

MEMORANDUM

January 2018

TO: Nathan Adima, PE
NCDOT Roadway Design

FROM: Ivo Dernev, PE
AECOM, Technical Services of North Carolina, Inc.

SUBJECT: TIP Project No. A-0010A – Upgrade US-19/US-23 to Interstate standards (Future I-26) from SR 1477 (Broadway) to SR 2148 (Old Burnsville/Stockton Branch Rd) in Buncombe and Madison Counties, North Carolina.

Please find attached the 2017/2040 Traffic Forecast for the above mentioned project. This forecast was requested by Nathan Adima of NCDOT Roadway design Unit on September 6, 2017. The final forecast report was approved by the Transportation Planning Division on January 30, 2018.

The project will upgrade twelve miles of the US 19/US 23 Corridor (Future I-26) from just north of I-240 near Asheville to Exit 13 (Stockton Road) near the Madison County border, thus addressing traffic capacity and congestion issues. The project subject to the forecast analysis is located within the boundary of the French Broad River Metropolitan Planning Organization's (FBRMPO) and is part of the 2015 French Broad River Travel Demand Model, Version 2 (2015 FBRTDM v2) roadway network.

Previous traffic forecast for project A-0010A was developed in June 2013 by NCDOT with Base Year 2013 and Future Year 2040. One traffic forecast for project I-2513 adjacent to A-0010A was identified. The forecast was completed by AECOM in June, 2016 and its study area's northern section overlaps with the southern end of the current forecast study area. The common roadway segment of US 19/US 23 (Future I-26) is between south of SR 1781 (Broadway) and north of SR 1684 (Elk Mountain Rd).

The current traffic forecast includes the analyses for five scenarios, one 2017 Base Year and four 2040 Future Year scenarios:

- **2017 Base Year No-Build Scenario** – Existing Conditions
- **2040 Future Year No-Build Scenario** – Existing Conditions
- **2040 Future Year Build Scenario – Alternative 1**
 - Future I-26 from North of I-240 to Exit 23 (Newbridge Pkwy) – 8 lanes
 - Future I-26 from Exit 23 (Newbridge Pkwy) to Exit 19 (US 25/70 – Weaver Blvd) – 6 lanes
 - Future I-26 from Exit 19 (US 25/70 – Weaver Blvd) to Exit 13 (Stockton Rd) – 4 lanes
- **2040 Future Year Build Scenario – Alternative 2**
 - Future I-26 from North of I-240 to Exit 23 (Newbridge Pkwy) – 6 lanes
 - Future I-26 from Exit 23 (Newbridge Pkwy) to Exit 19 (US 25/70 – Weaver Blvd) – 6 lanes
 - Future I-26 from Exit 19 (US 25/70 – Weaver Blvd) to Exit 13 (Stockton Rd) – 4 lanes
- **2040 Future Year Build Scenario – Alternative 3**
 - Future I-26 from North of I-240 to Exit 23 (Newbridge Pkwy) – 6 lanes
 - Future I-26 from Exit 23 (Newbridge Pkwy) to Exit 19 (US 25/70 – Weaver Blvd) – 4 lanes
 - Future I-26 from Exit 19 (US 25/70 – Weaver Blvd) to Exit 13 (Stockton Rd) – 4 lanes

Certain assumptions were made in the development of the forecast:

Fiscal Constraint: The project is located within the boundaries of a MPO; therefore the travel demand model and traffic forecasts are fiscally-constrained to match the assumptions of the FBRMPO 2040 MTP. Nearby projects included in the 2040 MTP document that were considered as projects anticipated to have possible impact on traffic volumes and patterns in the current traffic forecast vicinity are:

- I-2513B – I-240/Future I-26 (Asheville Connector) from I-26 to US 19/US 23/US 70. Multi-lane freeway, part on new location.
- I-2513A – I-240/Future I-26 (Asheville Connector) from north of I-26-40 split to north of SR 3548 (Haywood Road).
- I-4700A – I-26 from NC 280 to I-40 at Asheville. Add Additional Lanes. Section A: NC 146 (Long Shoals Road) to I-40.
- U-5868 – Riverside Drive (Wilma Dykeman Riverway) widening from NC 251/Broadway (SR 1781) to Hill Street
- U-5832 - Widen Riverside Drive (Wilma Dykeman Riverway) from NC 251/Broadway (SR 1781) to Hill Street

If it is determined that any of these assumptions have become inconsistent with the project and surrounding area, please request updated traffic projections at this location.

