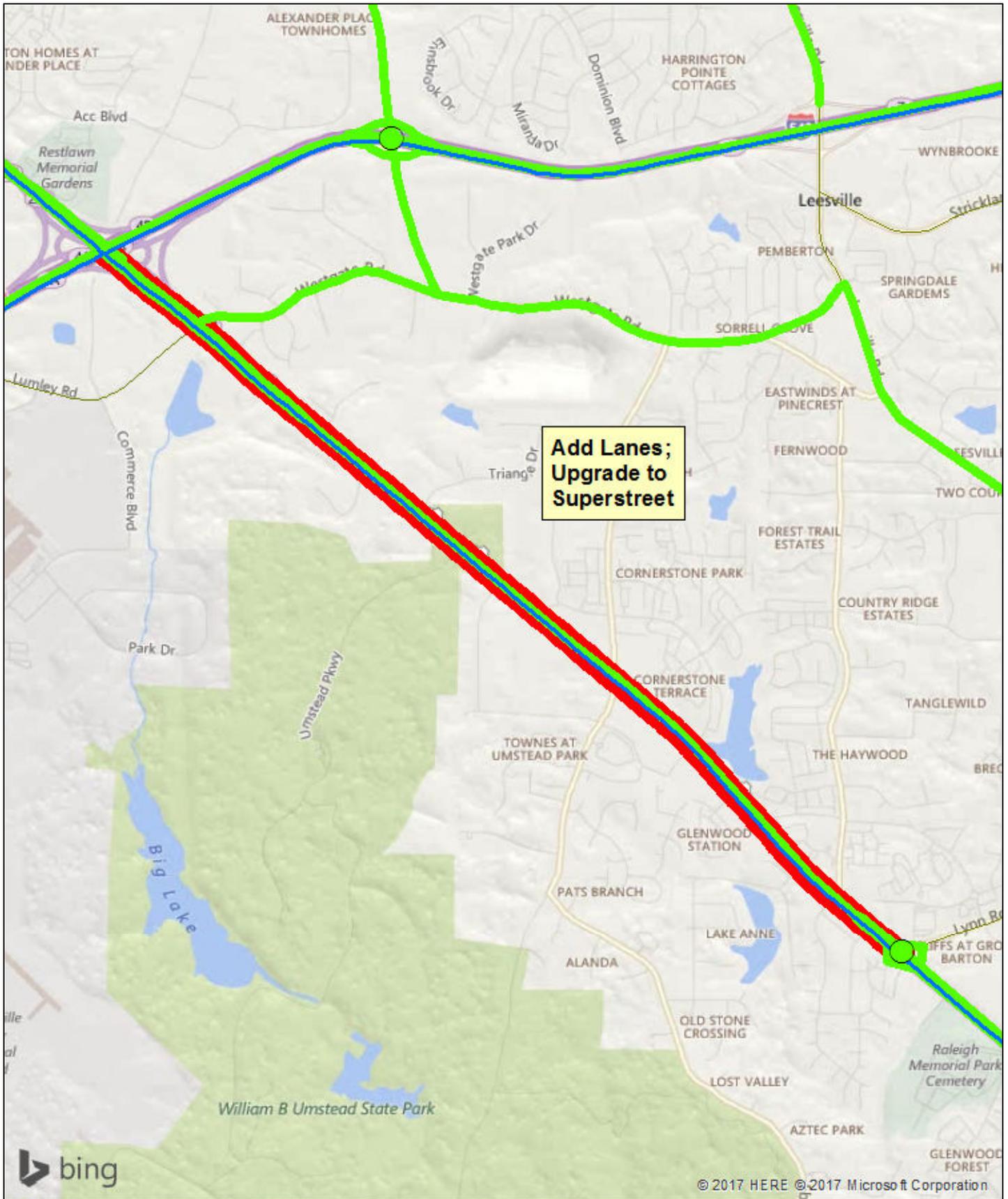
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 35**

**Hamlin Rd: Old Oxford Rd to Red Mill Rd**

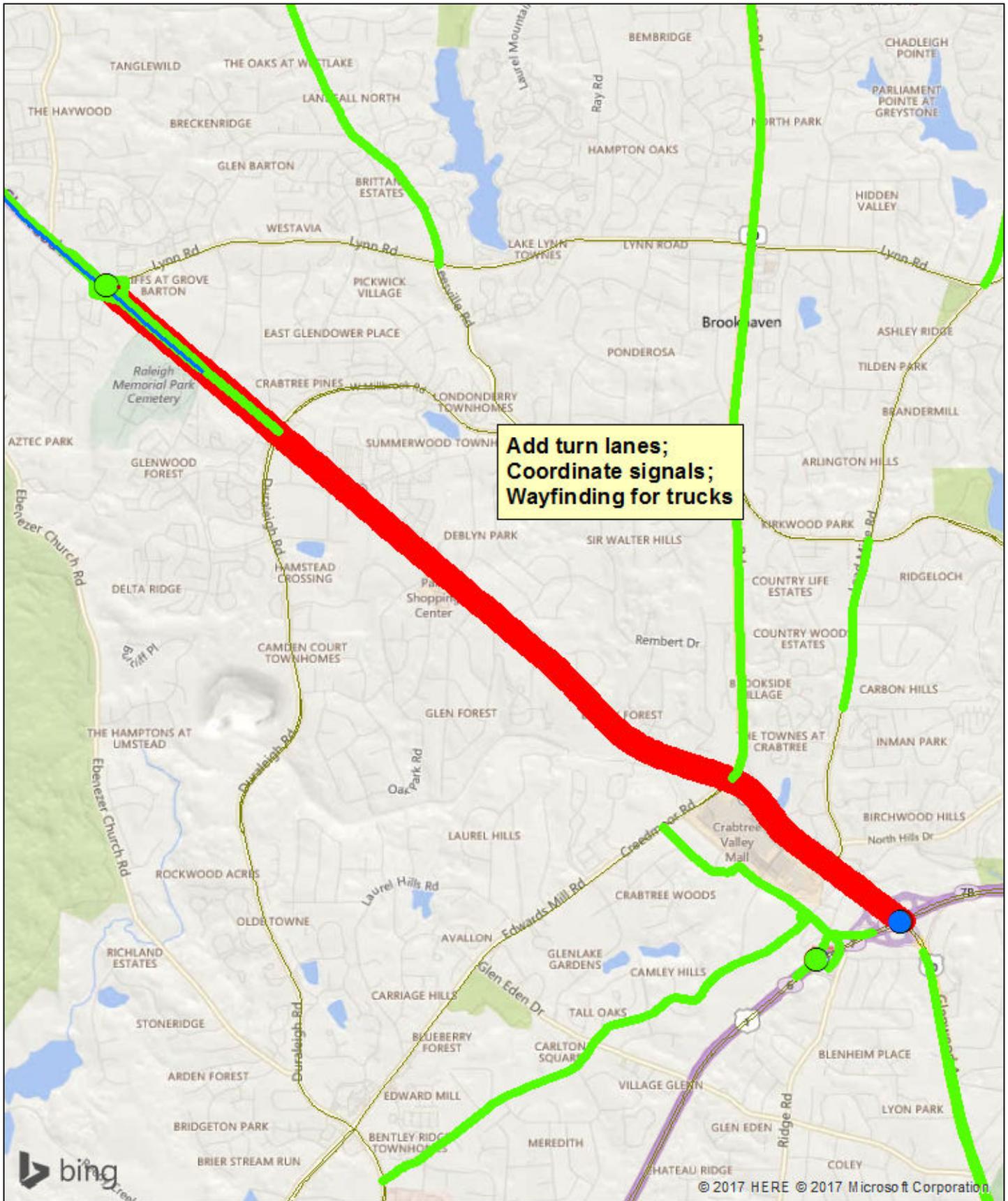
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 36**

**US 70: I-540 to Lynn Rd**

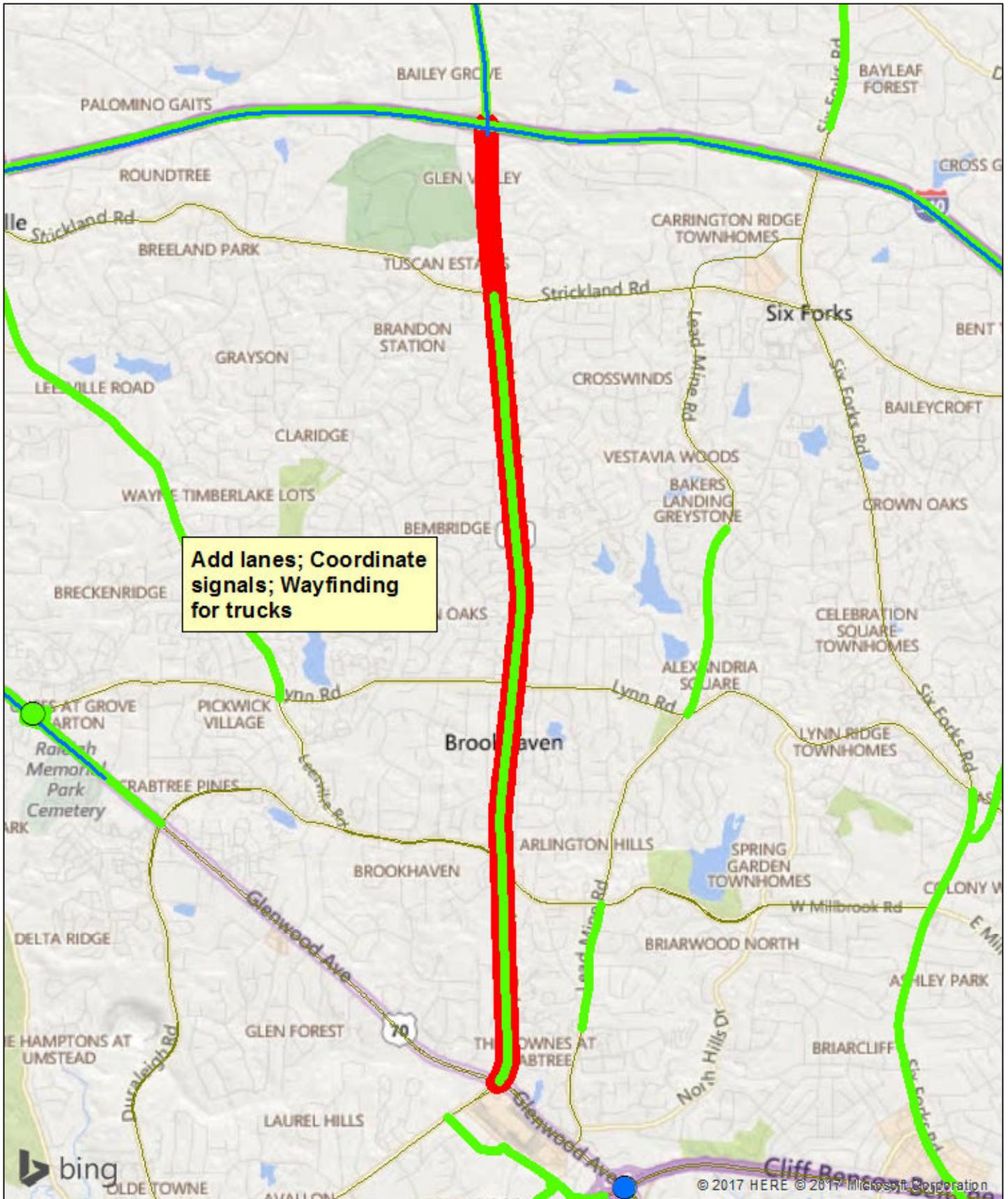
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 37**

**US 70: Lynn Rd to I-440**

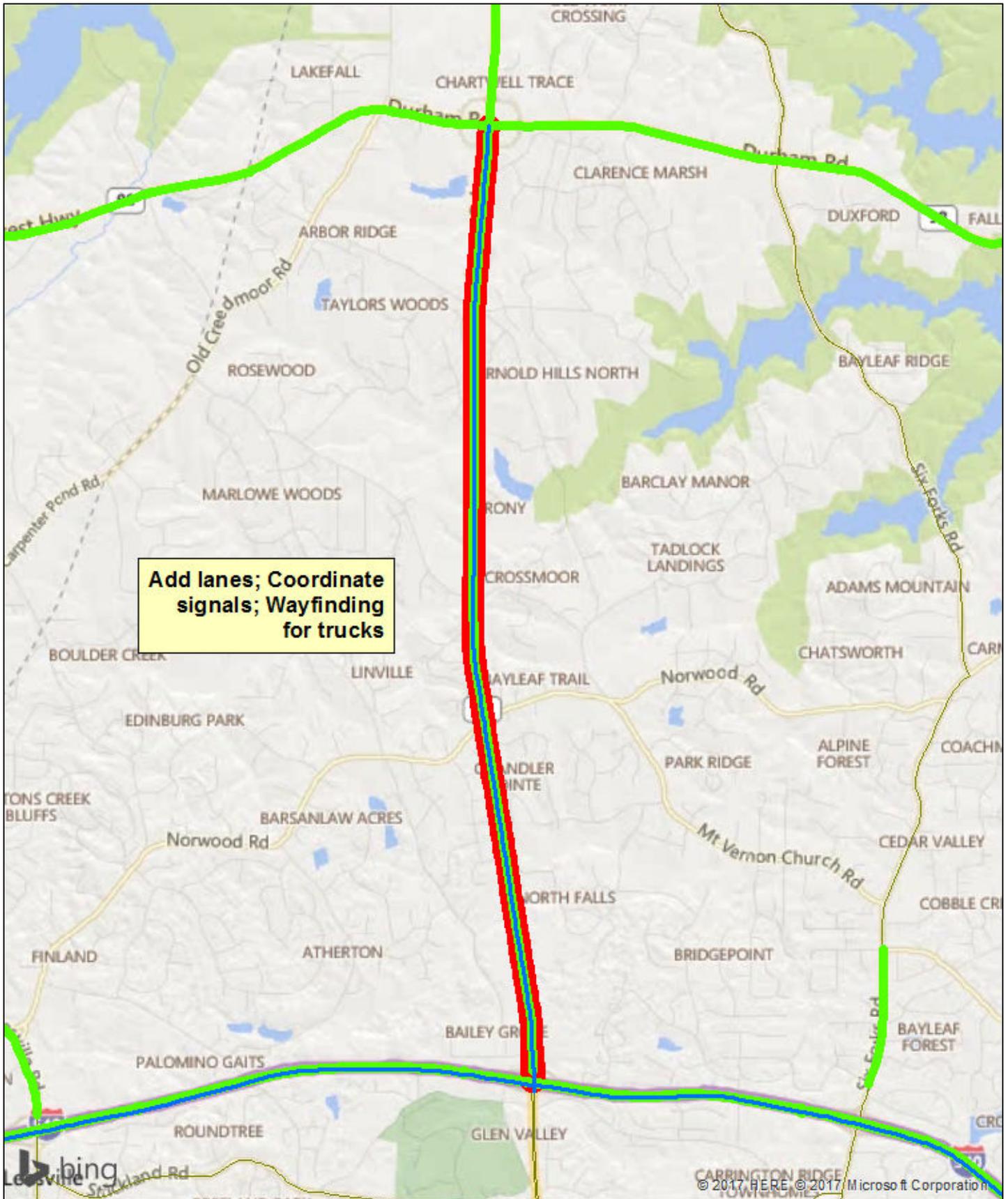
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 38**

