



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

1554 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1554

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

April 16, 2015

MEMORANDUM TO: Undrea Major
Project Development – West Region/Turnpike
Project Development & Environmental Analysis Branch

FROM: Paul S. Schroeder, PhD, PE
Western Traffic Forecasting Group
Transportation Planning Branch

SUBJECT: Traffic Forecast for B-5372
Cabarrus County
Bridge No. 109 along SR 1706 over US 29

Please find attached the 2015/2040 traffic forecast for B-5372 in Cabarrus County. The project is located in the City of Kannapolis and concerns the replacement of bridge no. 109 along SR 1706 (E. 1st Street) over US 29 (N. Cannon Boulevard).

Project B-5372 is located within the Cabarrus-Rowan MPO (CRMPO). It is included within the 2040 Metropolitan Transportation Plan (MTP) of the MPO.

There is no prior forecast for B-5372.

The following individuals were consulted during the development of this forecast update:

- Cabarrus-Rowan MPO Coordinator, Phil Conrad
- City of Kannapolis Planning Director, Zachary Gordon
- NCDOT Division 10 Planning Engineer, Stuart Basham
- NCDOT Cabarrus-Rowan MPO Coordinator, Linda Dosse, PE

The following scenarios are provided:

- 2015 No Build / Build
- 2040 No Build / Build

A combined No Build and Build forecast is provided. The replacement of bridge no. 109 will not affect travel demand.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING BRANCH
1554 MAIL SERVICE CENTER
RALEIGH NC 27699-1554



LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH, NC 27601
Phone: 919-707-0900
Fax: 919-733-9794

Certain Assumptions were made during the development of this forecast.

Fiscal Constraint:

Within an MPO area, future year forecasts assume construction of projects listed within an MPO's MTP. This forecast is consistent with the CRMPO current MTP which was adopted in March 2014.

The project is listed in the 2015-2025 Draft STIP for construction in 2019.

Development Activity:

There is no current substantial development under construction either within or near the B-5372 project area. There are no other substantial permitted land development plans in the immediate area of the project, although there is potential for development along SR 1706 west of the project area in downtown Kannapolis.

Forecast Methodology:

The 2015 estimates were based upon 2015 traffic counts and historic AADT trends.

The 2040 forecast was developed based upon travel demand predictions of the Metrolina Regional Travel Demand Model 2014 (MRM14v1.0).

The use of straight-line interpolation to estimate AADT for years between 2015 and 2040, and straight-line extrapolation to estimate AADT for up to 2 years beyond 2040, is acceptable.

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.

For future reference, this forecast will be saved in Project Store in the LongRangePlanning\Traffic Forecasts folder, under project B5372.

If we can be of any further assistance please do not hesitate to contact me at 707-0983, email: pschroeder@ncdot.gov or Michael Orr at 707-0982, email: mlorr@ncdot.gov.

cc (with Attachments):

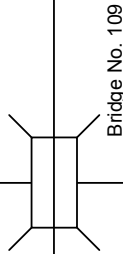
Glenn W. Mumford, PE, Highway Design Branch
Jamal Alavi, PE, Transportation Planning Branch
State Traffic Forecast Engineer, Transportation Planning Branch
James Dunlop, PE, Congestion Management Section
Clark Morrison, PhD, PE, Pavement Management
Phil Conrad, Cabarrus-Rowan MPO Coordinator
Stuart Basham, Division 10 Planning Engineer
File Copy: B-5372 Cabarrus County