Travel Demand Model: The 2015 French Broad River Travel Demand Model, Version 2, (2015 FBRTDM v2), adopted in January 2016, was used as a tool in the development of this forecast.

Development Activity: Based upon information provided by interviewees, some developments are proposed for construction in the study area. The developments were described in further detail in the report and were considered while developing this forecast.

Forecast Methodology: The 2017 traffic volumes and design factors were developed based upon current counts, historic AADT trend projections and previous forecasts.

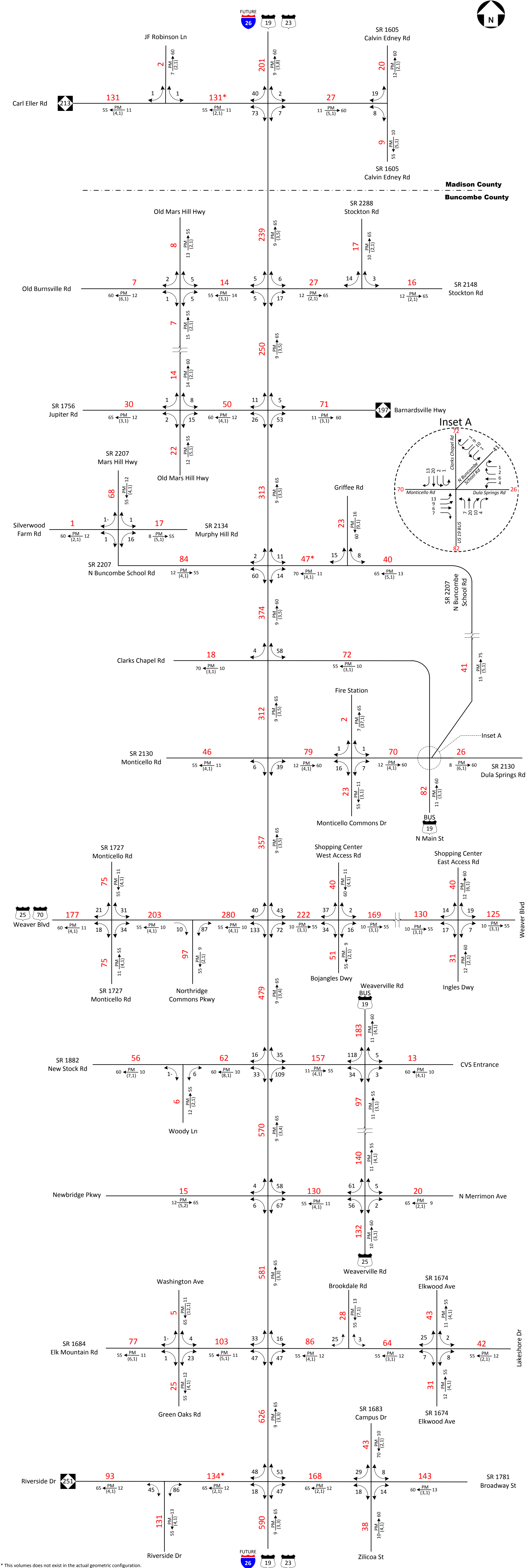
The 2015 FBRTDM v2 was relied upon in the calculation of the 2017 Base Year and 2040 Future Year traffic volumes. Historic growth rates were analyzed and compared to modeled growth rates. Engineering judgment adjustments were applied as needed in finalizing the volumes in order to develop a balanced forecast.

Interpolation: To determine any intermediate years, straight-line interpolation may be used. AADT volumes may be extrapolated for up to two years immediately following 2040. If it is determined that any of these assumptions have become inconsistent with the project and surrounding area activity, please request updated projections at this location.