**NC 50 (Creedmoor Rd): US 70 to I-540**

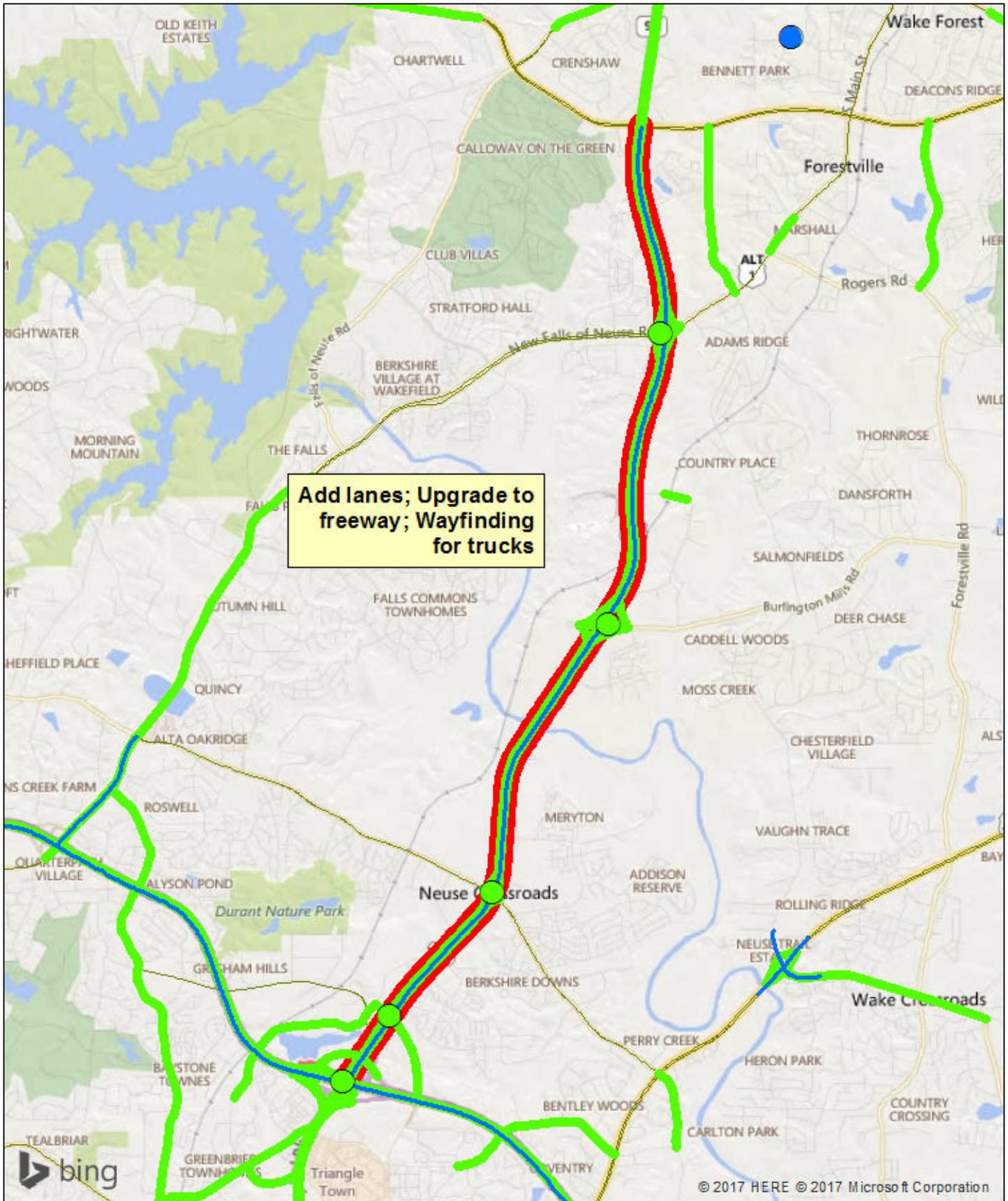
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 39**

**NC 50 (Creedmoor Rd): I-540 to NC 98**

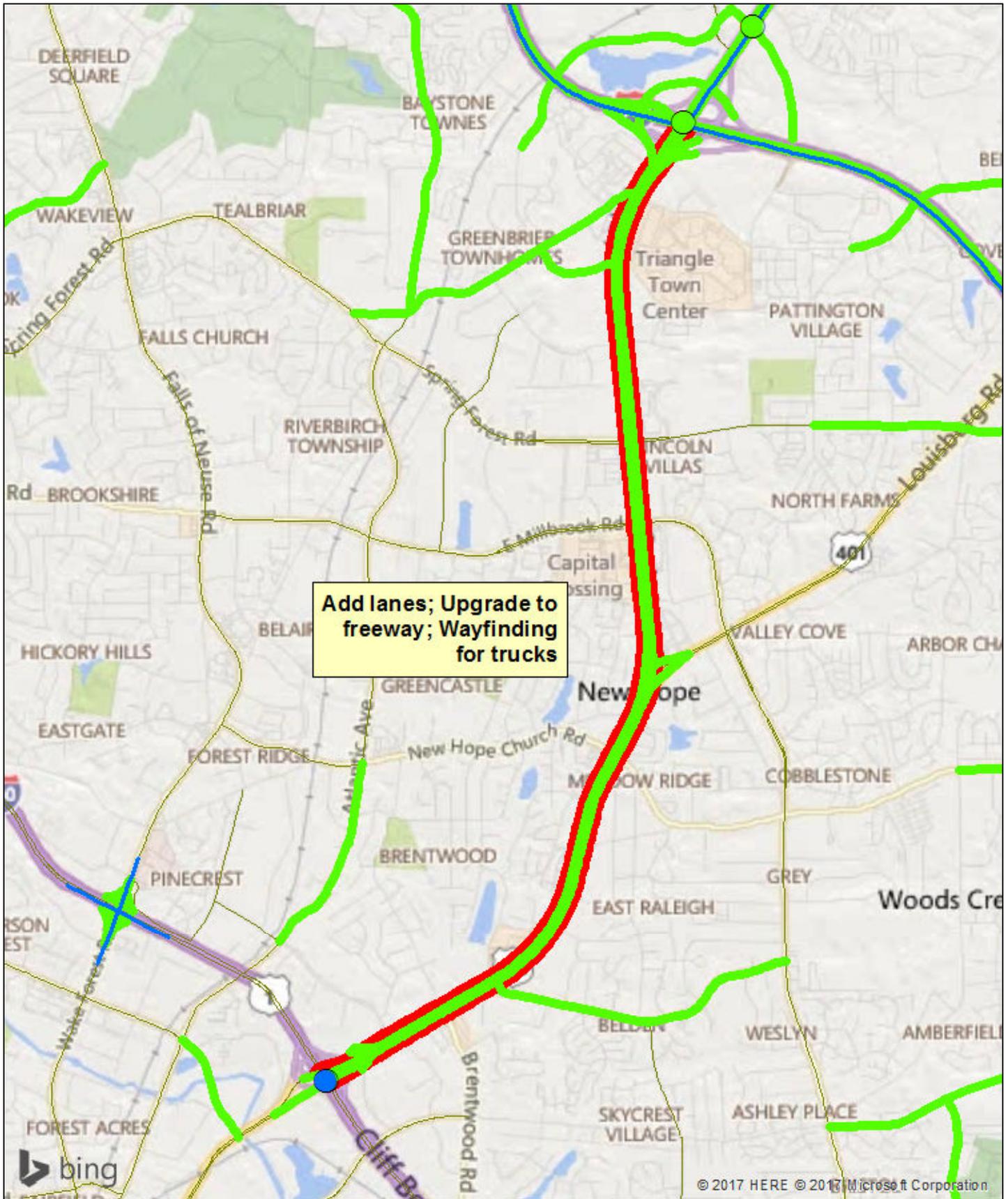
- █ Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 40**

**US 1 (Capital Blvd): I-54 to NC 98**

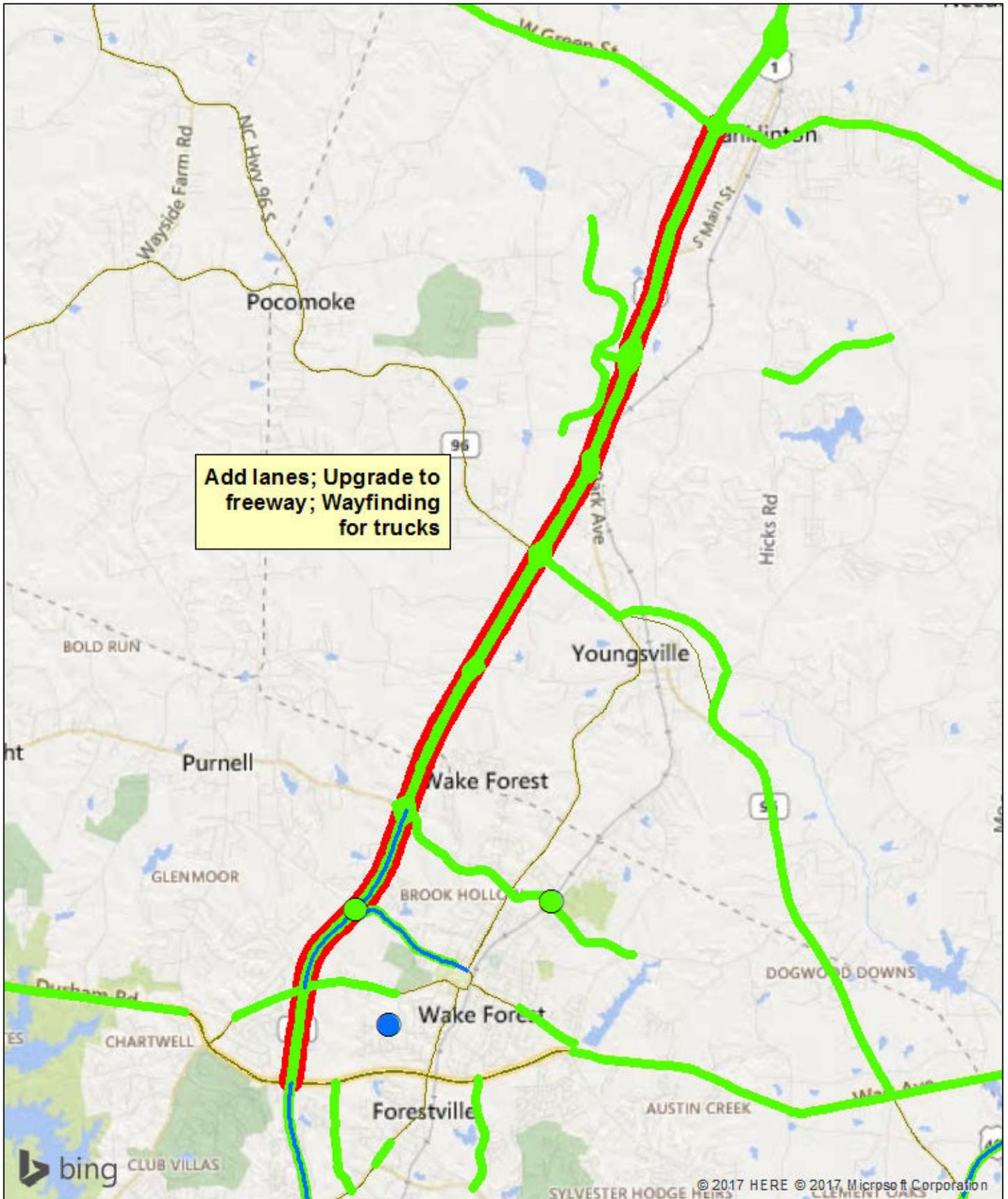
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 41**

**US 1 (Capital Blvd): I-440 to I-540**

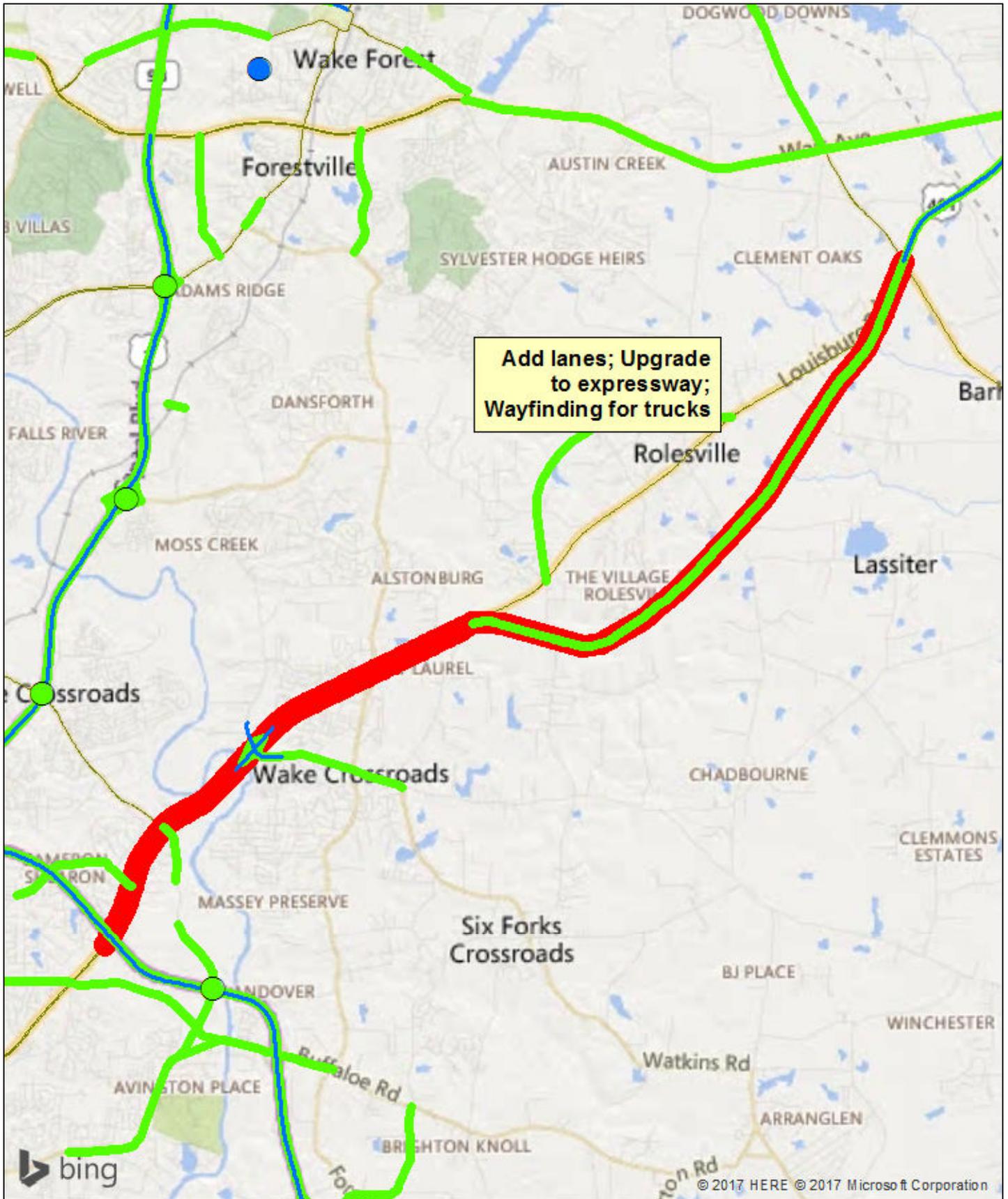
- █ Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 42**