SR 1706
E. 1st St

30
11 PM (4,1) → 55

239
9 PM (2,1) ← 55



US 29
N. Cannon Blvd

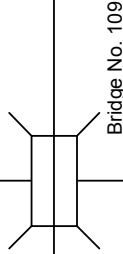
2015 No Build/Build AADT



SR 1706
E. 1st St

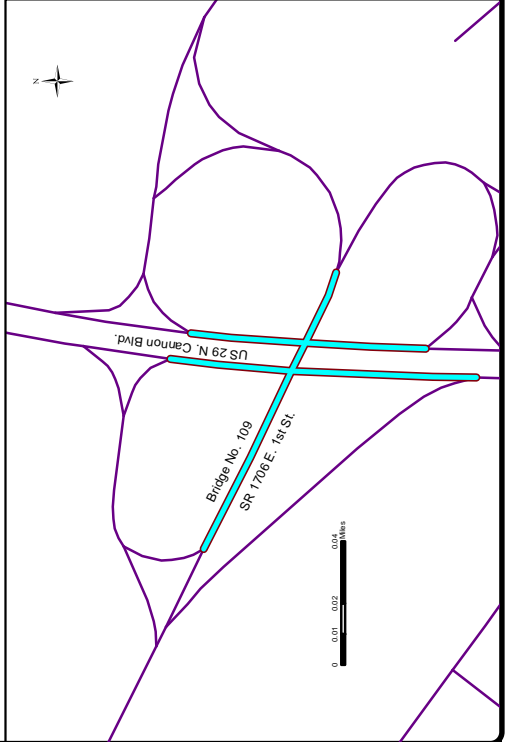
56
11 PM (4,1) → 55

254
9 PM (2,1) ← 55



US 29
N. Cannon Blvd

2040 No Build/Build AADT



2015/2040

AVERAGE ANNUAL
DAILY TRAFFIC

No Build / Build
SHEET 1 OF 1

LEGEND

- ### No. of Vehicles Per Day in 100s
- 1- Less than 50 vpd
- X Movement Prohibited
- K Design Hour Factor (%)
- PM PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TT-STs (%)