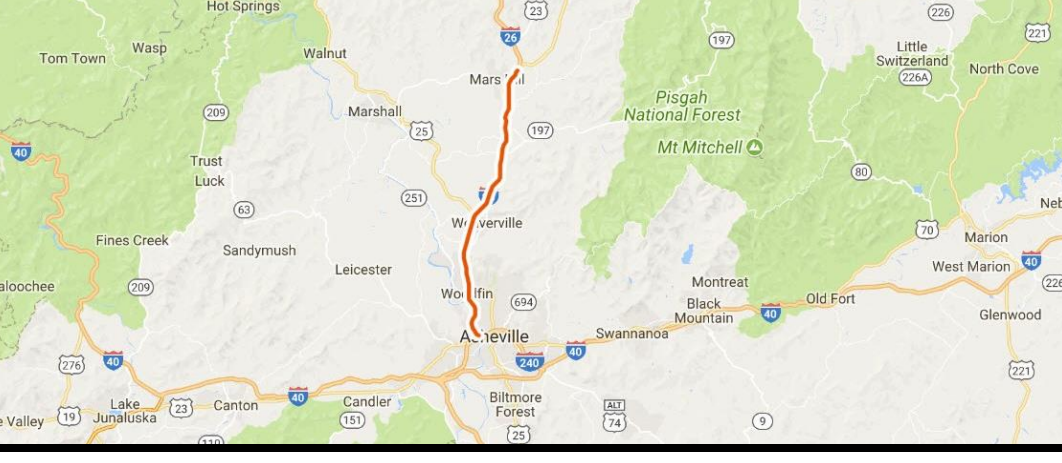
If you have any questions or if I can be of further assistance, please do not hesitate to call me at (919) 239-7203, or e-mail me at ivo.dernev@aecom.com.

cc: FILE (Buncombe and Madison Counties, TIP Project A-0010A)

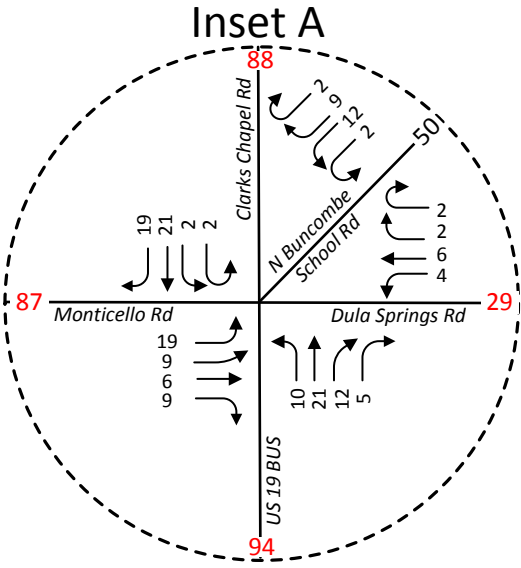
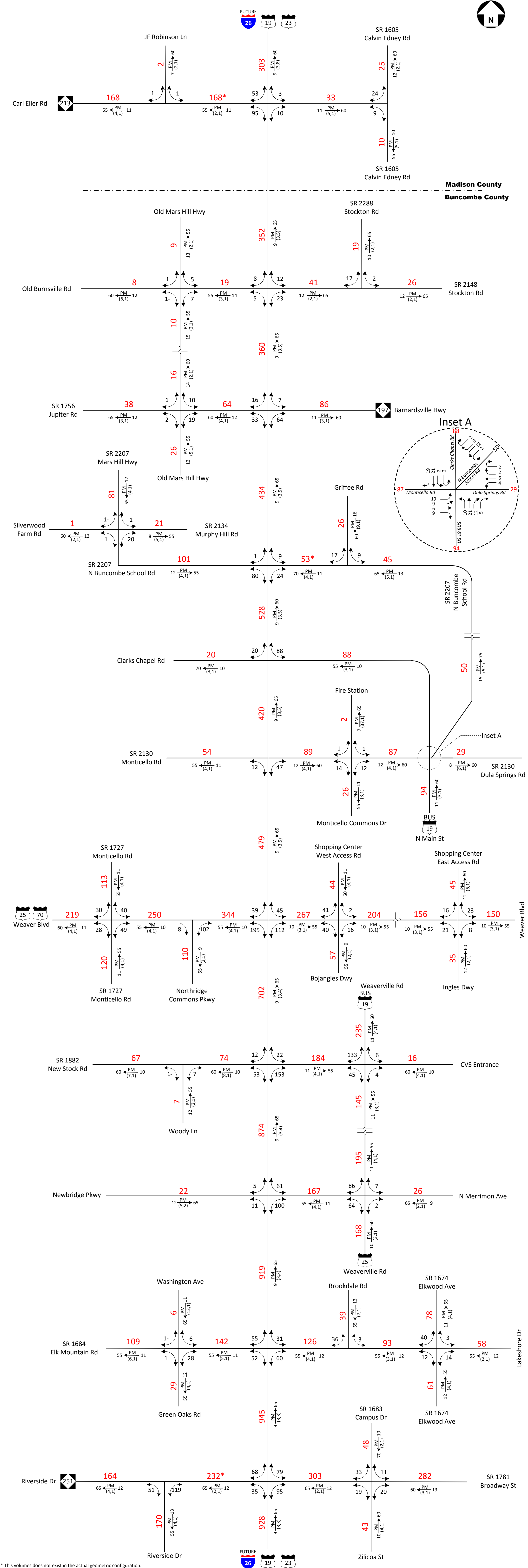
cc: (via e-mail as PDF attachments)
Keith Dixon, State Traffic Forecasting Engineer
James Dunlop, PE, Congestion Management Section
Brenda Moore, PE, CPM, Roadway Design Unit
Clark Morrison, PE, Pavement Management Unit
Brendan Merithew, PE, Highway Division 13 Planning Engineer
Lyuba Zuyeva, AICP, French Broad River MPO Director
Daniel Sellers, PE, French Broad River MPO Group