**US 1: NC 98 to NC 56**

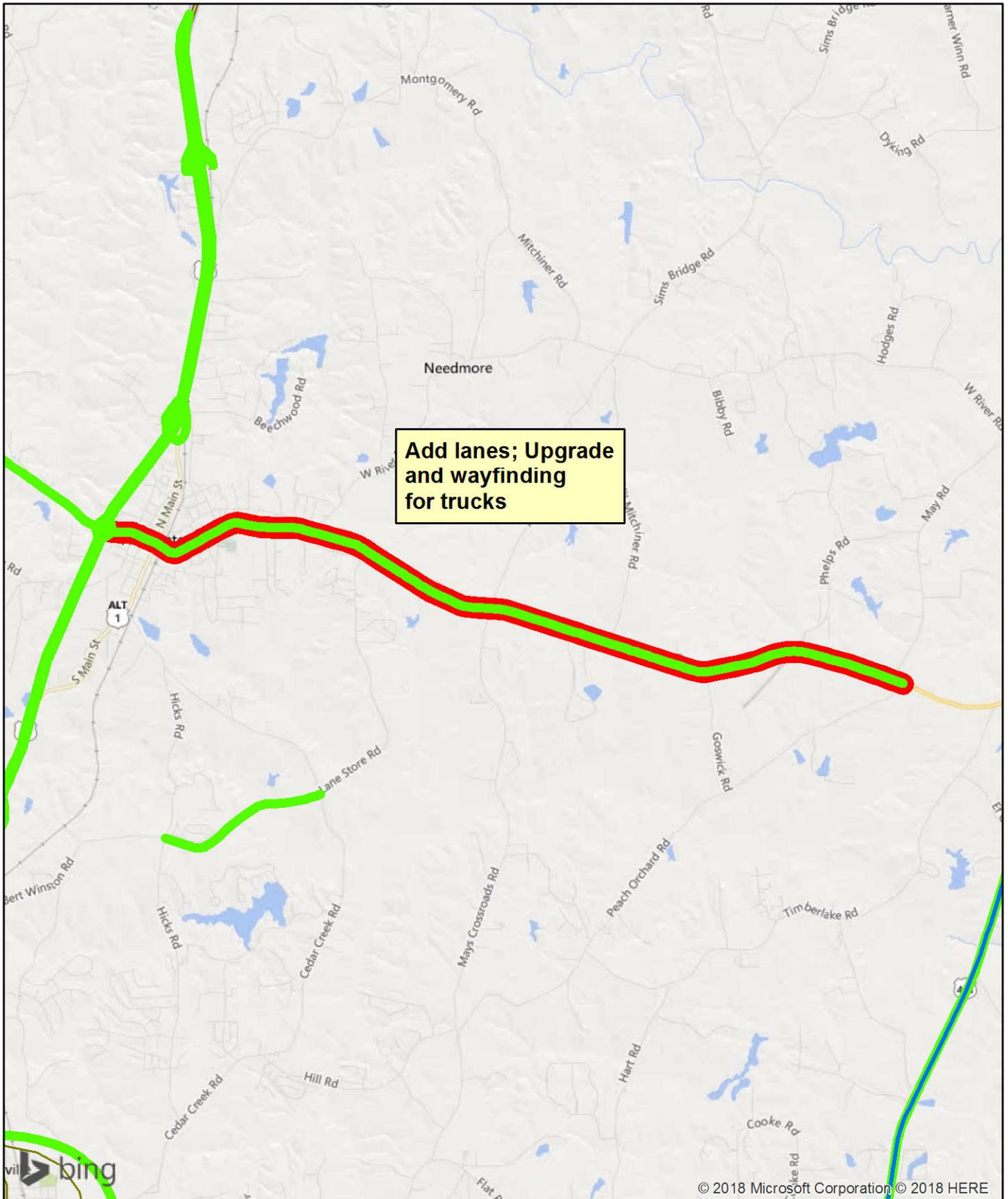
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 43**

**US 401 (North): I-540 to NC 96**

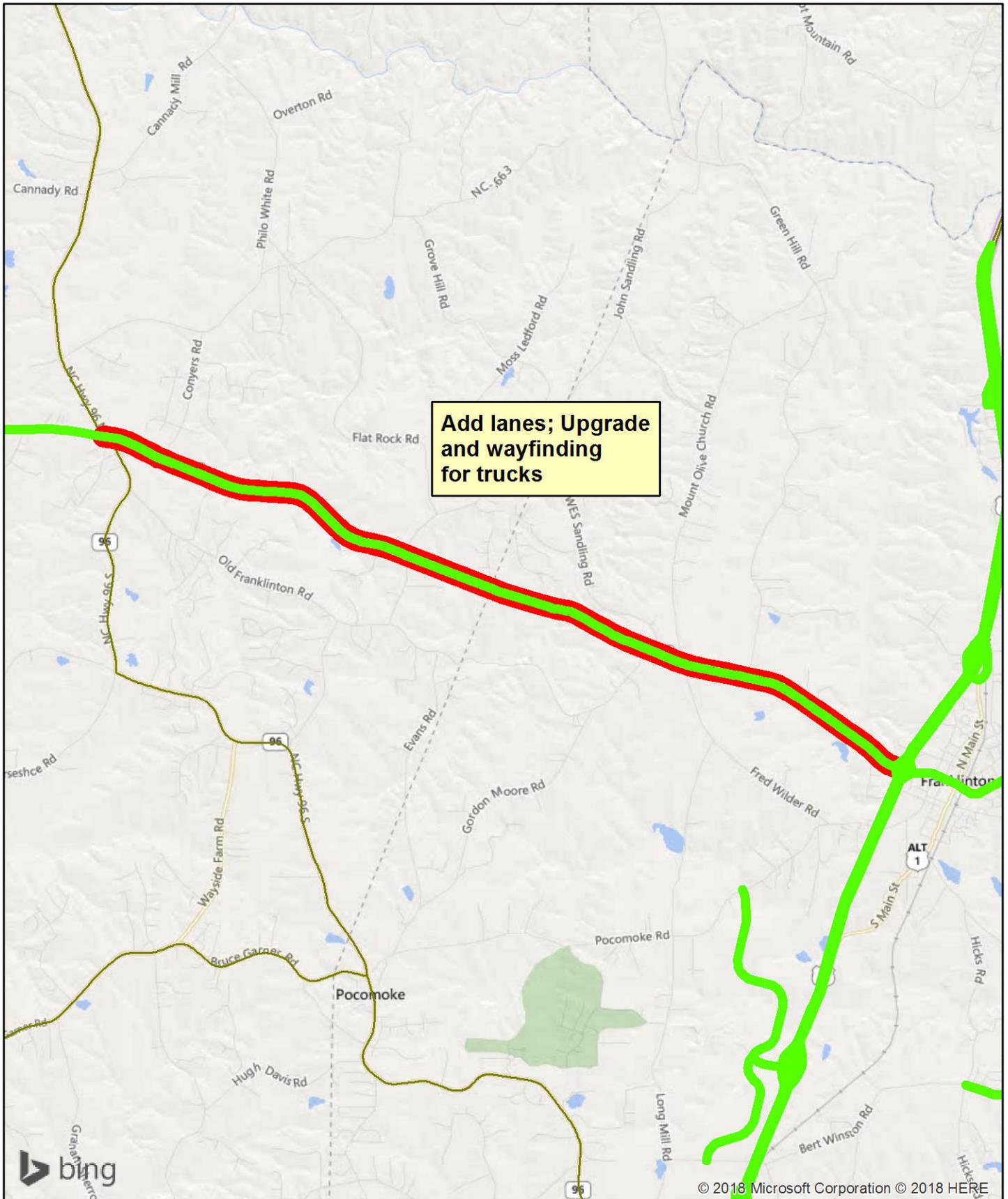
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 44**

**NC 56: US 1 to Peach Orchard Rd**

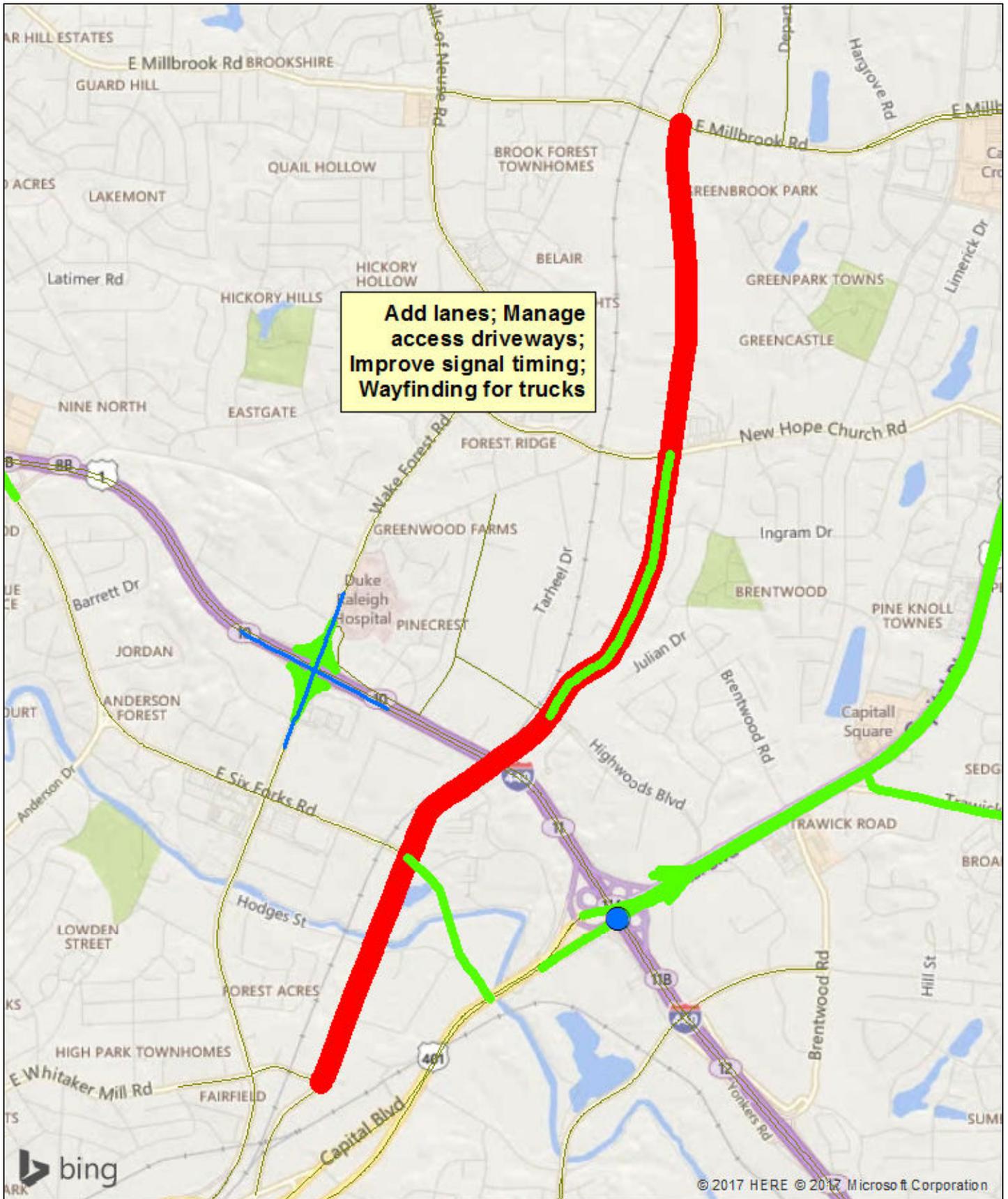
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 45**

**NC 56: NC 96 to US 1**

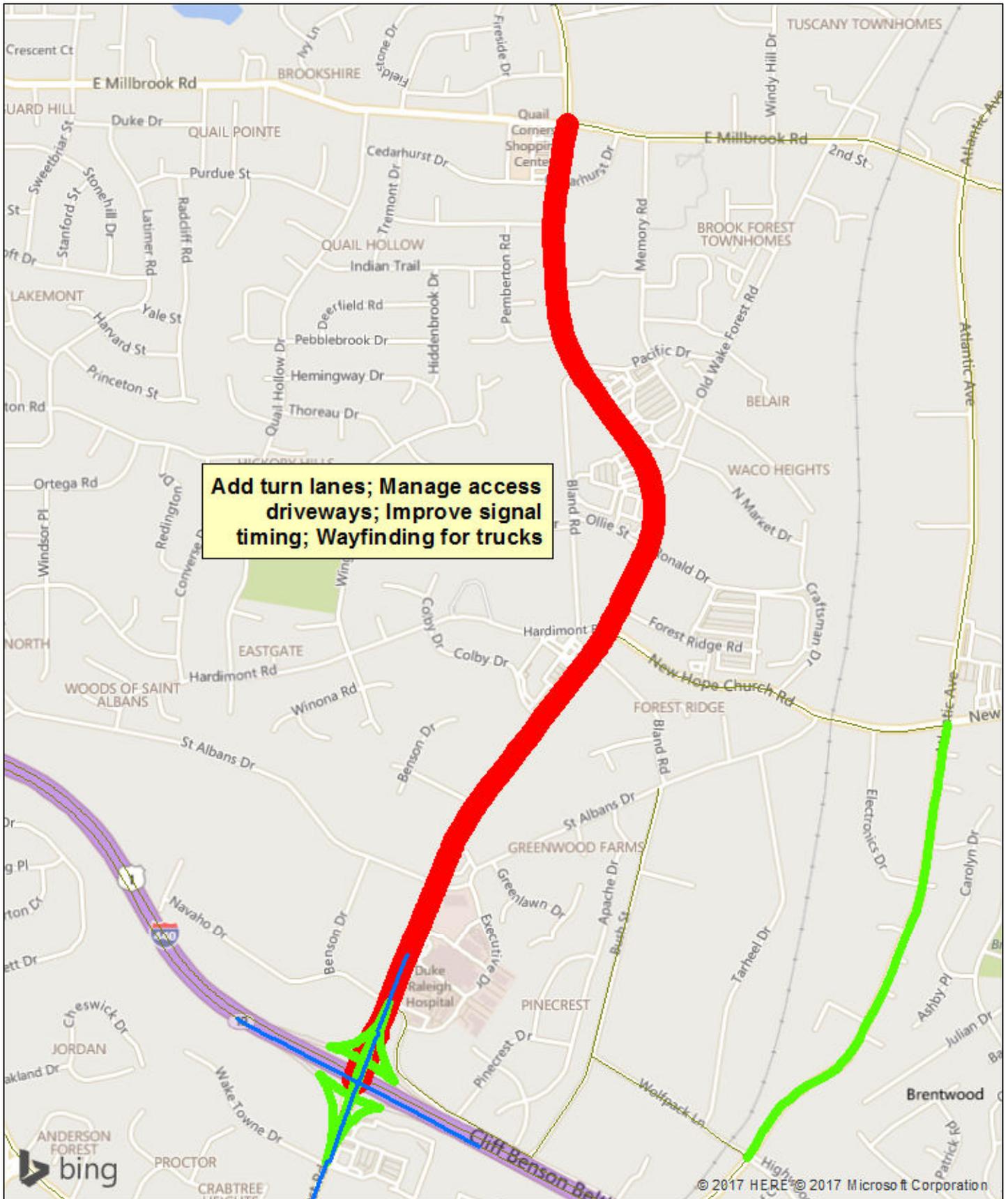
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 46**