TIP: B-5372

WBS: 46087.1.1

COUNTY: Cabarrus

DIVISION: 10

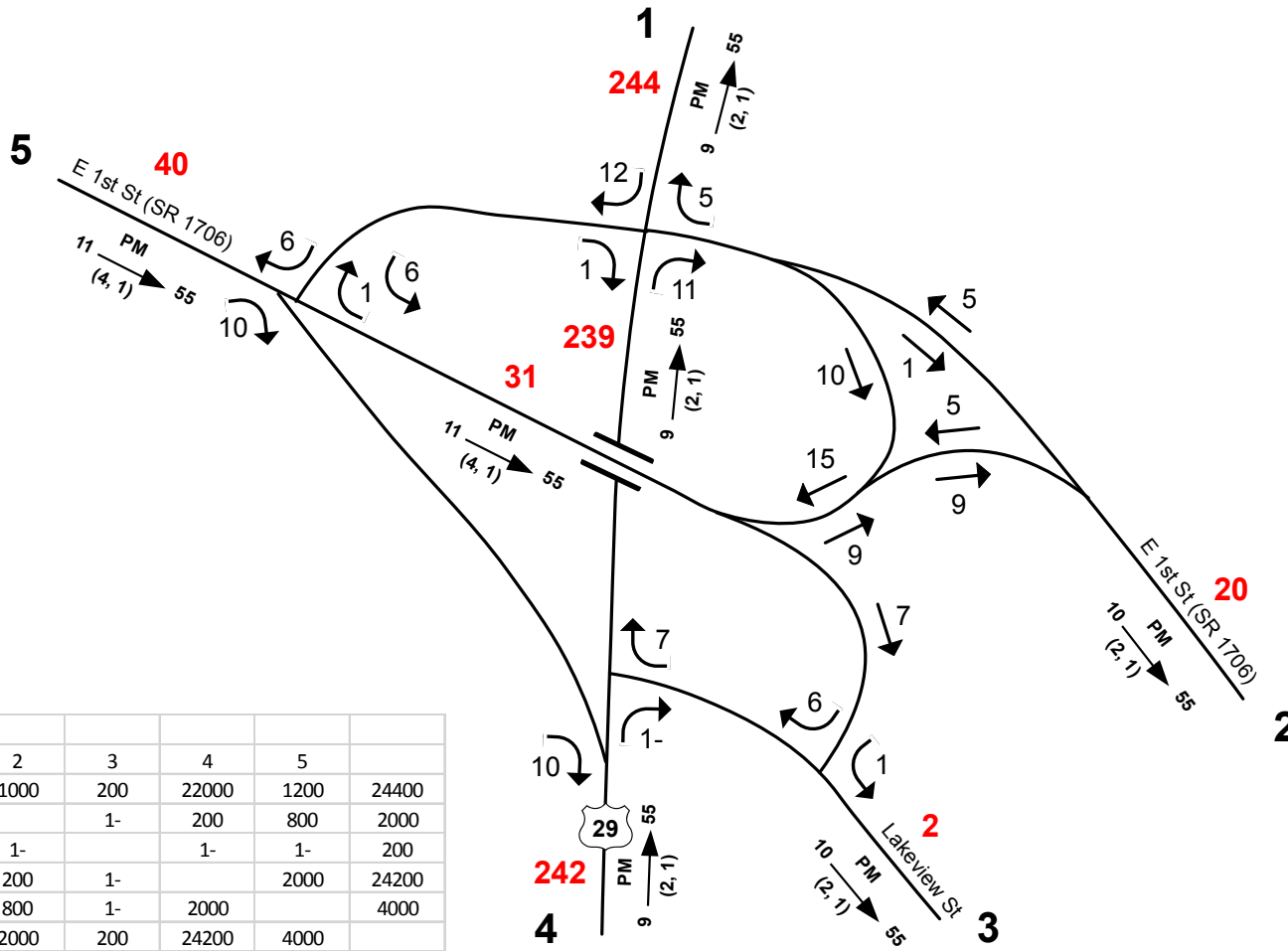
DATE: April 16, 2015

PREPARED BY: Paul Schroeder, PhD PE

LOCATION: Bridge No. 109 along SR 1706 over US 29

PROJECT: Replace Bridge No. 109

2015 Matrix						
	1	2	3	4	5	
1		1000	200	22000	1200	24400
2	1000		1-	200	800	2000
3	200	1-		1-	1-	200
4	22000	200	1-		2000	24200
5	1200	800	1-	2000		4000
	24400	2000	200	24200	4000	



2015 ANNUAL AVERAGE DAILY TRAFFIC

NO BUILD

SHEET 1 - 1

LEGEND

- ### No. of Vehicles Per Day in 100s
- 1- Less than 50 vpd
- X Movement Prohibited
- $K \frac{PM}{(d, t)} \rightarrow D$
- K Design Hour Factor (%)
- PM PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TT-STs (%)