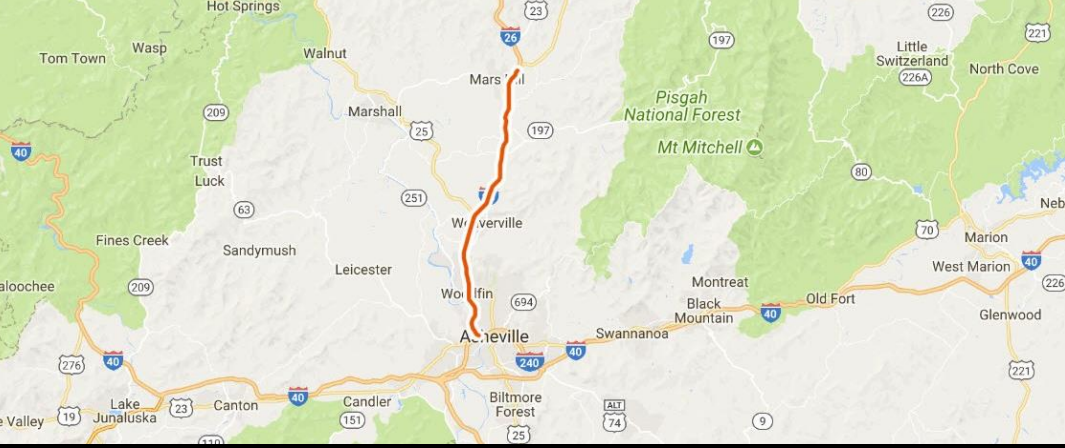
* This volumes does not exist in the actual geometric configuration. Interstate ramps are broken out separately.