**Atlantic Ave: Whitaker Mill Rd to E Milbrook Rd**

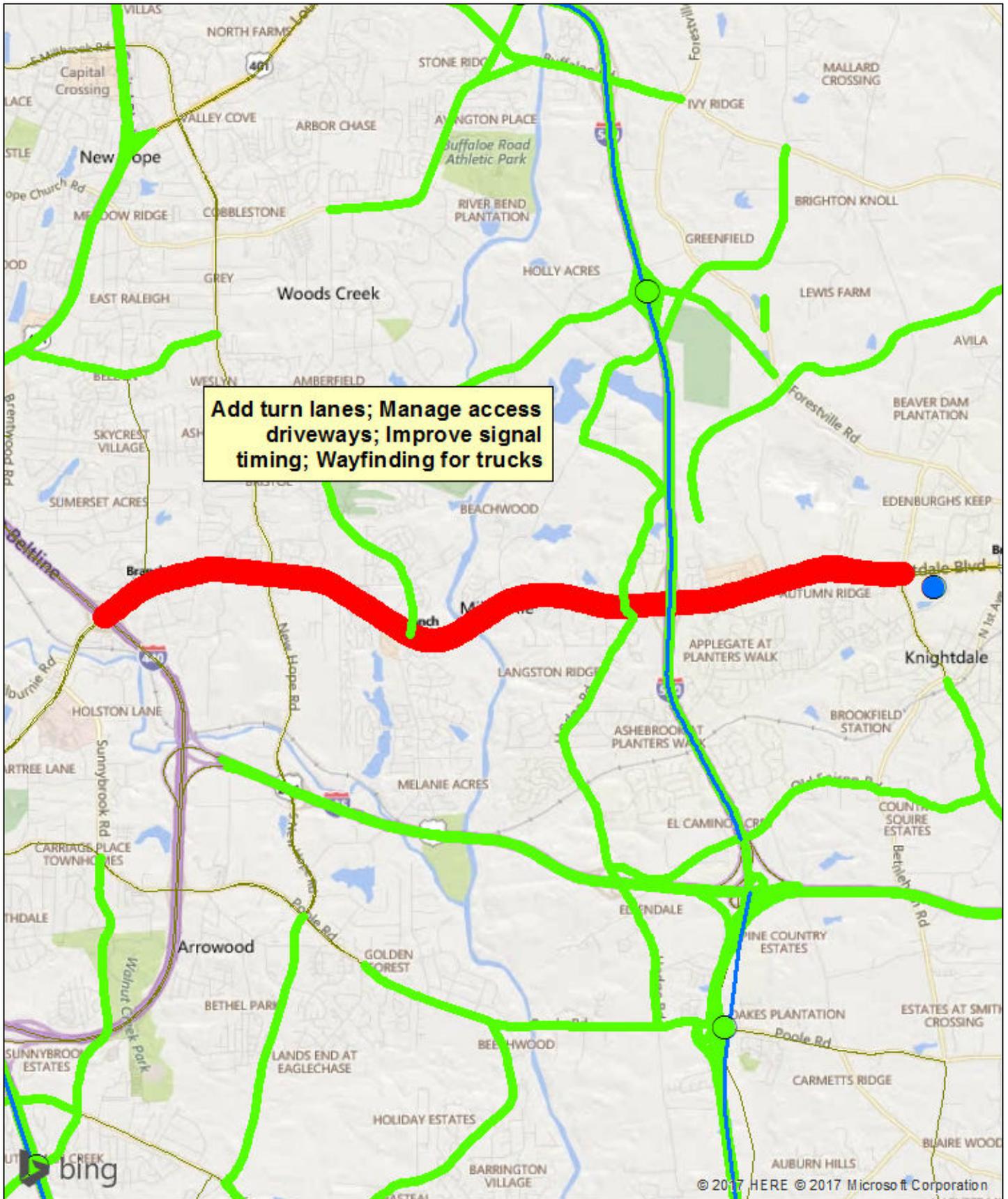
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 47**

**Wake Forest Rd / Falls of Neuse Rd: I-40 to E Millbrook Rd**

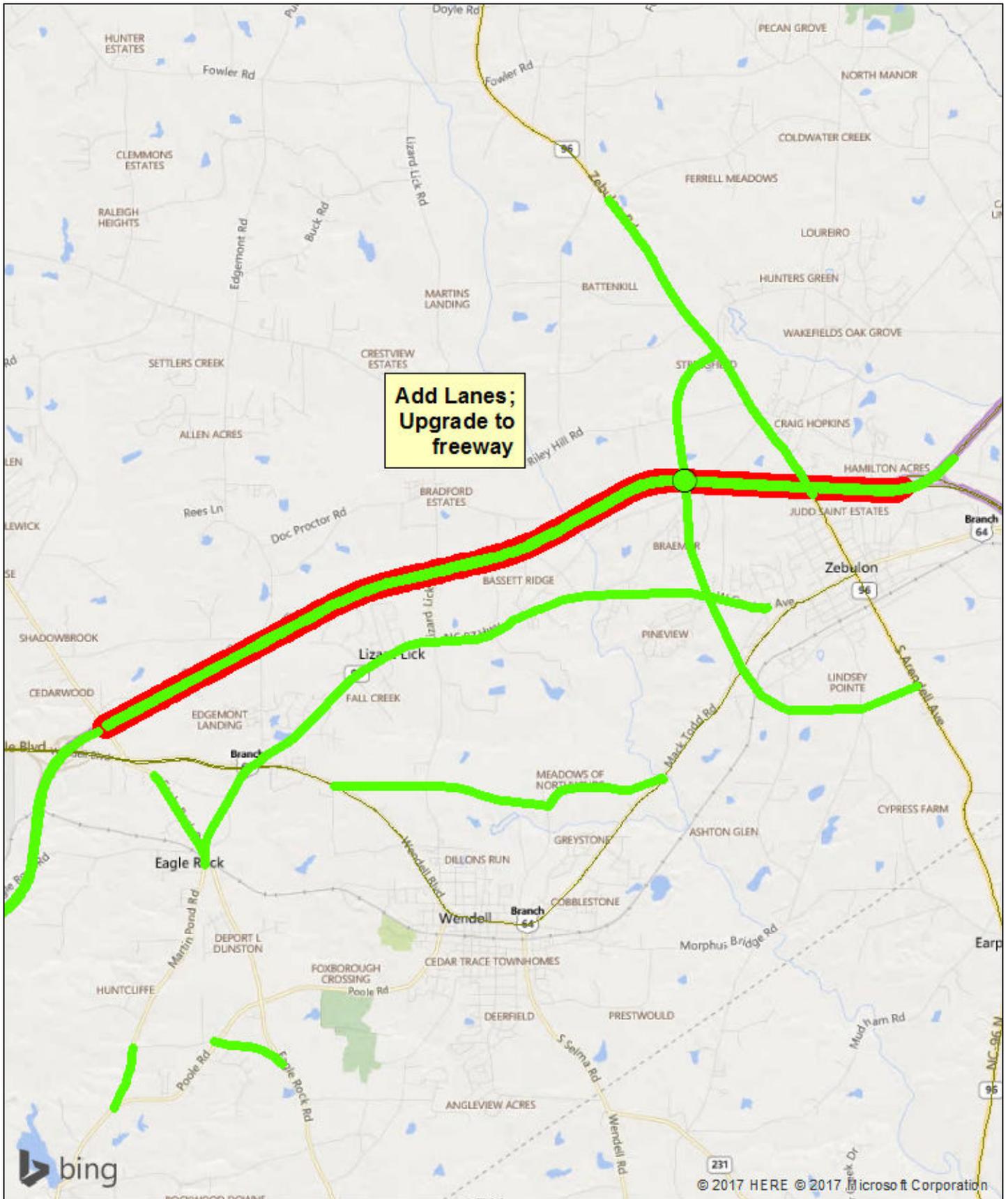
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 48**

**US 64 Business (New Bern Ave): I-440 to N Smithfield Rd**

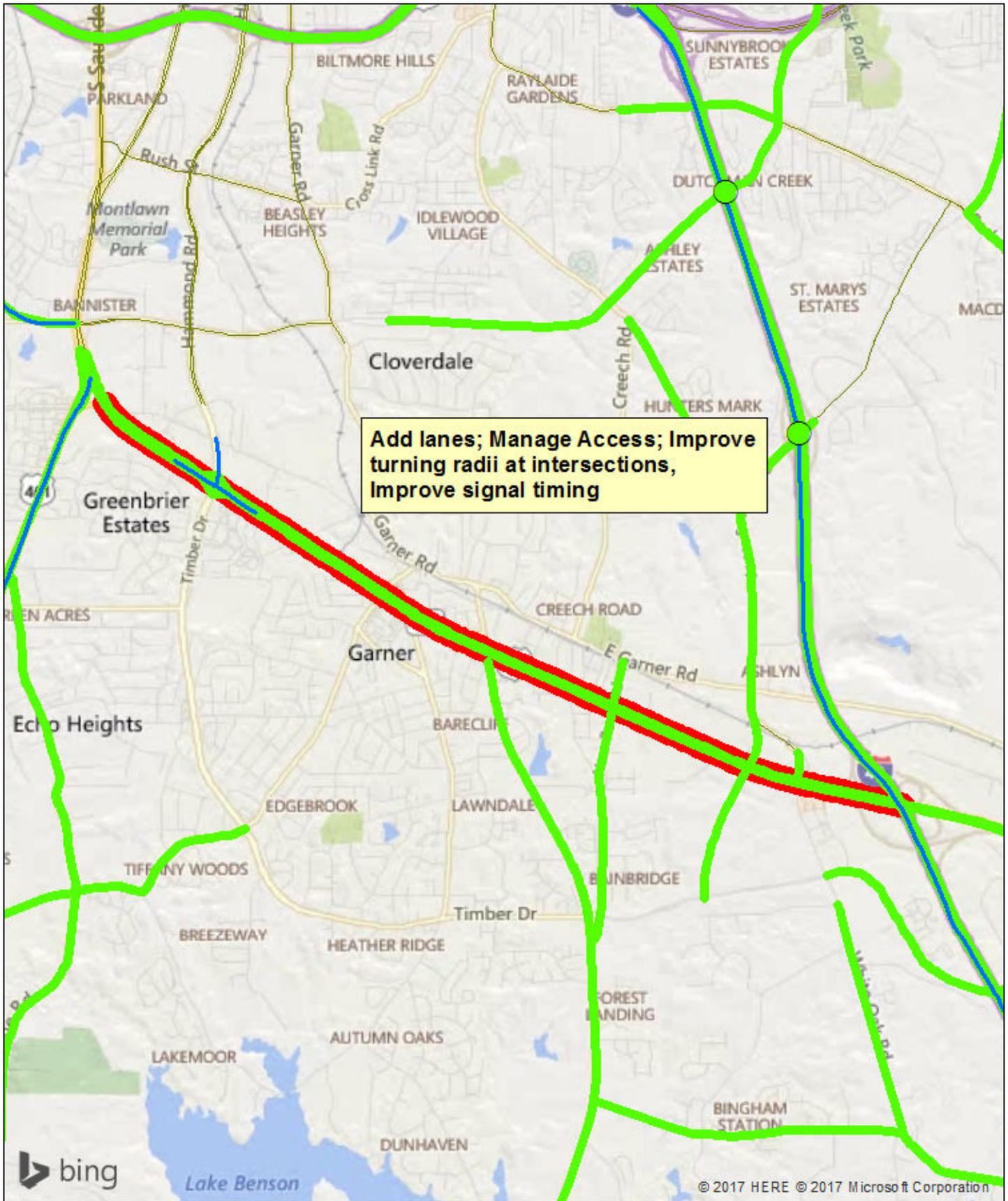
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 49**

**US 64 / US 264 (Future I-87): Rolesville Rd to US 64 / US 264 Split**

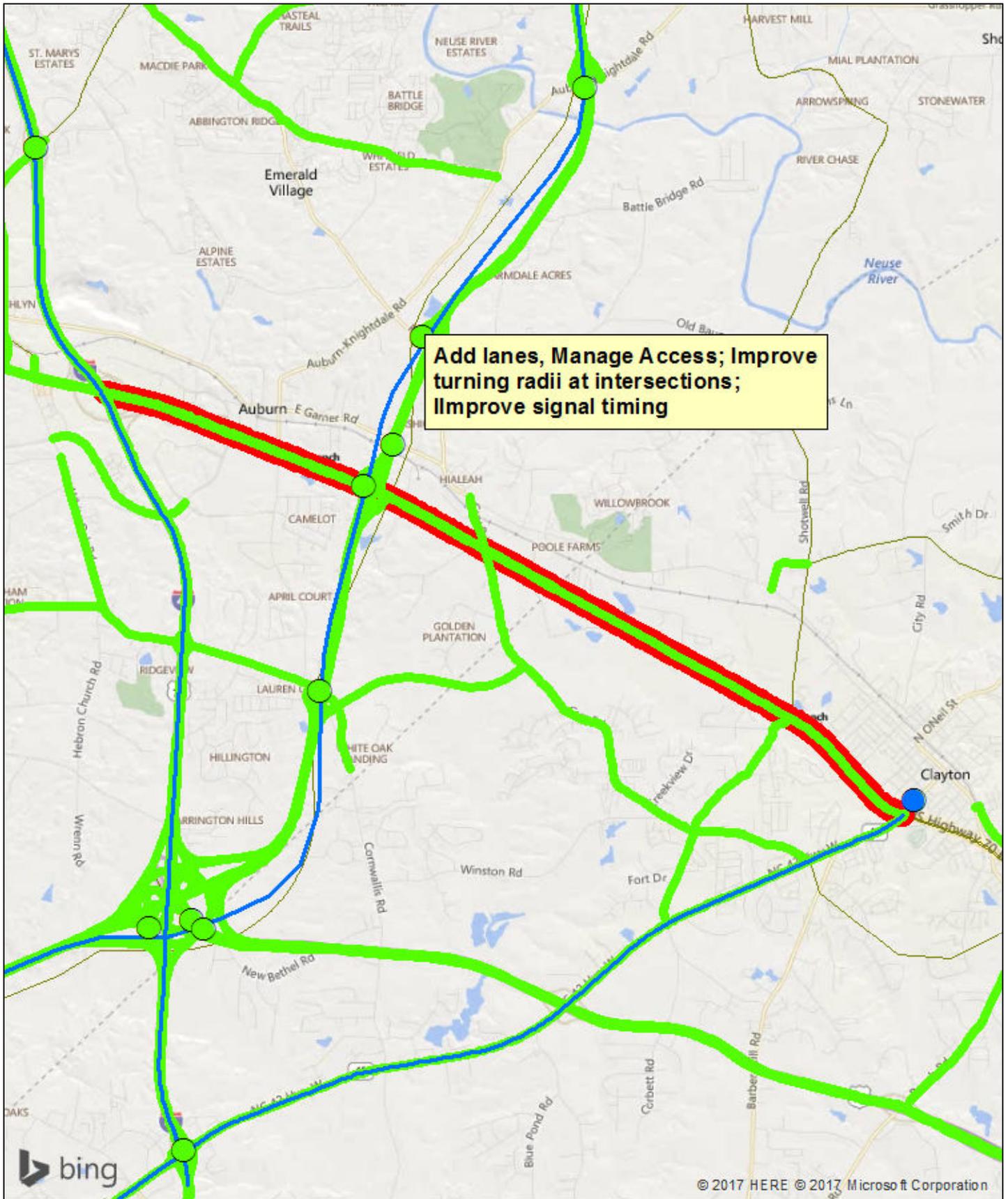
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 50**