TIP: B-5372

WBS: 46087.1.1

COUNTY: Cabarrus

DIVISION: 10

DATE: 2-26-2018

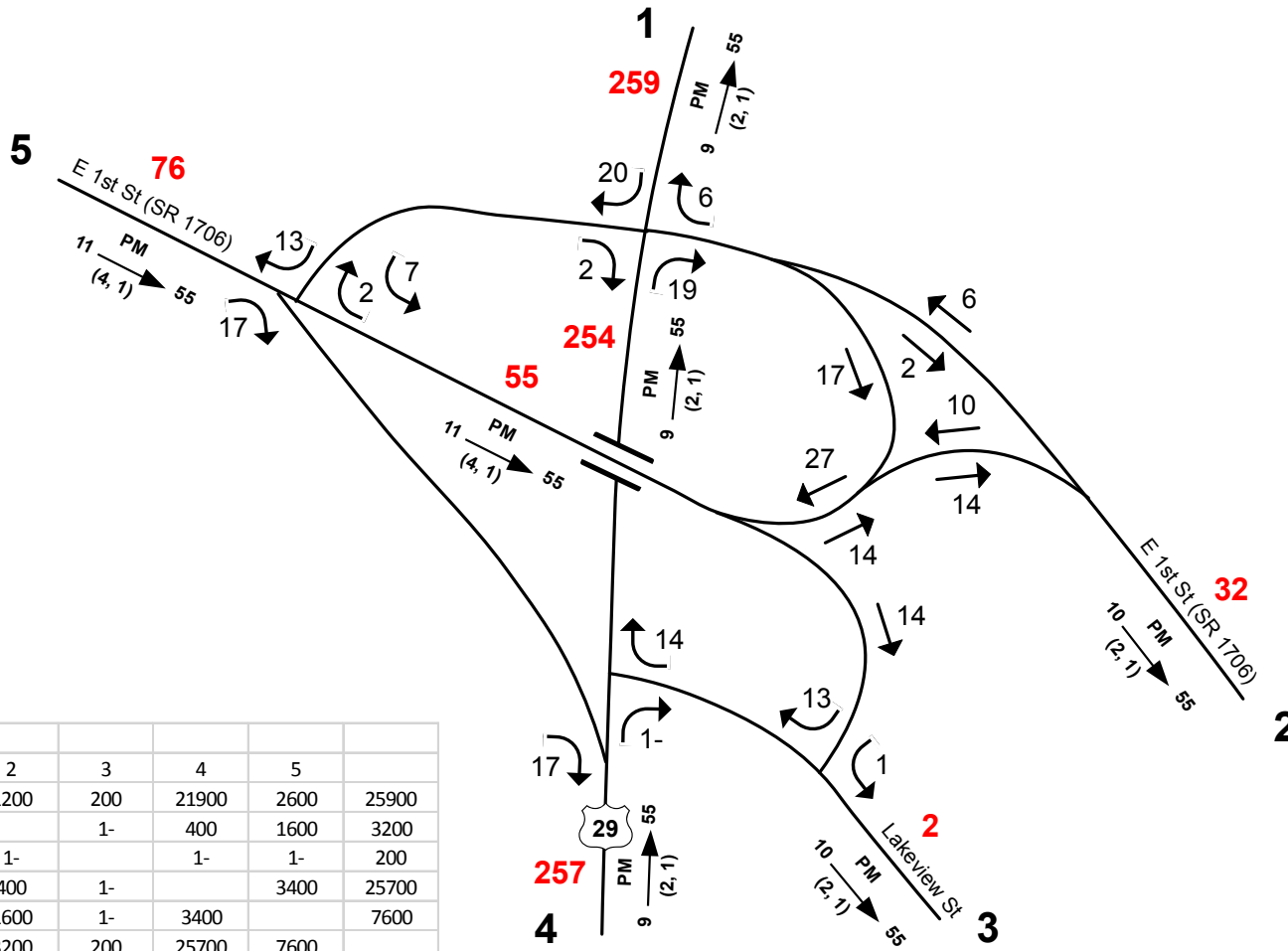
PREPARED BY: Keith Dixon

LOCATION:

Bridge #109 on SR 1706 over US 29

PROJECT:

Replace Cabarrus County Bridge #109



2040 Matrix		1	2	3	4	5	
	1		1200	200	21900	2600	25900
	2	1200		1-	400	1600	3200
	3	200	1-		1-	1-	200
	4	21900	400	1-		3400	25700
	5	2600	1600	1-	3400		7600
		25900	3200	200	25700	7600	