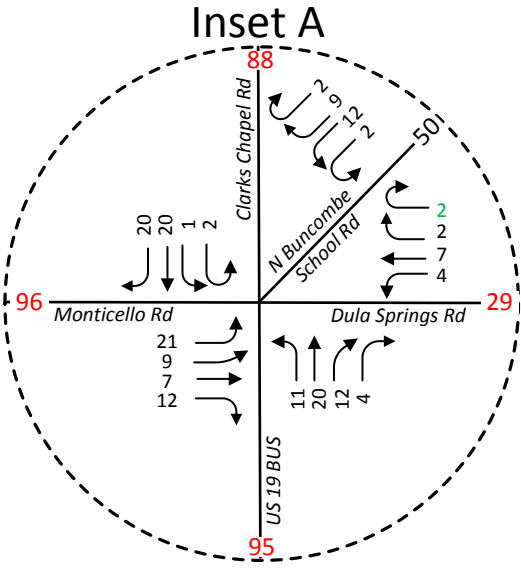
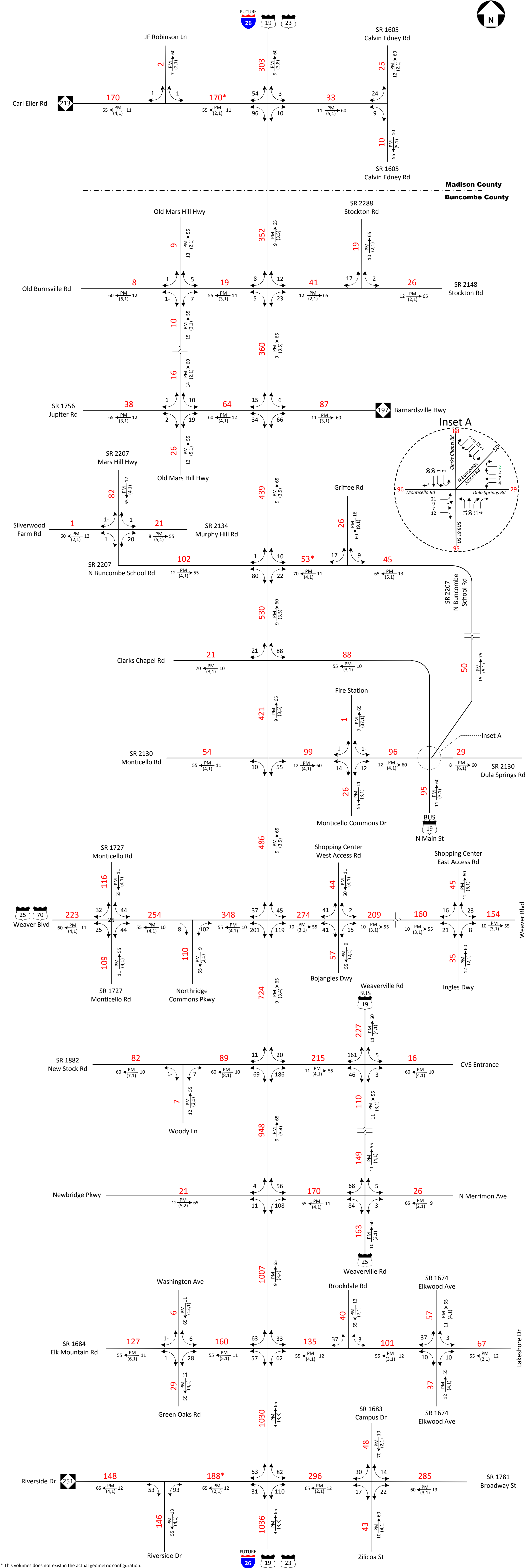
2017 AVERAGE ANNUAL DAILY TRAFFIC		BY No Build	
####	No. of Vehicles Per Day in 100s	TIP: A-0010	WBS: 32573.1.9
1-	Less than 50 vpd	COUNTY: Buncombe & Madison	DIVISION: 13
X	Movement Prohibited	DATE: January 2018	
	$K \frac{PM}{(d, t)} \rightarrow D$	PREPARED BY: AECOM	
K	Design Hour Factor (%)	LOCATION: I-26 (US 19/US 23) from SR 1781 (Broadway St) to NC 213	
PM	PM Peak Period	PROJECT: Upgrade existing US 19/US 23 to interstate standards & widen from SR 1781 to US 25/US 70	
D	Peak Hour Directional Split (%)		
$\rightarrow$	Indicates Direction of D		
(d, t)	Duals, TT-STs (%)		