**US 70 / NC 50: Mechanical Blvd to I-40**

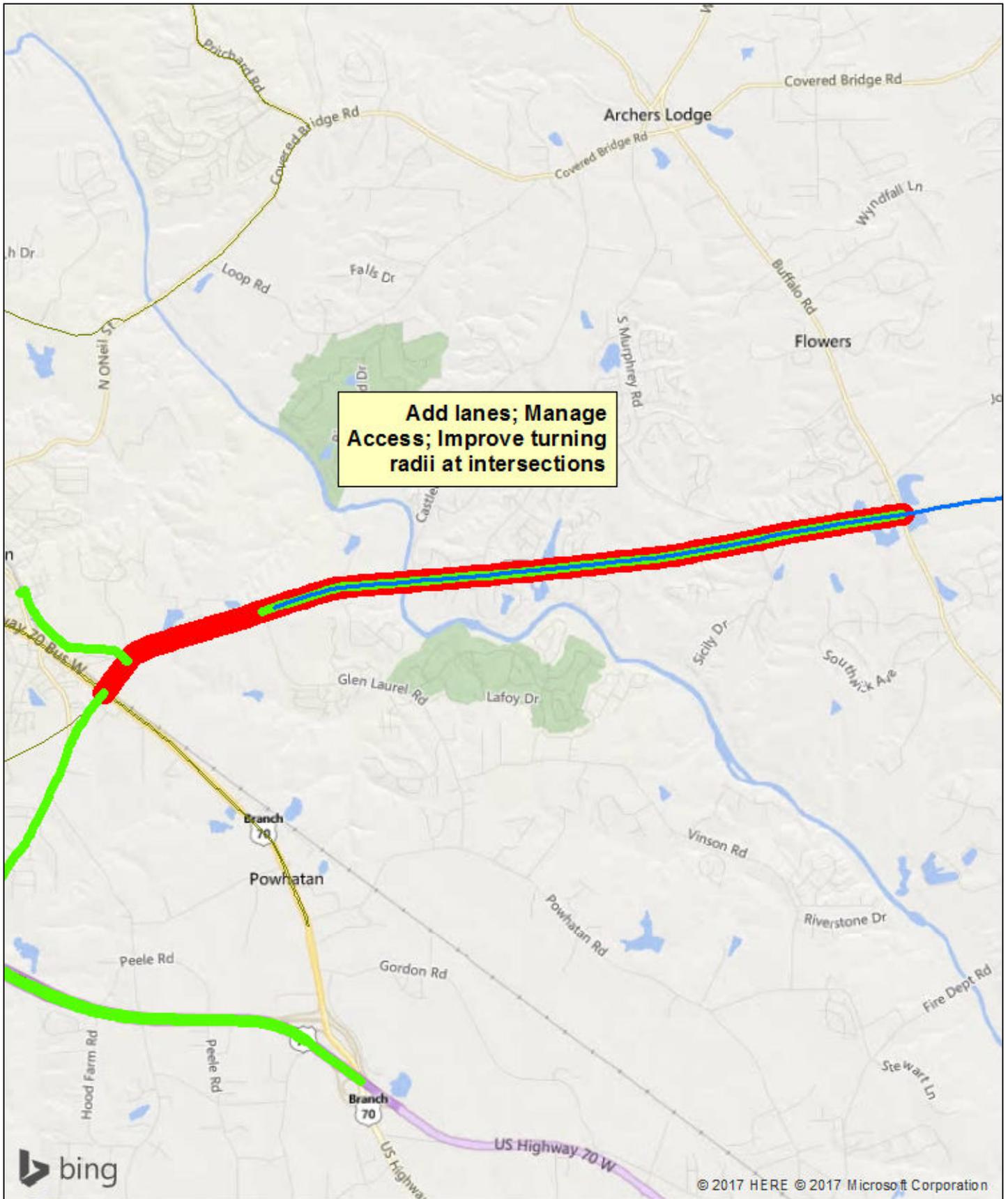
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 51**

**US 70 Business: I-40 to NC 42 (S Lombard St)**

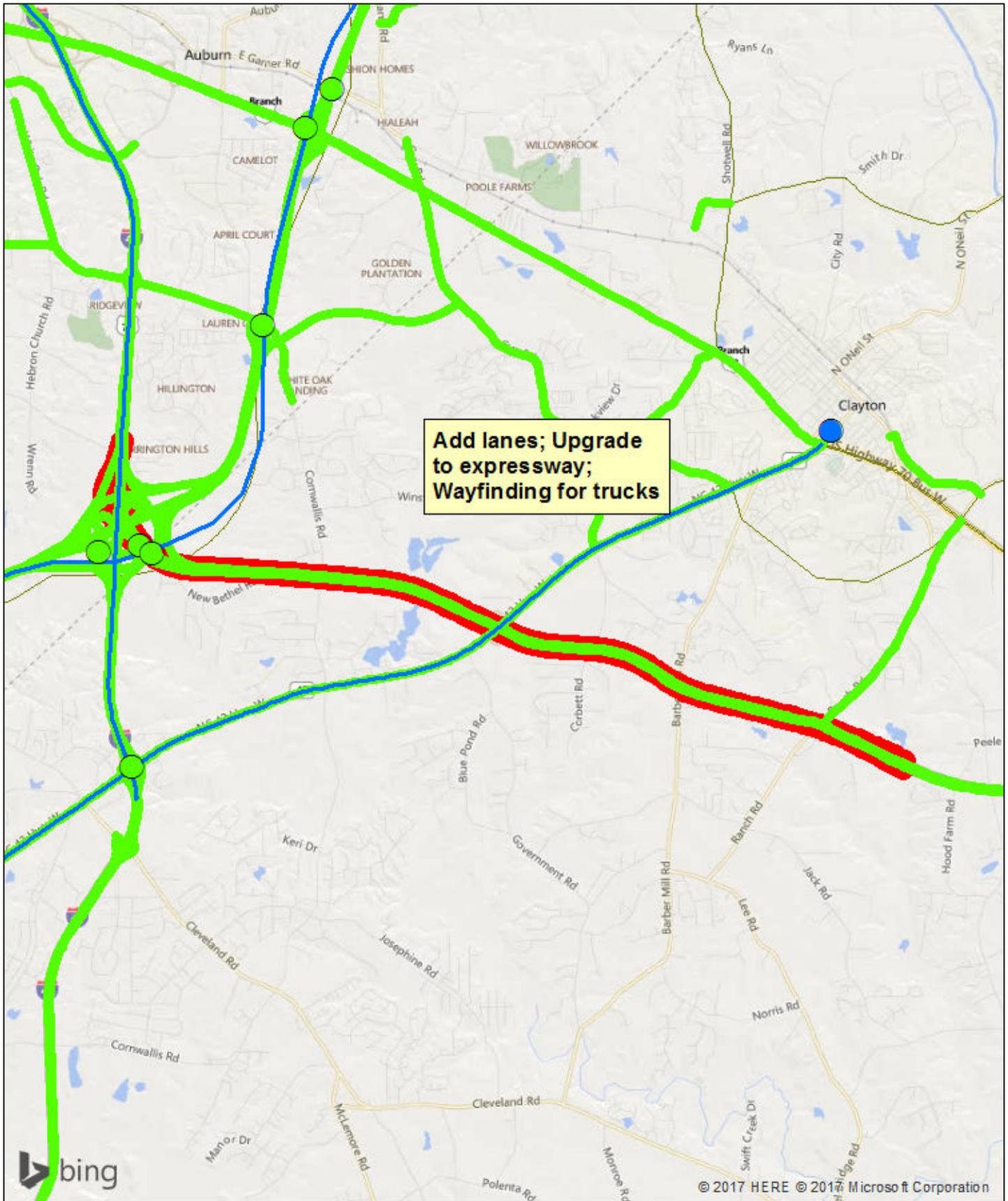
- Recommended Freight Project
- STIP Projects
- MTP Projects



**Project No. 52**

**NC 42: US 70 Business to Buffalo Rd**

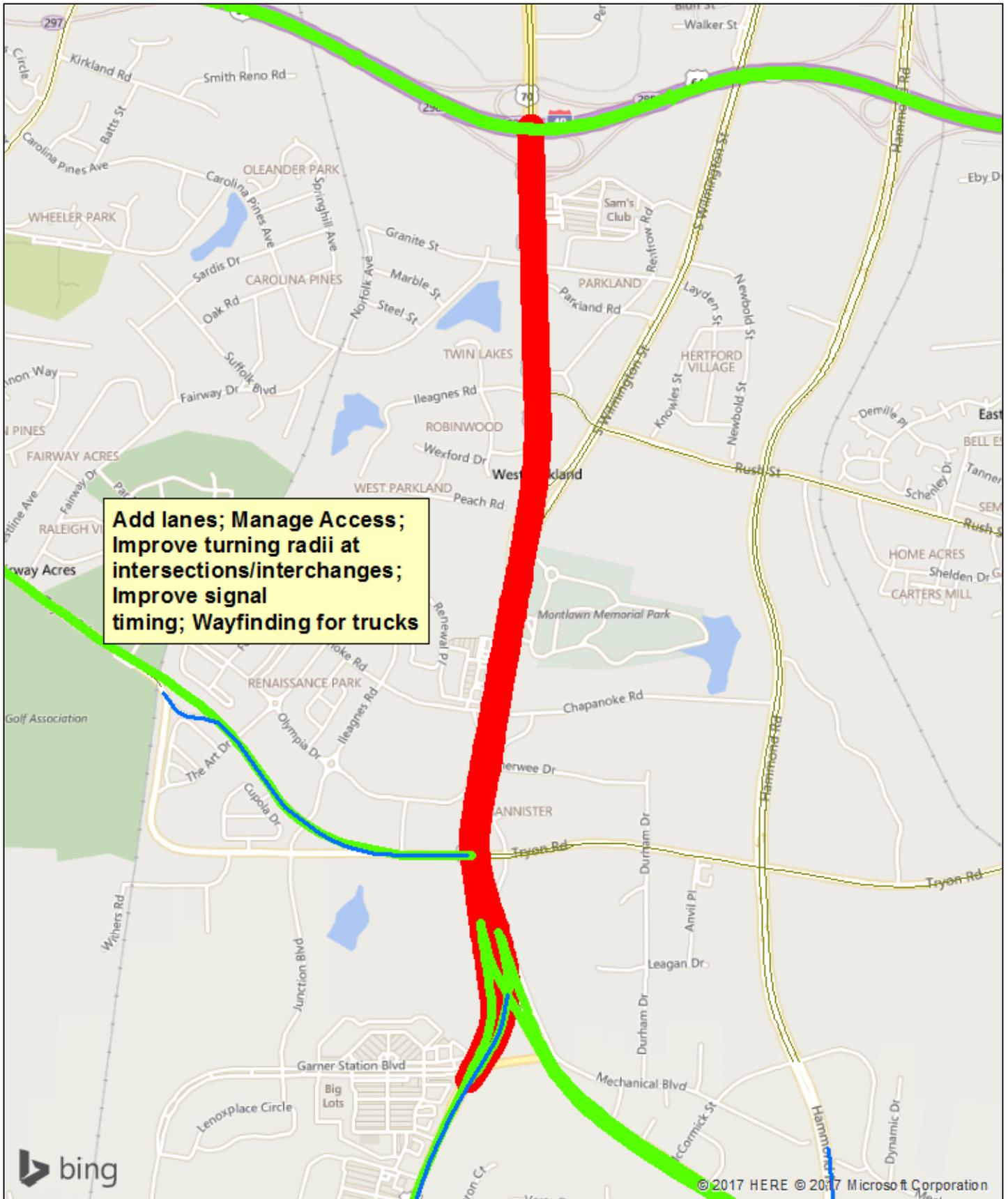
- █ Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 53**