2040 ANNUAL AVERAGE DAILY TRAFFIC

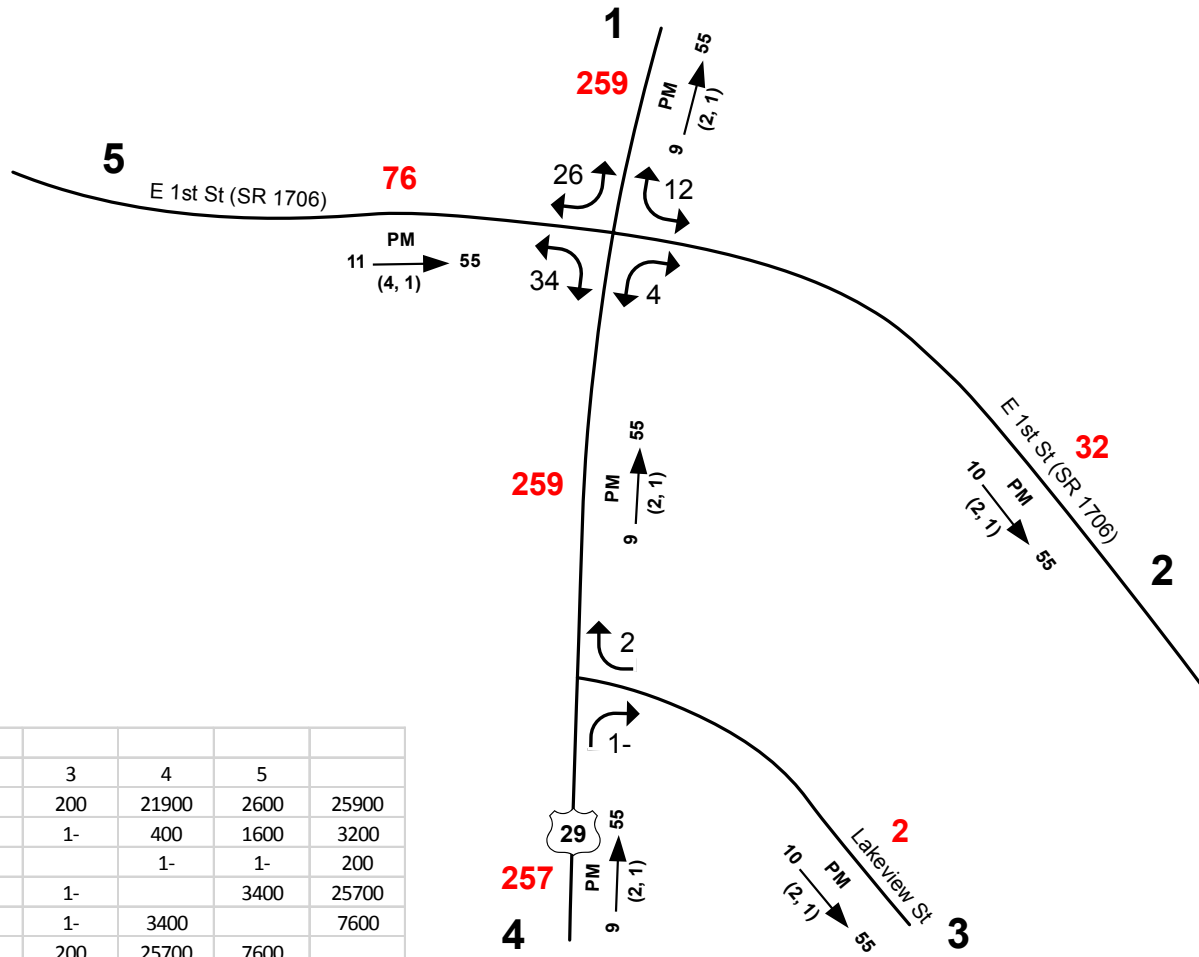
NO BUILD

SHEET 2 - 1

LEGEND

- ### No. of Vehicles Per Day in 100s
- 1- Less than 50 vpd
- X Movement Prohibited
- $K \frac{PM}{(d, t)} \rightarrow D$
- K Design Hour Factor (%)
- PM PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TT-STs (%)

TIP: B-5372		WBS: 46087.1.1	
COUNTY: Cabarrus		DIVISION: 10	
DATE: 2-26-2018			
PREPARED BY: Keith Dixon			
LOCATION: Bridge #109 on SR 1706 over US 29			
PROJECT: Replace Cabarrus County Bridge #109			



2040 ANNUAL AVERAGE DAILY TRAFFIC

BUILD

SHEET 3 - 1

LEGEND

- ### No. of Vehicles Per Day in 100s
- 1- Less than 50 vpd
- X Movement Prohibited
- $$K \xrightarrow[\text{(d, t)}]{\text{PM}} D$$
- K Design Hour Factor (%)
- PM PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TT-STs (%)

TIP: B-5372

WBS: 46087.1.1

COUNTY: Cabarrus

DIVISION: 10

DATE: 2-26-2018

PREPARED BY: Keith Dixon

LOCATION:

Bridge #109 on SR 1706 over US 29

PROJECT:

Replace Cabarrus County Bridge #109