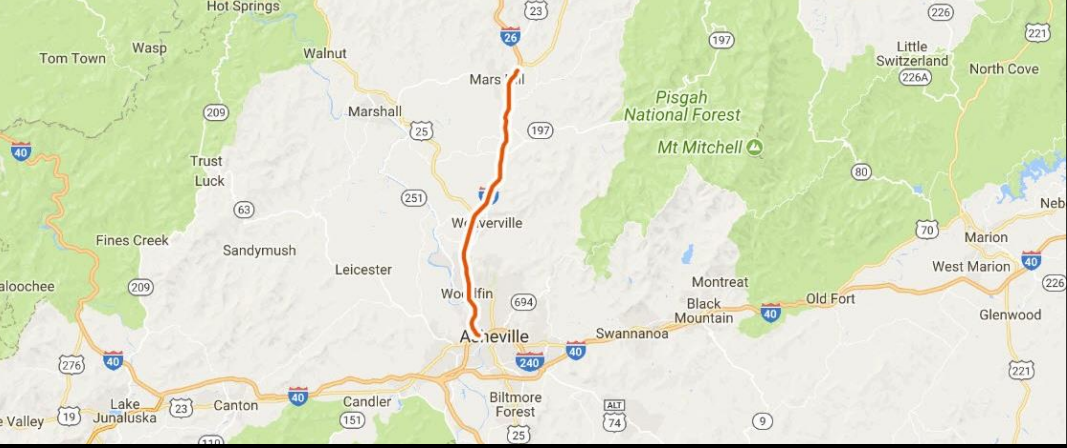
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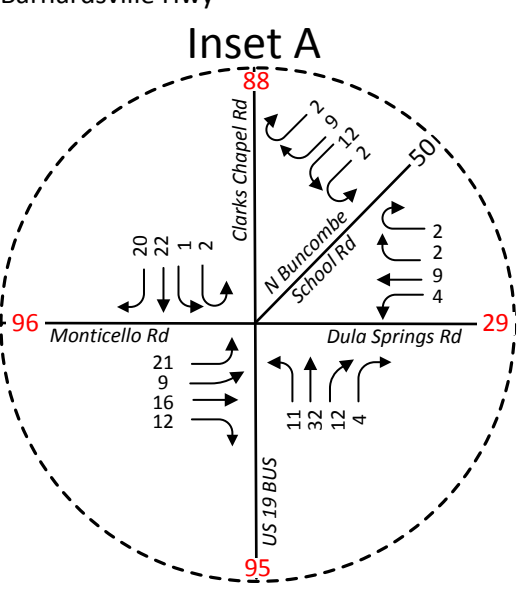
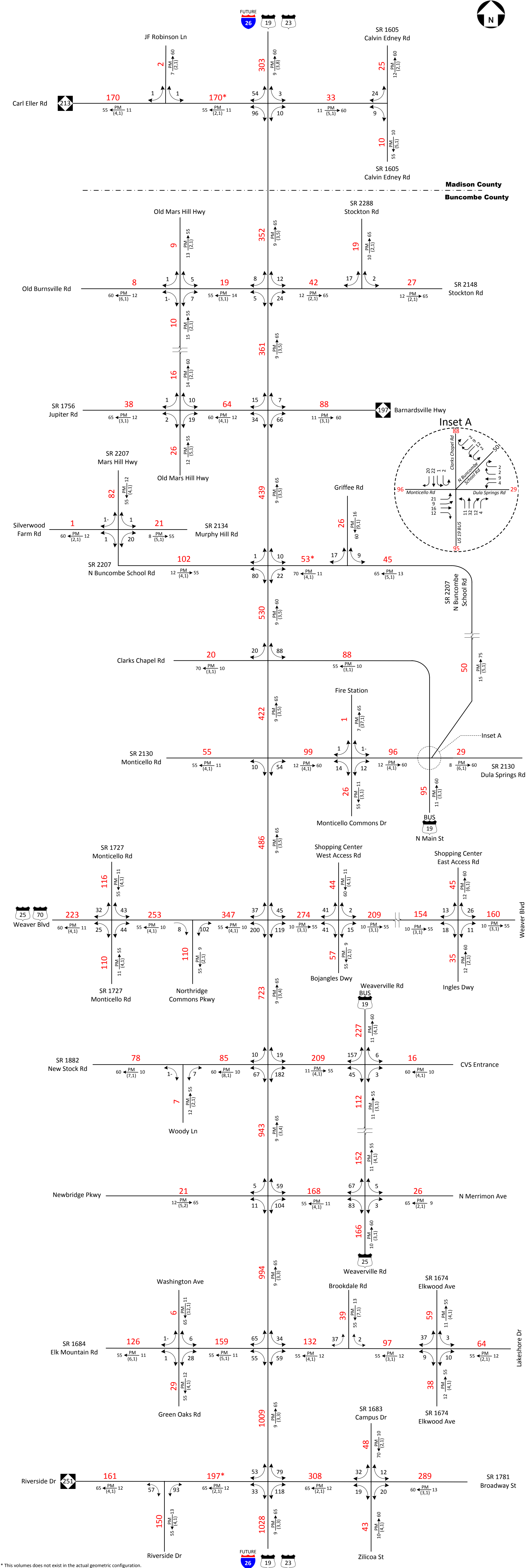
2040 AVERAGE ANNUAL DAILY TRAFFIC		FY No Build	
####	No. of Vehicles Per Day in 100s	TIP: A-0010	WBS: 32573.1.9
1-	Less than 50 vpd	COUNTY: Buncombe & Madison	DIVISION: 13
X	Movement Prohibited	DATE: January 2018	
	K $\xrightarrow{\text{PM}}$ D	PREPARED BY: AECOM	
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(d, t)	Duals, TT-STs (%)		