**US 70 (Clayton Bypass): I-40 to I-95**

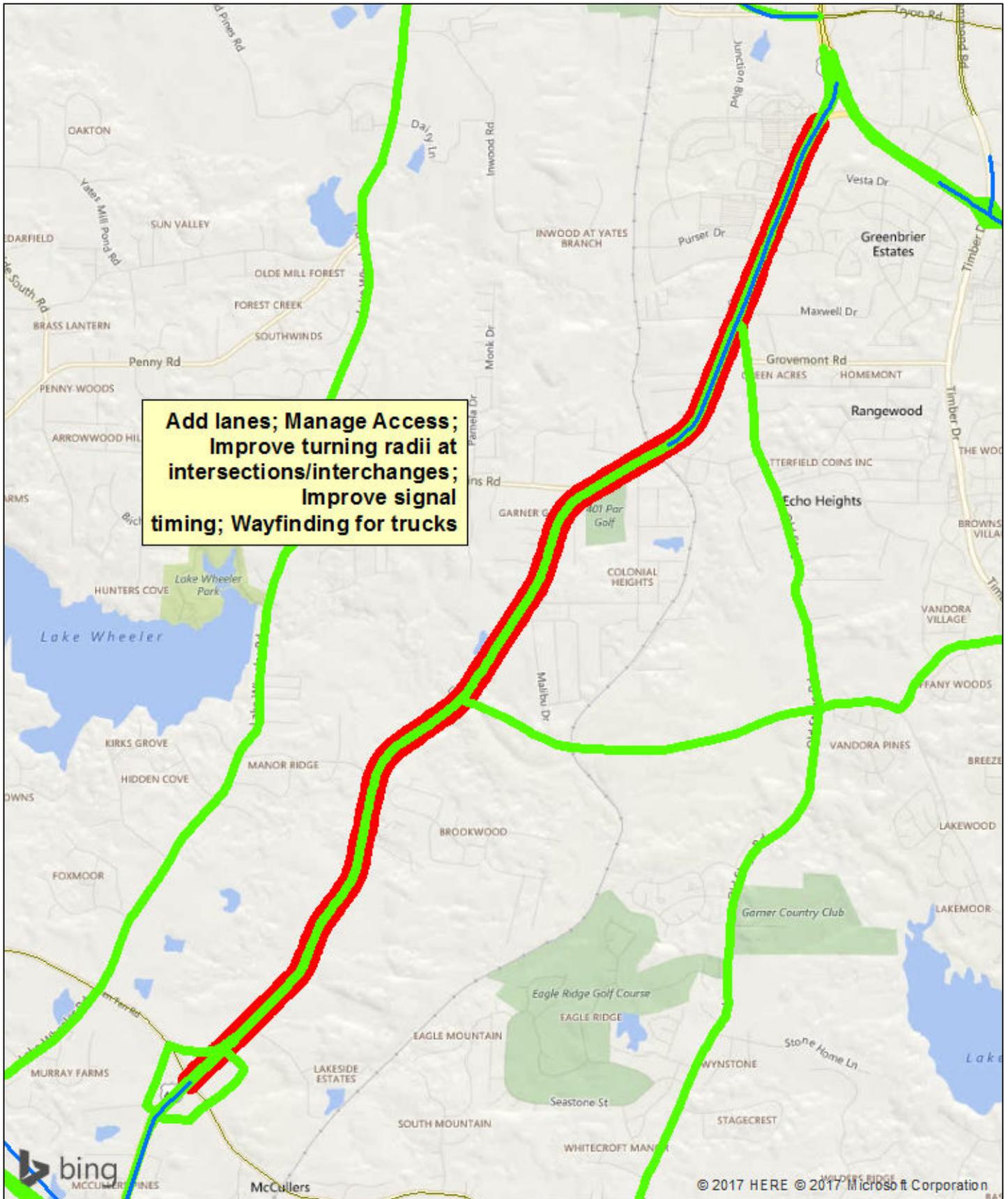
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 54**

**US 401 (S Saunders St): I-40 to Garner Station Rd**

- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 55**

**US 401 (Fayetteville Rd): Garner Station Blvd to Ten Ten Rd**

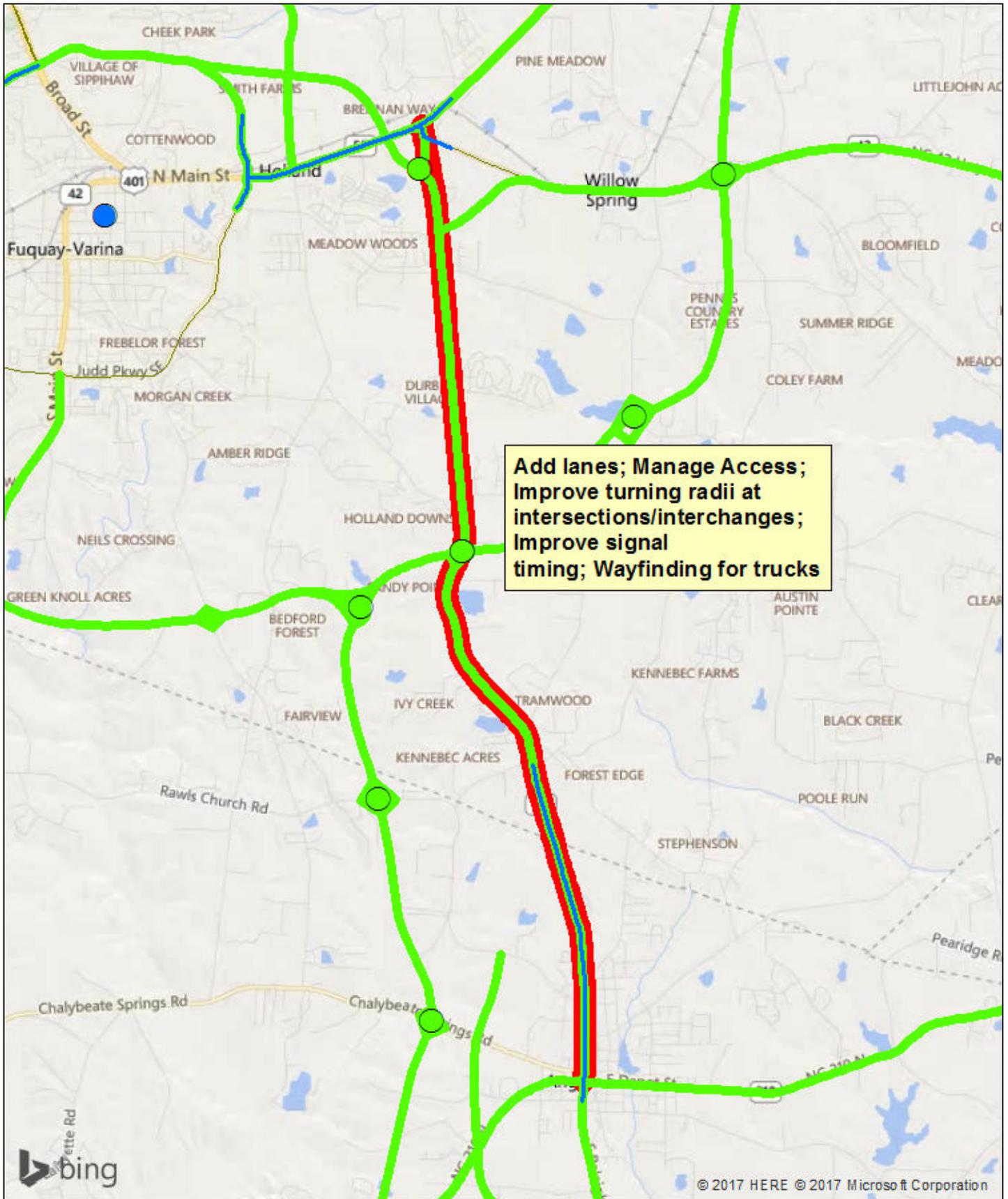
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 56**

**US 401 (Fayetteville Rd / N Main St): Ten Ten Rd to Judd Pkwy**

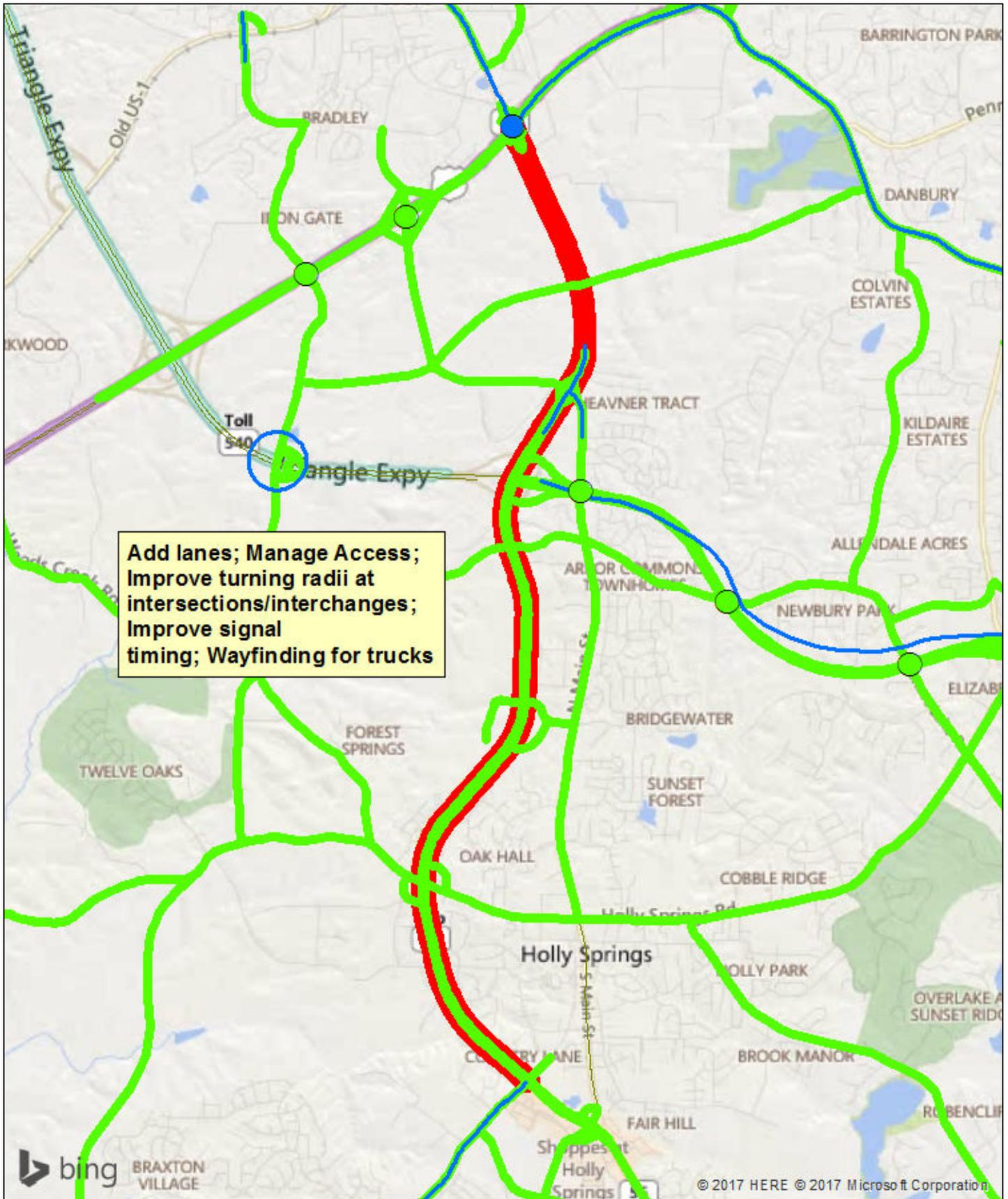
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 57**

**NC 55 (N Raleigh St): US 401 (N Main St) to NC 210 (Depot St)**

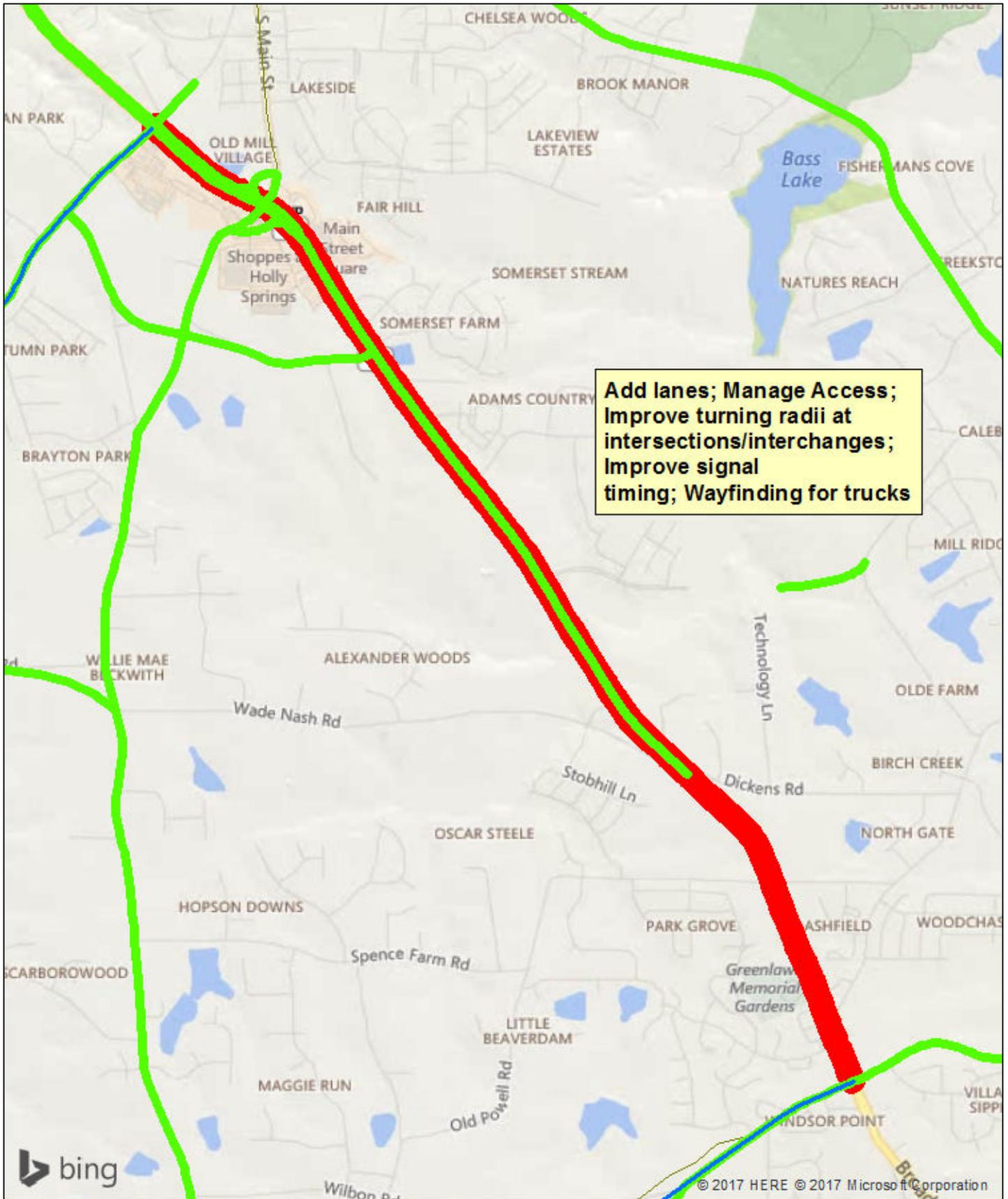
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 58**