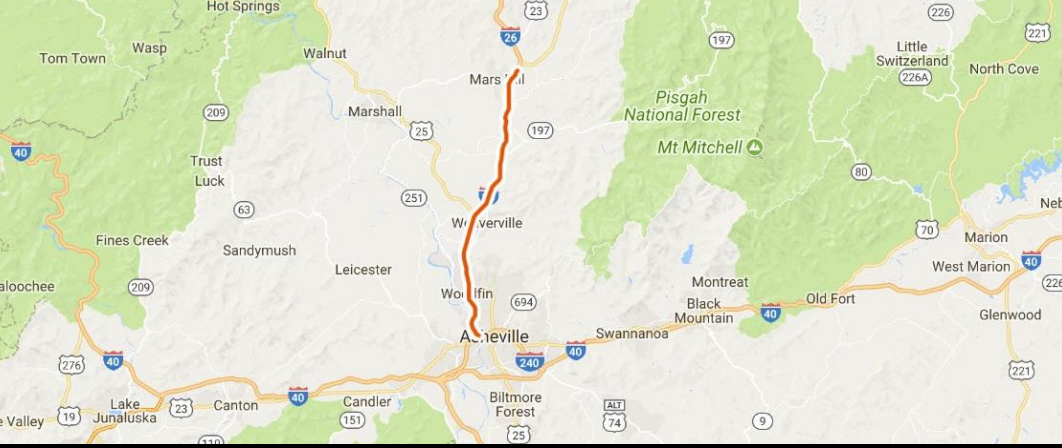
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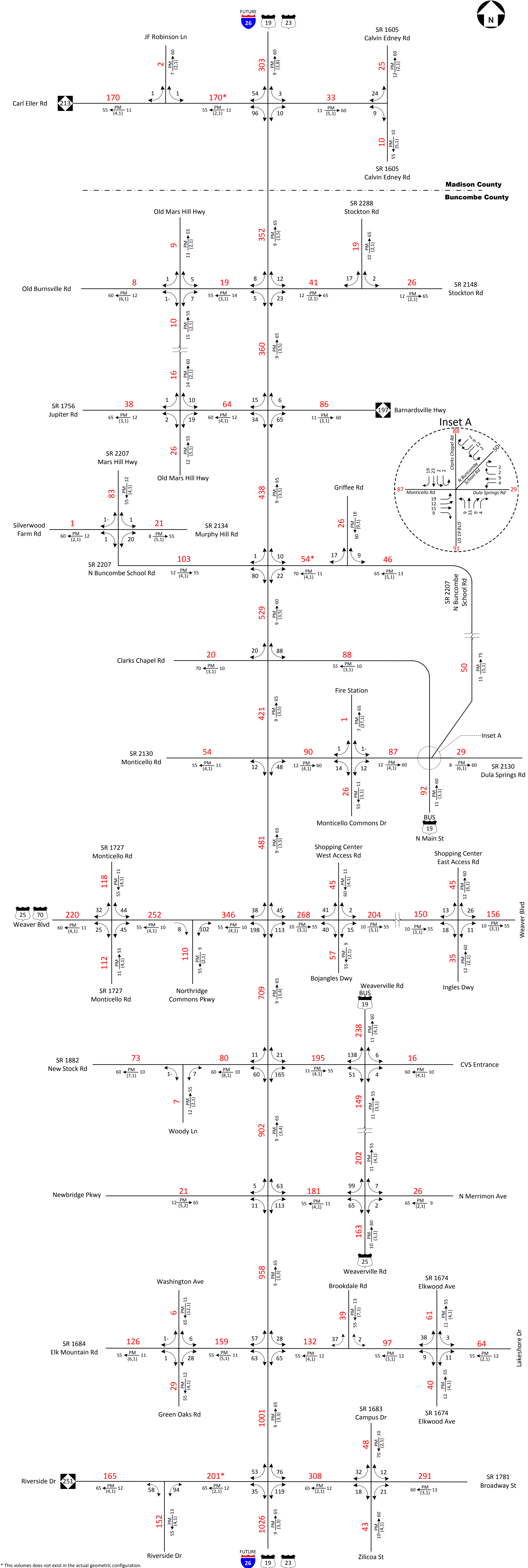
2040 AVERAGE ANNUAL DAILY TRAFFIC		FY Build 1	
SHEET 3 OF 5		TIP: A-0010	WBS: 32573.1.9
		COUNTY: Buncombe & Madison	DIVISION: 13
		DATE: January 2018	
		PREPARED BY: AECOM	
		LOCATION: I-26 (US 19/US 23) from SR 1781 (Broadway St) to NC 213	
		PROJECT: Upgrade existing US 19/US 23 to interstate standards & widen from SR 1781 to US 25/US 70	