**NC 55 / NC 55 Bypass: US 1 to Avent Ferry Rd**

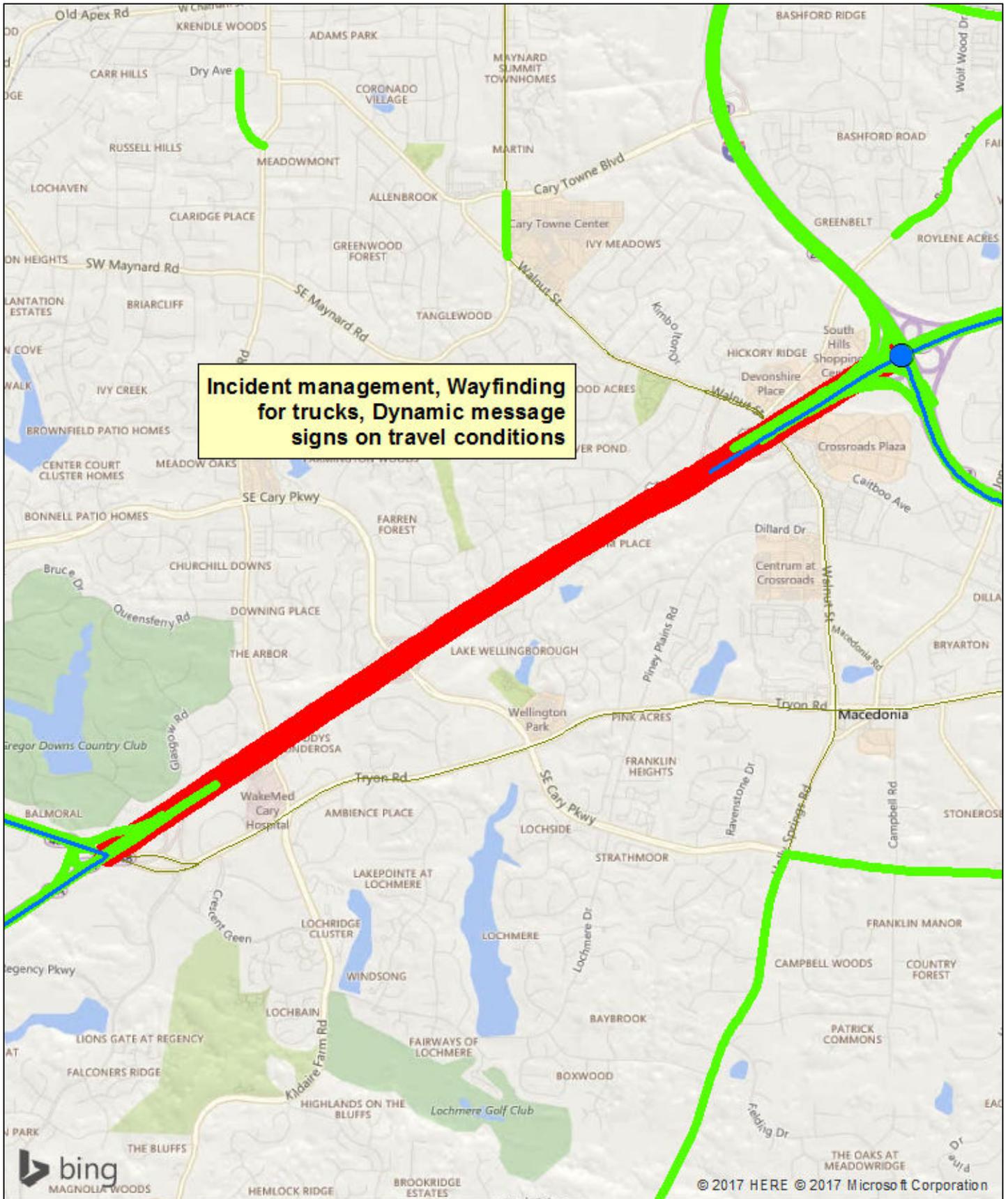
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 59**

**NC 55: Avent Ferry Rd to Judd Pkwy / Wilbon Rd**

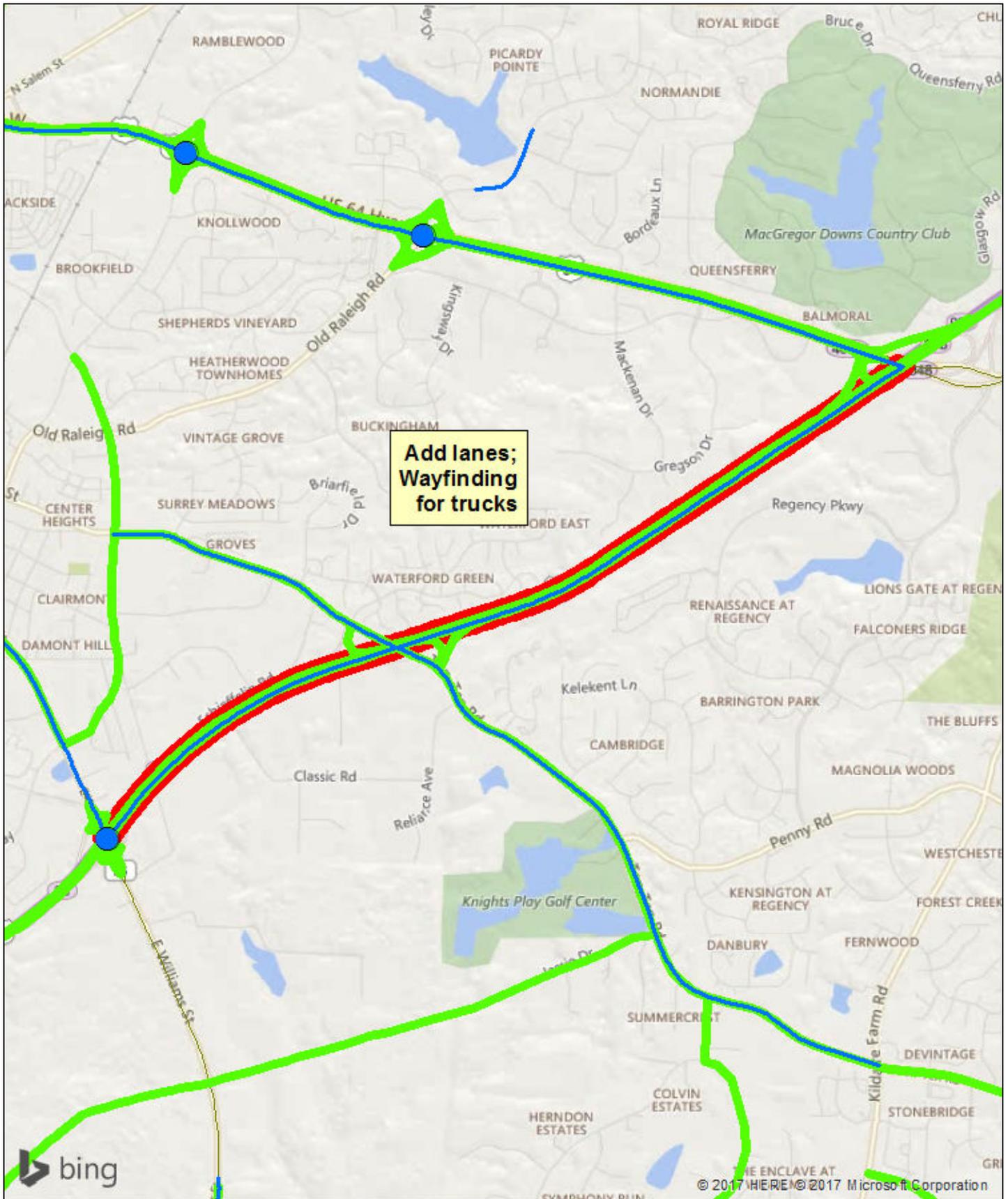
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 60**

**US 64 / US 1: I-40 / I-440 to US 64 / Tryon Rd**

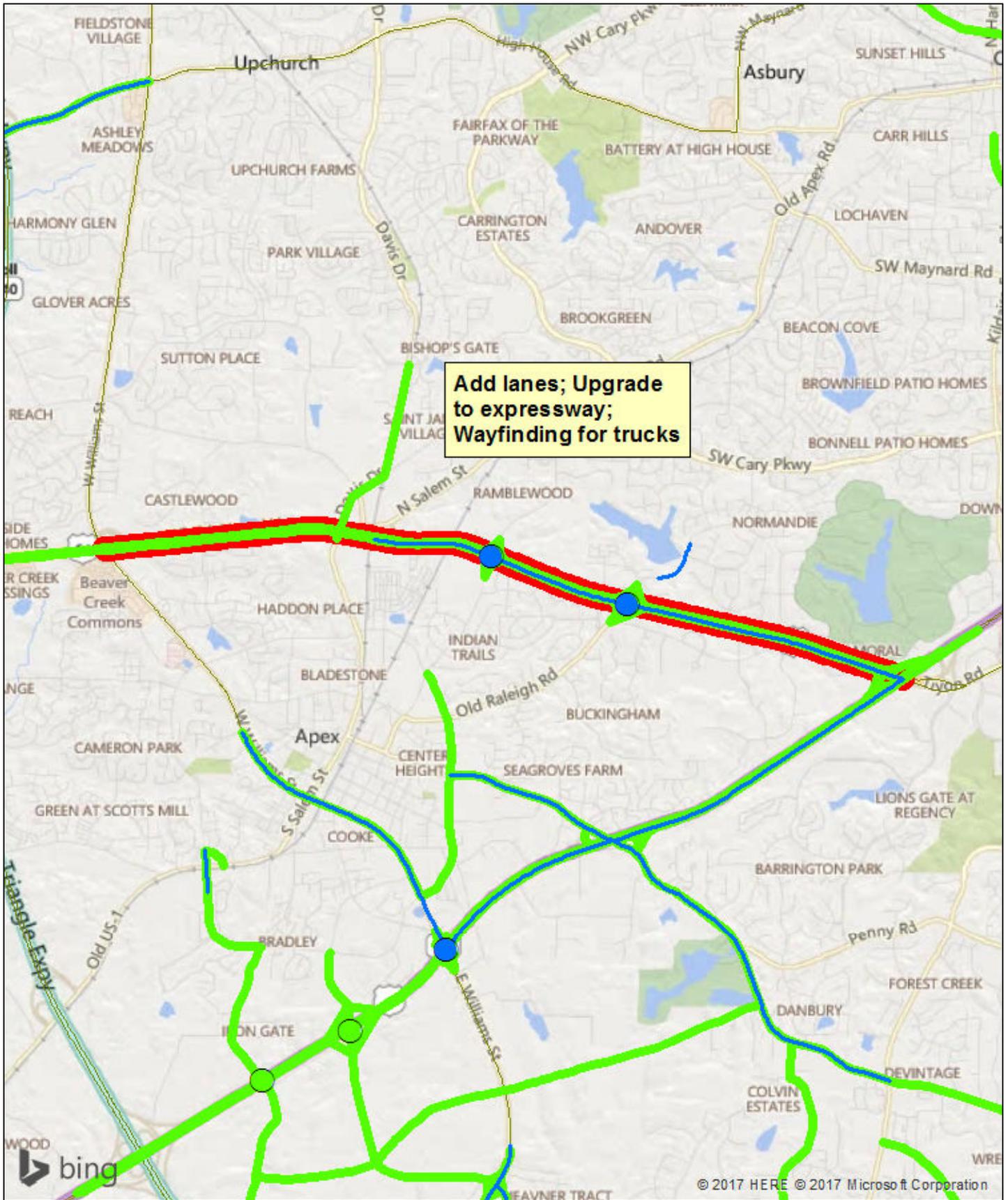
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 61**

**US 1: US 64 / Tryon Rd to NC 55**

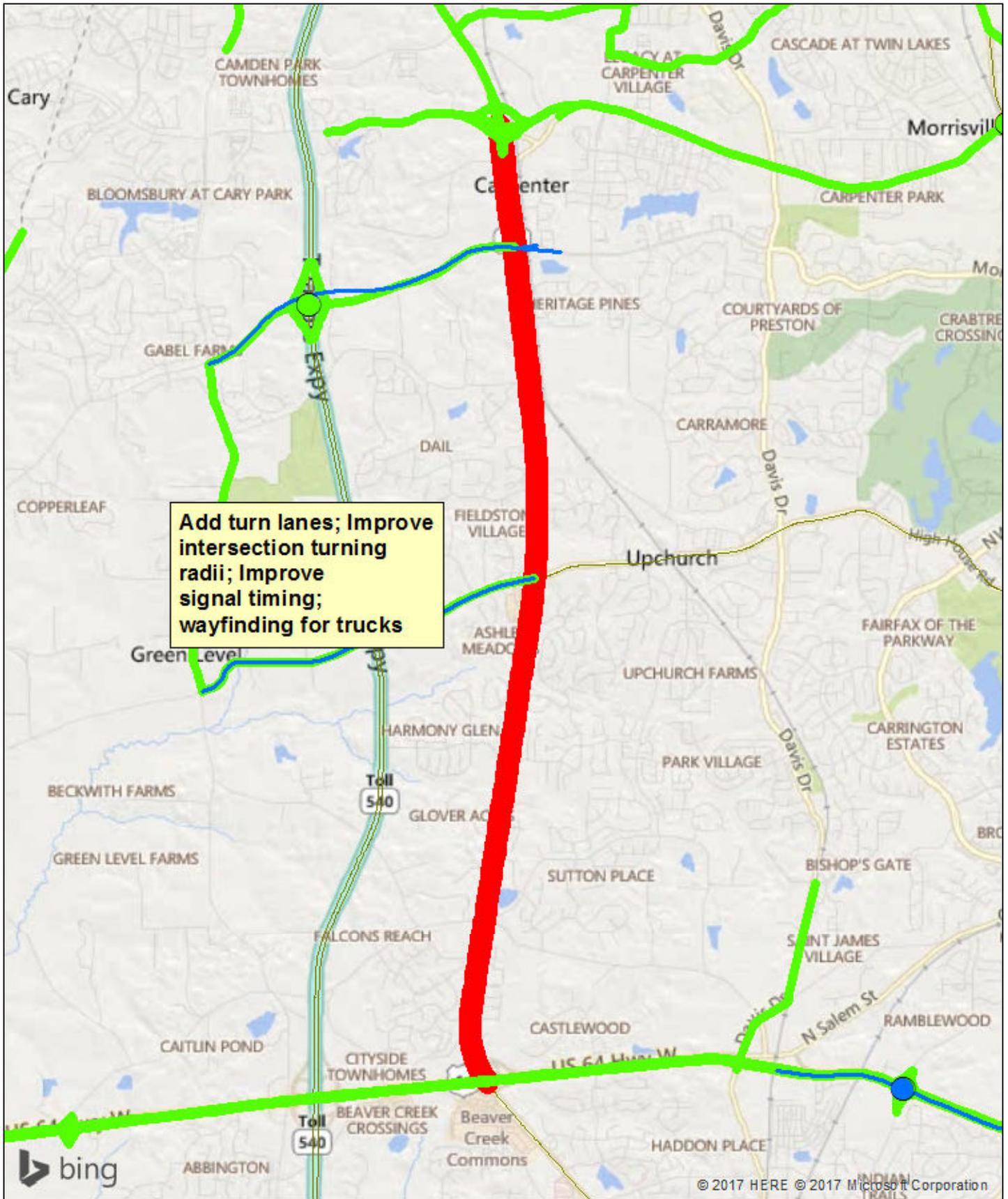
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 62**

**US 64: Tryon Rd to NC 55**

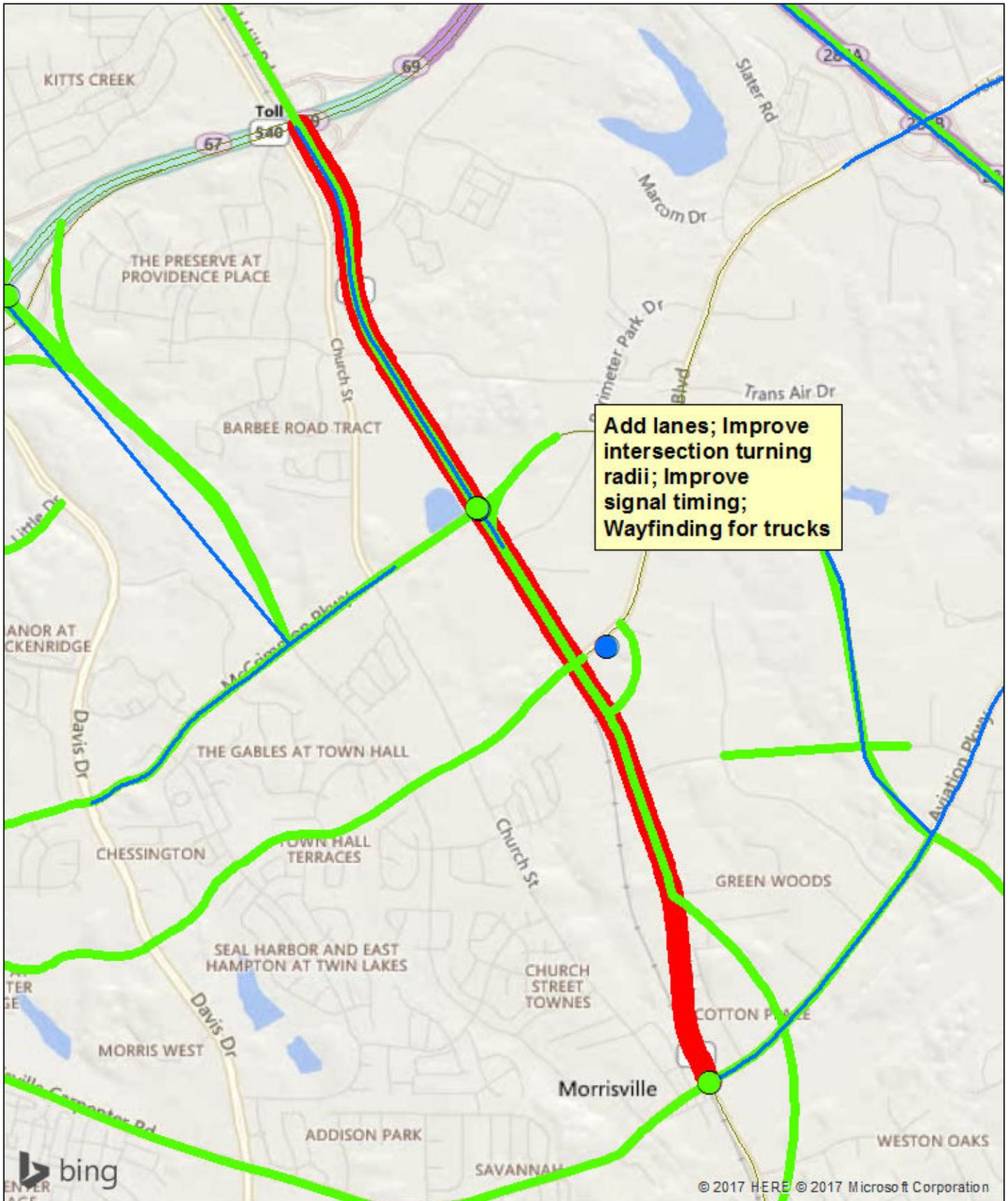
- █ Recommended Freight Project    ● STIP Projects    ● MTP Projects
- STIP Projects    — MTP Projects



**Project No. 63**

**NC 55: Carpenter Fire Station Rd to US 64**

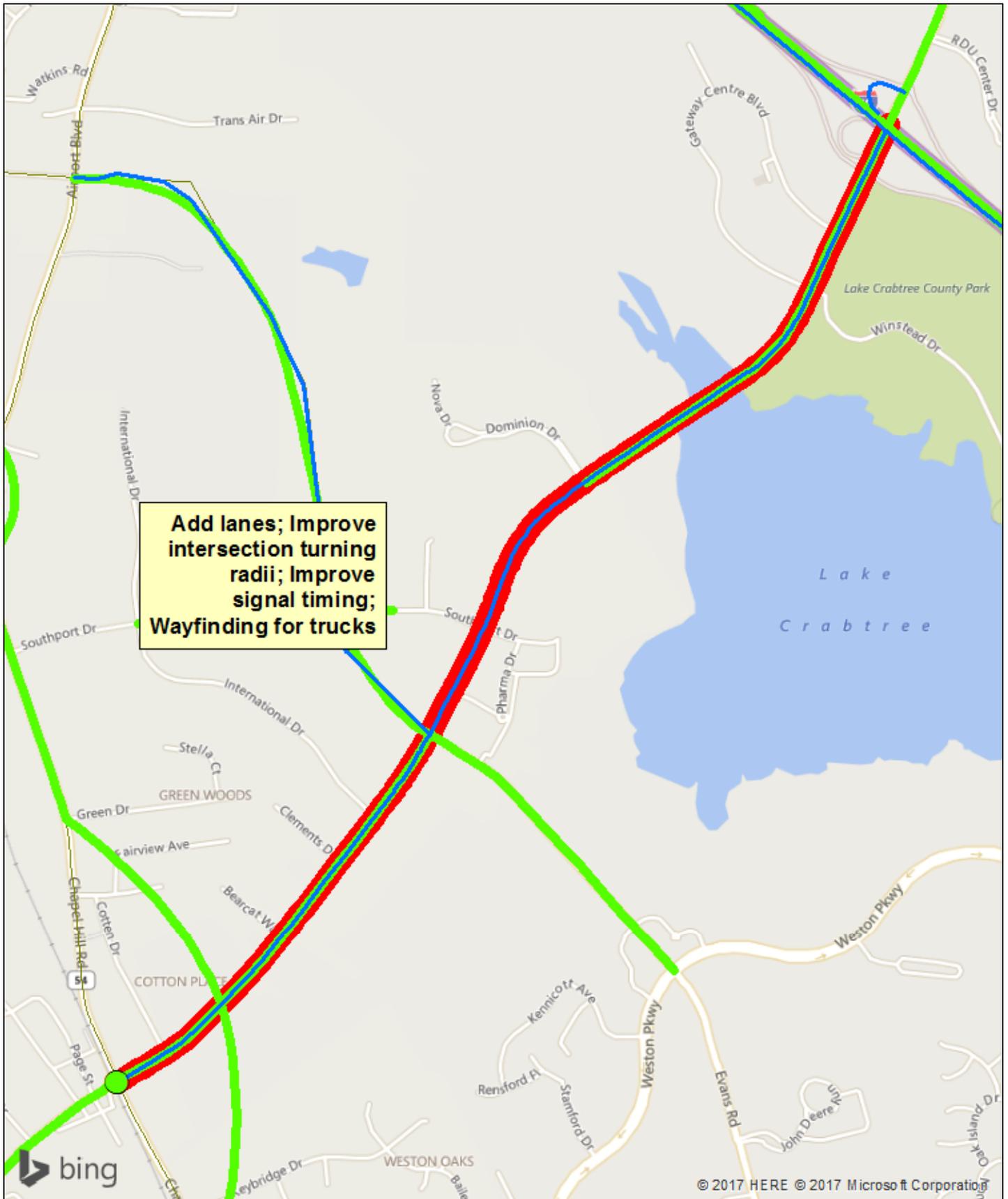
- █ Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 64**

**NC 54: NC 540 to Aviation pkwy**

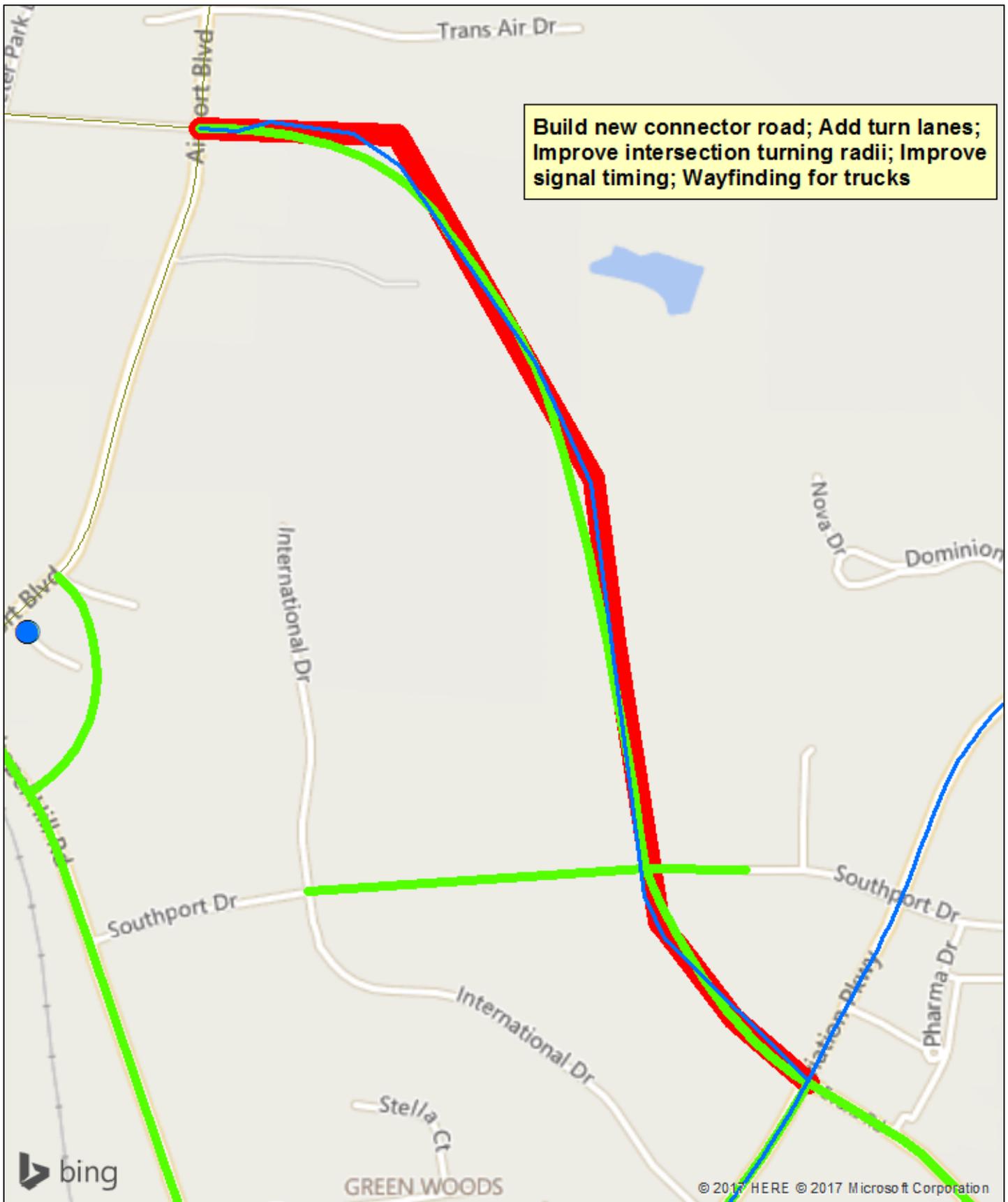
- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 65**

**Aviation Pkwy: NC 54 to I-40**

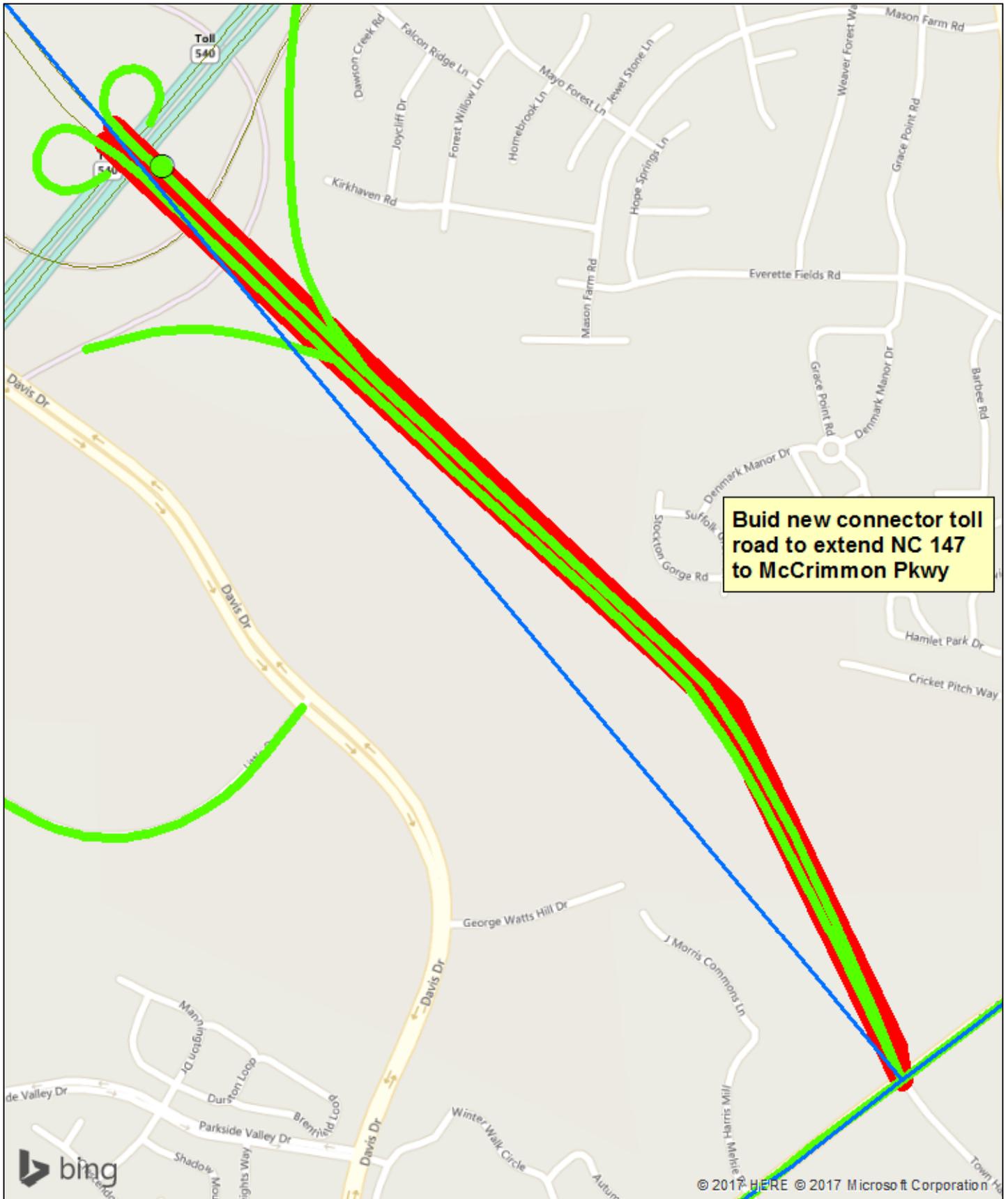
- Recommended Freight Project
- STIP Projects
- MTP Projects



**Project No. 66**

**McCrimmon Pkwy: Airport Blvd to Aviation Pkwy**

- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects



**Project No. 67**

**New Connector Rd: McCrimmon Pkwy to NC 540**

- Recommended Freight Project
- STIP Projects
- MTP Projects
- STIP Projects
- MTP Projects





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