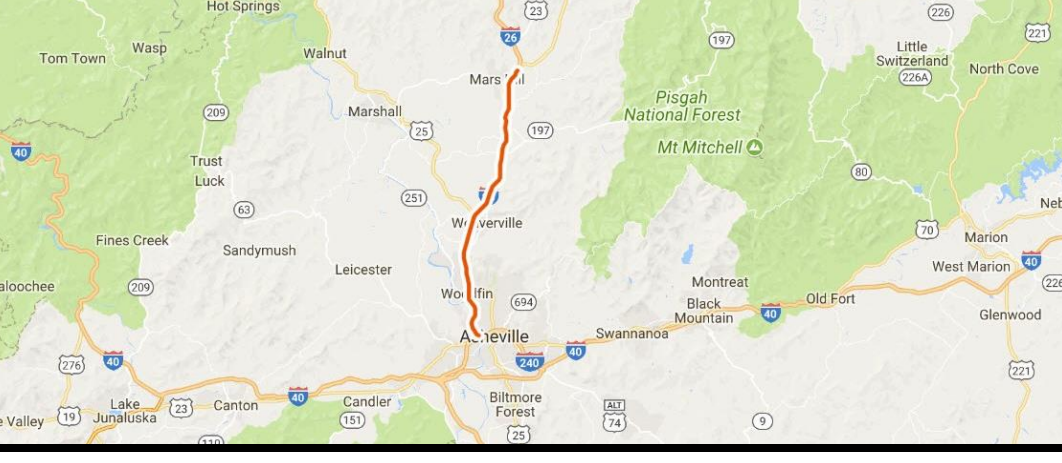
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2040 AVERAGE ANNUAL DAILY TRAFFIC		FY Build 2	
SHEET 4 OF 5		TIP: A-0010	WBS: 32573.1.9
		COUNTY: Buncombe & Madison	DIVISION: 13
		DATE: January 2018	
		PREPARED BY: AECOM	
		LOCATION: I-26 (US 19/US 23) from SR 1781 (Broadway St) to NC 213	
		PROJECT: Upgrade existing US 19/US 23 to interstate standards & widen from SR 1781 to US 25/US 70	



* This volumes does not exist in the actual geometric configuration. Interstate ramps are broken out separately.



2040 AVERAGE ANNUAL DAILY TRAFFIC		FY Build 3	
SHEET 5 OF 5		TIP: A-0010	WBS: 32573.1.9
		COUNTY: Buncombe & Madison	DIVISION: 13
		DATE: January 2018	
		PREPARED BY: AECOM	
		LOCATION: I-26 (US 19/US 23) from SR 1781 (Broadway St) to NC 213	
		PROJECT: Upgrade existing US 19/US 23 to interstate standards & widen from SR 1781 to US 25/US 70	